

Appendix B: SEM/AVS Calculations

Appendix B - Table List

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List of Lab and Data Qualifying Acronyms

- <RDL** Less than reporting detection limit
- <MDL** Less than method detection limit
- J** Estimated value
- JG** Estimated value, probable low bias
- U** Not detected

Appendix B: Example SEM/AVS Calculations

Simultaneously Extracted Metals (SEM) and Acid Volatile Sulfides (AVS) Ratio Calculations

$$\text{SEM/AVS} = (\text{Cd} + \text{Cu} + \text{Pb} + \text{Ni} + 2\text{Ag}^{\text{a}} + \text{Zn Molar Concentration}) / (\text{AVS Molar Concentration})$$

^aMoles of silver are multiplied by two because silver binds twice to AVS.

Metal Concentration ÷ Molecular Weight = Molar Concentration

If **SEM/AVS > 1**, there is not enough AVS to sequester all metals. **Metals are bioavailable.**

If **SEM/AVS < 1**, there is enough AVS to sequester all metals. **Metals are NOT bioavailable.**

NOTE:

If AVS is below detection limits (MDL), then metals are assumed bioavailable as they are not sequestered by AVS.

SAMPLE CALCULATIONS:

Locator:	Sample					
Descrip:	Sample					
Sample:	Sample					
Matrix:	Sample					
ColDate:	Sample					
TotalSolid:	Sample					
	DRY Weight Basis					
Parameters	Value	Lab Qual	MDL	RDL	Units	
Cadmium, Extractable, SEM	—	<MDL	0.11	0.575	mg/Kg	<i>Concentration found</i>
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	<i>Molecular Weight</i>
Cadmium, Extractable, SEM	ND	—	0.00098	0.00512	mmol/Kg	<i>Calculated Molar Concentration</i>
Copper, Extractable, SEM	17.2	—	0.23	1.15	mg/Kg	"
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	"
Copper, Extractable, SEM	0.271	—	0.0036	0.0181	mmol/Kg	"
Lead, Extractable, SEM	6.3	—	1.1	5.75	mg/Kg	"
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	"
Lead, Extractable, SEM	0.030	—	0.0053	0.0278	mmol/Kg	"
Nickel, Extractable, SEM	5.38	—	0.28	1.44	mg/Kg	"
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	"
Nickel, Extractable, SEM	0.0917	—	0.0048	0.0245	mmol/Kg	"
Silver, Extractable, SEM	—	<MDL	0.23	1.15	mg/Kg	"
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	"
Silver, Extractable, SEM	ND	—	0.0021	0.0107	mmol/Kg	"
Zinc, Extractable, SEM	25.6	—	0.28	1.44	mg/Kg	"
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	"
Zinc, Extractable, SEM	0.392	—	0.0043	0.0220	mmol/Kg	"
Total SEM	0.78	—	—	—	mmol/Kg	<i>Summed Total Molar Concentration</i>
Acid Volatile Sulfide (AVS)	39.9	JG	3.7	14.2	mg/Kg	<i>Concentration found</i>
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	<i>Molecular Weight</i>
Acid Volatile Sulfide (AVS)	1.24	—	0.12	0.443	mmol/Kg	<i>Calculated Molar Concentration</i>
SEM/AVS	0.63	—	—	—	—	<i>Calculated Ratio of Total SEM/AVS</i>

White rows are measured values, blue rows are conversion factors and green rows are calculated values.

Table B-1: Springbrook Creek Basin Sediment SEM/AVS Calculations

Project: 421240C Locator: '0317 Descrip: SPRINGBROOK CREEK/ Sample: L46069-8 Matrix: SE FRSHWTRSED ColDate: 7/28/08 8:50 TotalSolid: 48.5 DRY Weight Basis		421240C K317 SPRINGBROOK CREEK L46094-12 SE FRSHWTRSED 8/5/08 10:15 33.1 DRY Weight Basis								
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	1.11	—	0.082	0.412	mg/Kg	1.82	—	0.12	0.598	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.00987	—	0.00073	0.00367	mmol/Kg	0.0162	—	0.0011	0.00532	mmol/Kg
Copper, Extractable, SEM	17.9	—	0.16	0.825	mg/Kg	25	—	0.24	1.2	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.282	—	0.0025	0.0130	mmol/Kg	0.39	—	0.0038	0.0189	mmol/Kg
Lead, Extractable, SEM	19.4	—	0.82	4.12	mg/Kg	22.2	—	2.4	12	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0936	—	0.0040	0.0199	mmol/Kg	0.107	—	0.012	0.058	mmol/Kg
Nickel, Extractable, SEM	5.11	—	0.21	1.03	mg/Kg	4.11	—	0.6	2.99	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0871	—	0.0036	0.0175	mmol/Kg	0.0700	—	0.01	0.0509	mmol/Kg
Silver, Extractable, SEM	0.27	<RDL	0.16	0.825	mg/Kg	0.33	<RDL	0.24	1.2	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	0.0025	—	0.0015	0.00765	mmol/Kg	0.0031	—	0.0022	0.011	mmol/Kg
Zinc, Extractable, SEM	109	—	0.21	1.03	mg/Kg	267	—	0.3	1.5	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	1.67	—	0.0032	0.0158	mmol/Kg	4.08	—	0.005	0.023	mmol/Kg
Total SEM	2.1	—	—	—	mmol/Kg	4.68	—	—	—	mmol/Kg
Acid Volatile Sulfide (AVS)	326	JG	13	51.5	mg/Kg	30.5	JG	0.76	3.02	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Acid Volatile Sulfide (AVS)	10.2	—	0.41	1.61	mmol/Kg	0.951	—	0.024	0.0942	mmol/Kg
SEM/AVS	0.21	—	—	—	—	4.92	—	—	—	—

Table B-1: Springbrook Creek Basin Sediment SEM/AVS Calculations

Project: 421240C Locator: L317 Descrip: SPRINGBROOK CREEK Sample: L46094-13 Matrix: SE FRSHWTRSED ColDate: 8/5/08 11:30 TotalSolid: 18.8 DRY Weight Basis						421240C M317 SPRINGBROOK CREEK L46094-14 SE FRSHWTRSED 8/5/08 12:25 10.9 DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	3.78	—	0.21	1.06	mg/Kg	2.45	—	0.37	1.84	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0336	—	0.0019	0.00943	mmol/Kg	0.0218	—	0.0033	0.0164	mmol/Kg
Copper, Extractable, SEM	42.1	—	0.43	2.12	mg/Kg	106	—	0.73	3.69	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.662	—	0.0068	0.0334	mmol/Kg	1.67	—	0.011	0.0581	mmol/Kg
Lead, Extractable, SEM	46.2	—	2.1	10.6	mg/Kg	70.7	—	3.7	18.4	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.223	—	0.010	0.0512	mmol/Kg	0.341	—	0.018	0.0888	mmol/Kg
Nickel, Extractable, SEM	7.82	—	0.53	2.65	mg/Kg	16.2	—	0.92	4.61	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.133	—	0.0090	0.0452	mmol/Kg	0.276	—	0.016	0.0785	mmol/Kg
Silver, Extractable, SEM	0.48	<RDL	0.43	2.12	mg/Kg	2.4	<RDL	0.73	3.69	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	0.0044	—	0.0040	0.0197	mmol/Kg	0.022	—	0.0068	0.0342	mmol/Kg
Zinc, Extractable, SEM	478	—	0.53	2.65	mg/Kg	806	—	0.92	4.61	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	7.31	—	0.0081	0.0405	mmol/Kg	12.3	—	0.014	0.0705	mmol/Kg
Total SEM	8.4	—	—	—	mmol/Kg	14.7	—	—	—	mmol/Kg
Acid Volatile Sulfide (AVS)	430	JG	34	133	mg/Kg	121	JG	12	45.9	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Acid Volatile Sulfide (AVS)	13.4	—	1.1	4.15	mmol/Kg	3.77	—	0.37	1.43	mmol/Kg
SEM/AVS	0.62	—	—	—	—	3.89	—	—	—	—

Table B-1: Springbrook Creek Basin Sediment SEM/AVS Calculations

Project:	421240C				
Locator:	N317				
Descrip:	SPRINGBROOK CREEK				
Sample:	L46094-15				
Matrix:	SE FRSHWTRSED				
ColDate:	8/5/08 13:15				
TotalSolid:	21.1				
	DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	1.05	—	0.19	0.943	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.00934	—	0.0017	0.00839	mmol/Kg
Copper, Extractable, SEM	35	—	0.38	1.89	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.55	—	0.0060	0.0297	mmol/Kg
Lead, Extractable, SEM	39.3	—	1.9	9.43	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.190	—	0.0092	0.0455	mmol/Kg
Nickel, Extractable, SEM	11.3	—	0.47	2.36	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.193	—	0.0080	0.0402	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.38	1.89	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0035	0.0175	mmol/Kg
Zinc, Extractable, SEM	323	—	0.47	2.36	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	4.94	—	0.0072	0.0361	mmol/Kg
Total SEM	5.88	—	—	—	mmol/Kg
Acid Volatile Sulfide (AVS)	1140	JG	30	118	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol
Acid Volatile Sulfide (AVS)	35.6	—	0.94	3.68	mmol/Kg
SEM/AVS	0.165	—	—	—	—

ND - Nondetect

Table B-2: Newaukum Creek Basin Sediment SEM/AVS Calculations

Project: 421240C Locator: X322 Descrip: NEWAUKUM CREEK NEA Sample: L48629-1 Matrix: SE FRSHWTRSED ColDate: 8/10/09 11:10 TotalSolid: 59.8 DRY Weight Basis						421240C BB322 SE 392ND ST L48629-2 SE FRSHWTRSED 8/10/09 9:50 35.4 DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	0.067	0.333	mg/Kg	0.16	<RDL	0.11	0.565	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	0.00060	0.00296	mmol/Kg	0.0014	—	0.0010	0.00503	mmol/Kg
Copper, Extractable, SEM	4.63	—	0.13	0.666	mg/Kg	7.2	—	0.23	1.13	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0729	—	0.0020	0.0105	mmol/Kg	0.11	—	0.0036	0.0178	mmol/Kg
Lead, Extractable, SEM	1.7	<RDL	0.67	3.33	mg/Kg	5.1	<RDL	1.1	5.65	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0082	—	0.0032	0.0161	mmol/Kg	0.025	—	0.0053	0.0273	mmol/Kg
Nickel, Extractable, SEM	1.92	—	0.17	0.831	mg/Kg	1.92	—	0.28	1.42	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0327	—	0.0029	0.0142	mmol/Kg	0.0327	—	0.0048	0.0242	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.13	0.666	mg/Kg	—	<MDL	0.23	1.13	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0012	0.00617	mmol/Kg	ND	—	0.0021	0.0105	mmol/Kg
Zinc, Extractable, SEM	12.2	—	0.17	0.831	mg/Kg	34.7	—	0.28	1.42	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.187	—	0.0026	0.0127	mmol/Kg	0.531	—	0.0043	0.0217	mmol/Kg
Total SEM	0.300	—	—	—	nmol/Kg	0.70	—	—	—	nmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	0.42	1.66	mg/Kg	—	<MDL,JG	0.71	2.82	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	0.013	0.0518	mmol/Kg	ND	—	0.022	0.0880	mmol/Kg
SEM/AVS	*	—	—	—	—	*	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-2: Newaukum Creek Basin Sediment SEM/AVS Calculations

Project: 421240C Locator: E322 Descrip: NEWAUKUM CREEK AT Sample: L48629-3 Matrix: SE FRSHWTRSED ColDate: 8/10/09 12:10 TotalSolid: 61.7 DRY Weight Basis						421240C F322 NEWAUKUM SAMPLE OF L48629-4 SE FRSHWTRSED 8/10/09 12:40 30.2 DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	0.065	0.324	mg/Kg	0.16	<RDL	0.13	0.662	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	0.00058	0.00288	nmol/Kg	0.0014	—	0.0012	0.00589	mmol/Kg
Copper, Extractable, SEM	3.68	—	0.13	0.647	mg/Kg	5.1	—	0.26	1.32	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0579	—	0.0020	0.0102	nmol/Kg	0.080	—	0.0041	0.0208	mmol/Kg
Lead, Extractable, SEM	2.3	<RDL	0.65	3.24	mg/Kg	5	<RDL	1.3	6.62	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.011	—	0.0031	0.0156	nmol/Kg	0.02	—	0.0063	0.0319	mmol/Kg
Nickel, Extractable, SEM	0.841	—	0.16	0.809	mg/Kg	1.5	<RDL	0.33	1.65	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0143	—	0.0027	0.0138	nmol/Kg	0.026	—	0.0056	0.0281	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.13	0.647	mg/Kg	—	<MDL	0.26	1.32	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0012	0.00600	nmol/Kg	ND	—	0.0024	0.0122	mmol/Kg
Zinc, Extractable, SEM	17.3	—	0.16	0.809	mg/Kg	41.4	—	0.33	1.65	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.265	—	0.0024	0.0124	nmol/Kg	0.633	—	0.0050	0.0252	mmol/Kg
Total SEM	0.348	—	—	—	mmol/Kg	0.76	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	0.41	1.62	mg/Kg	0.86	<RDL,JG	0.83	3.3	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	0.013	0.0505	nmol/Kg	0.027	—	0.026	0.10	mmol/Kg
SEM/AVS	*	—	—	—	—	29	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-2: Newaukum Creek Basin Sediment SEM/AVS Calculations

Project: 421240C						421240C				
Locator: FF322						AD322				
Descrip: NEWAUKUM-424TH SE						US NEWAUKUM CR. @				
Sample: L48629-5						L48629-6				
Matrix: SE FRSHWTRSED						SE FRSHWTRSED				
ColDate: 8/10/09 13:00						8/10/09 13:22				
TotalSolid: 59.9						27.5				
DRY Weight Basis						DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.12	<RDL	0.067	0.331	mg/Kg	0.24	<RDL	0.15	0.727	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0011	—	0.00060	0.00294	mmol/Kg	0.0021	—	0.0013	0.00647	mmol/Kg
Copper, Extractable, SEM	4.27	—	0.13	0.663	mg/Kg	12.4	—	0.29	1.46	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0672	—	0.0020	0.0104	mmol/Kg	0.195	—	0.0046	0.0230	mmol/Kg
Lead, Extractable, SEM	3.47	—	0.67	3.31	mg/Kg	9.6	—	1.5	7.27	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0167	—	0.0032	0.0160	mmol/Kg	0.046	—	0.0072	0.0351	mmol/Kg
Nickel, Extractable, SEM	0.985	—	0.17	0.828	mg/Kg	2.45	—	0.36	1.82	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0168	—	0.0029	0.0141	mmol/Kg	0.0417	—	0.0061	0.0310	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.13	0.663	mg/Kg	—	<MDL	0.29	1.46	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0012	0.00615	mmol/Kg	ND	—	0.0027	0.0135	mmol/Kg
Zinc, Extractable, SEM	21	—	0.17	0.828	mg/Kg	48.4	—	0.36	1.82	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.32	—	0.0026	0.0127	mmol/Kg	0.740	—	0.0055	0.0278	mmol/Kg
Total SEM	0.42	—	—	—	mmol/Kg	1.026	—	—	—	mmol/Kg
Sulfide, Acid Volatile	16.6	JG	0.42	1.66	mg/Kg	—	<MDL,JG	0.91	3.64	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.518	—	0.013	0.0518	mmol/Kg	ND	—	0.028	0.114	mmol/Kg
SEM/AVS	0.82	—	—	—	—	*	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-2: Newaukum Creek Basin Sediment SEM/AVS Calculations

Project:	421240C					421240C				
Locator:	AE322					G322				
Descrip:	DS NEWAUKUM CR. @					NEWAUKUM CREEK AT				
Sample:	L48629-7					L48629-8				
Matrix:	SE FRSHWTRSED					SE FRSHWTRSED				
ColDate:	8/10/09 13:55					8/10/09 14:25				
TotalSolid:	64.8					41.1				
	DRY Weight Basis					DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	0.062	0.309	mg/Kg	0.13	<RDL	0.097	0.487	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	0.00055	0.00275	nmol/Kg	0.0012	—	0.00086	0.00433	mmol/Kg
Copper, Extractable, SEM	2.15	—	0.12	0.619	mg/Kg	5.6	—	0.19	0.971	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0338	—	0.0019	0.00974	nmol/Kg	0.088	—	0.0030	0.0153	mmol/Kg
Lead, Extractable, SEM	2.2	<RDL	0.62	3.09	mg/Kg	4.4	<RDL	0.97	4.87	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.011	—	0.0030	0.0149	nmol/Kg	0.021	—	0.0047	0.0235	mmol/Kg
Nickel, Extractable, SEM	0.65	<RDL	0.15	0.773	mg/Kg	1.1	<RDL	0.24	1.21	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.011	—	0.0026	0.0132	nmol/Kg	0.019	—	0.0041	0.0206	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.12	0.619	mg/Kg	—	<MDL	0.97	4.87	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0011	0.00574	nmol/Kg	ND	—	0.0090	0.0451	mmol/Kg
Zinc, Extractable, SEM	17.3	—	0.15	0.773	mg/Kg	29	—	0.24	1.21	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.265	—	0.0023	0.0118	nmol/Kg	0.44	—	0.0037	0.0185	mmol/Kg
Total SEM	0.320	—	—	—	mmol/Kg	0.57	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	0.39	1.54	mg/Kg	—	<MDL,JG	0.61	2.43	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	0.012	0.0480	nmol/Kg	ND	—	0.019	0.0758	mmol/Kg
SEM/AVS	*	—	—	—	—	*	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-2: Newaukum Creek Basin Sediment SEM/AVS Calculations

Project:	421240C					421240C				
Locator:	QQ322					'0322				
Descrip:	SE 416TH -QUARRY					NEWAUKUM CREEK DOW				
Sample:	L48629-9					L48633-6				
Matrix:	SE FRSHWTRSED					SE FRSHWTRSED				
ColDate:	8/10/09 15:15					8/10/09 11:40				
TotalSolid:	20.6					39.9				
	DRY Weight Basis					DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.28	<RDL	0.19	0.971	mg/Kg	0.12	<RDL	0.1	0.499	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0025	—	0.0017	0.00864	mmol/Kg	0.0011	—	0.0009	0.00444	mmol/Kg
Copper, Extractable, SEM	15.8	—	0.39	1.95	mg/Kg	8.82	—	0.2	0.997	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.249	—	0.0061	0.0307	mmol/Kg	0.139	—	0.003	0.0157	mmol/Kg
Lead, Extractable, SEM	6.8	<RDL	1.9	9.71	mg/Kg	3.8	<RDL	1	4.99	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.033	—	0.0092	0.0469	mmol/Kg	0.018	—	0.005	0.0241	mmol/Kg
Nickel, Extractable, SEM	2.87	—	0.49	2.43	mg/Kg	3.16	—	0.25	1.25	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0489	—	0.0083	0.0414	mmol/Kg	0.0538	—	0.0043	0.0213	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.39	1.95	mg/Kg	—	<MDL	0.2	0.997	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0036	0.0181	mmol/Kg	ND	—	0.002	0.00924	mmol/Kg
Zinc, Extractable, SEM	54.4	—	0.49	2.43	mg/Kg	26.6	—	0.25	1.25	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.832	—	0.0075	0.0372	mmol/Kg	0.407	—	0.0038	0.0191	mmol/Kg
Total SEM	1.165	—	—	—	mmol/Kg	0.619	—	—	—	mmol/Kg
Sulfide, Acid Volatile	17.6	JG	1.2	4.85	mg/Kg	—	<MDL,JG	0.63	2.49	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.549	—	0.037	0.151	mmol/Kg	ND	—	0.020	0.0777	mmol/Kg
SEM/AVS	2.12	—	—	—	—	*	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-3: Soos Creek Basin Sediment SEM/AVS Calculations

Project:		421240C-300				421240C-300				
Locator:		A320				'0320				
Descrip:		BIG SOOS CREEK//US				BIG SOOS CREEK//FO				
Sample:		L51247-7				L51298-1				
Matrix:		SE FRSHWTRSED				SE FRSHWTRSED				
ColDate:		7/26/10 10:35				7/26/10 10:20				
TotalSolid:		76.6				64.9				
		DRY Weight Basis				DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	0.051	0.257	mg/Kg	—	<MDL	0.06	0.304	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	0.0005	0.0023	mmol/Kg	ND	—	0.0005	0.00270	mmol/Kg
Copper, Extractable, SEM	1.92	—	0.1	0.514	mg/Kg	3.62	—	0.12	0.607	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0302	—	0.002	0.00809	mmol/Kg	0.0570	—	0.0019	0.00955	mmol/Kg
Lead, Extractable, SEM	1.3	<RDL	0.51	2.57	mg/Kg	2.5	<RDL	0.6	3.04	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0063	—	0.0025	0.0124	mmol/Kg	0.012	—	0.003	0.0147	mmol/Kg
Nickel, Extractable, SEM	1.27	—	0.13	0.644	mg/Kg	2.77	—	0.15	0.758	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0216	—	0.0022	0.0110	mmol/Kg	0.0472	—	0.0026	0.0129	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.1	0.514	mg/Kg	—	<MDL	0.12	0.607	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0009	0.00476	mmol/Kg	ND	—	0.0011	0.00563	mmol/Kg
Zinc, Extractable, SEM	4.77	—	0.13	0.644	mg/Kg	9.2	—	0.15	0.758	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.0730	—	0.0020	0.00985	mmol/Kg	0.14	—	0.0023	0.0116	mmol/Kg
Total SEM	0.13	—	—	—	mmol/Kg	0.26	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	0.33	1.29	mg/Kg	—	<MDL,JG	0.39	1.52	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	0.010	0.0402	mmol/Kg	ND	—	0.012	0.0474	mmol/Kg
SEM/AVS	*	—	—	—	—	*	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-3: Soos Creek Basin Sediment SEM/AVS Calculations

Project: 421240C-300 Locator: AA320 Descrip: BIG SOOS CREEK, DO Sample: L51298-2 Matrix: SE FRSHWTRSED ColDate: 7/26/10 11:15 TotalSolid: 76.4 DRY Weight Basis		421240C-300 GG320 BIG SOOS CREEK DOW L51298-3 SE FRSHWTRSED 7/26/10 11:45 37.1 DRY Weight Basis								
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	0.052	0.26	mg/Kg	0.2	<RDL	0.11	0.526	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	0.00046	0.0023	mmol/Kg	0.002	—	0.0010	0.00468	mmol/Kg
Copper, Extractable, SEM	2.6	—	0.1	0.521	mg/Kg	5.63	—	0.21	1.05	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.041	—	0.002	0.00820	mmol/Kg	0.0886	—	0.0033	0.0165	mmol/Kg
Lead, Extractable, SEM	1.7	<RDL	0.52	2.6	mg/Kg	11.1	—	1.1	5.26	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0082	—	0.0025	0.013	mmol/Kg	0.0536	—	0.0053	0.0254	mmol/Kg
Nickel, Extractable, SEM	4.25	—	0.13	0.652	mg/Kg	2.27	—	0.26	1.32	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0724	—	0.0022	0.0111	mmol/Kg	0.0387	—	0.0044	0.0225	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.1	0.521	mg/Kg	0.24	<RDL	0.21	1.05	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0009	0.00483	mmol/Kg	0.0022	—	0.0019	0.00973	mmol/Kg
Zinc, Extractable, SEM	7.34	—	0.13	0.652	mg/Kg	36.4	—	0.26	1.32	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.112	—	0.0020	0.0100	mmol/Kg	0.557	—	0.0040	0.0202	mmol/Kg
Total SEM	0.234	—	—	—	mmol/Kg	0.744	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	0.33	1.3	mg/Kg	—	<MDL,JG	0.65	2.63	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	0.010	0.041	mmol/Kg	ND	—	0.020	0.0820	mmol/Kg
SEM/AVS	*	—	—	—	—	*	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-3: Soos Creek Basin Sediment SEM/AVS Calculations

Project: 421240C-300 Locator: Q320 Descrip: BIG SOOS CR. AT SE Sample: L51298-4 Matrix: SE FRSHWTRSED ColDate: 7/26/10 12:05 TotalSolid: 8.87 DRY Weight Basis		421240C-300 HH320 BIG SOOS CREEK AT L51298-5 SE FRSHWTRSED 7/26/10 12:35 36.1 DRY Weight Basis								
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.69	<RDL	0.44	2.21	mg/Kg	0.15	<RDL	0.11	0.529	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0061	—	0.0039	0.0197	mmol/Kg	0.0013	—	0.0010	0.00471	mmol/Kg
Copper, Extractable, SEM	16.3	—	0.88	4.41	mg/Kg	5.48	—	0.21	1.06	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.256	—	0.014	0.0694	mmol/Kg	0.0862	—	0.0033	0.0167	mmol/Kg
Lead, Extractable, SEM	35.5	—	4.4	22.1	mg/Kg	9.47	—	1.1	5.29	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.171	—	0.021	0.107	mmol/Kg	0.0457	—	0.0053	0.0255	mmol/Kg
Nickel, Extractable, SEM	6.81	—	1.1	5.51	mg/Kg	2.07	—	0.26	1.32	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.116	—	0.019	0.0939	mmol/Kg	0.0353	—	0.0044	0.0225	mmol/Kg
Silver, Extractable, SEM	0.91	<RDL	0.88	4.41	mg/Kg	—	<MDL	0.21	1.06	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	0.0084	—	0.0082	0.0409	mmol/Kg	ND	—	0.0019	0.00983	mmol/Kg
Zinc, Extractable, SEM	121	—	1.1	5.51	mg/Kg	40.2	—	0.26	1.32	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	1.85	—	0.017	0.0843	mmol/Kg	0.615	—	0.0040	0.0202	mmol/Kg
Total SEM	2.42	—	—	—	mmol/Kg	0.783	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	2.8	11	mg/Kg	5.96	JG	0.66	2.64	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	0.087	0.34	mmol/Kg	0.186	—	0.021	0.0823	mmol/Kg
SEM/AVS	*	—	—	—	—	4.21	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-3: Soos Creek Basin Sediment SEM/AVS Calculations

Project: 421240C-300 Locator: P320 Descrip: BIG SOOS 256TH Sample: L51298-6 Matrix: SE FRSHWTRSED ColDate: 7/26/10 13:00 TotalSolid: 64.9 DRY Weight Basis		421240C-300 II320 BIG SOOS CREEK AT L51298-7 SE FRSHWTRSED 7/26/10 13:20 33.4 DRY Weight Basis									
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units	
Cadmium, Extractable, SEM	0.088	<RDL	0.059	0.293	mg/Kg	0.13	<RDL	0.12	0.59	mg/Kg	
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol	
Cadmium, Extractable, SEM	0.00078	—	0.00052	0.00261	mmol/Kg	0.0012	—	0.0011	0.0052	mmol/Kg	
Copper, Extractable, SEM	2.43	—	0.12	0.587	mg/Kg	11	—	0.24	1.18	mg/Kg	
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol	
Copper, Extractable, SEM	0.0382	—	0.0019	0.00924	mmol/Kg	0.17	—	0.0038	0.0186	mmol/Kg	
Lead, Extractable, SEM	3.88	—	0.59	2.93	mg/Kg	13.7	—	1.2	5.9	mg/Kg	
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol	
Lead, Extractable, SEM	0.0187	—	0.0028	0.0141	mmol/Kg	0.0661	—	0.0058	0.028	mmol/Kg	
Nickel, Extractable, SEM	1.13	—	0.15	0.733	mg/Kg	6.71	—	0.29	1.47	mg/Kg	
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol	
Nickel, Extractable, SEM	0.0193	—	0.0026	0.0125	mmol/Kg	0.114	—	0.0049	0.0250	mmol/Kg	
Silver, Extractable, SEM	—	<MDL	0.12	0.587	mg/Kg	—	<MDL	0.24	1.18	mg/Kg	
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol	
Silver, Extractable, SEM	ND	—	0.0011	0.00544	mmol/Kg	ND	—	0.0022	0.0109	mmol/Kg	
Zinc, Extractable, SEM	13.8	—	0.15	0.733	mg/Kg	26	—	0.29	1.47	mg/Kg	
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol	
Zinc, Extractable, SEM	0.211	—	0.0023	0.0112	mmol/Kg	0.40	—	0.0044	0.0225	mmol/Kg	
Total SEM	0.288	—	—	—	mmol/Kg	0.75	—	—	—	mmol/Kg	
Sulfide, Acid Volatile	32.8	JG	1.8	7.33	mg/Kg	—	<MDL,JG	0.75	2.95	mg/Kg	
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol	
Sulfide, Acid Volatile	1.02	—	0.056	0.229	mmol/Kg	ND	—	0.023	0.0920	mmol/Kg	
SEM/AVS	0.282	—	—	—	—	*	—	—	—	—	

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-3: Soos Creek Basin Sediment SEM/AVS Calculations

Project: 421240C-300 Locator: RR320 Descrip: BIG SOOS CREEK NEA Sample: L51298-8 Matrix: SE FRSHWTRSED ColDate: 7/26/10 13:50 TotalSolid: 52.8 DRY Weight Basis		421240C-300 SS320 BIG SOOS CREEK-GAR L51298-9 SE FRSHWTRSED 7/26/10 14:15 70.8 DRY Weight Basis									
Parameters	Value	Lab Qual	MDL	RDL	Units	Value	Lab Qual	MDL	RDL	Units	
Cadmium, Extractable, SEM	0.087	<RDL	0.074	0.373	mg/Kg	—	<MDL	0.054	0.268	mg/Kg	
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol	112.41	—	—	—	mg/mmol	
Cadmium, Extractable, SEM	0.00077	—	0.00066	0.00332	mmol/Kg	0	—	0.00048	0.00238	mmol/Kg	
Copper, Extractable, SEM	7.22	—	0.15	0.744	mg/Kg	0.905	—	0.11	0.537	mg/Kg	
Copper, Molecular Weight	63.55	—	—	—	mg/mmol	63.55	—	—	—	mg/mmol	
Copper, Extractable, SEM	0.114	—	0.0024	0.0117	mmol/Kg	0.0142	—	0.0017	0.00845	mmol/Kg	
Lead, Extractable, SEM	19.3	—	0.74	3.73	mg/Kg	3.88	—	0.54	2.68	mg/Kg	
Lead, Molecular Weight	207.2	—	—	—	mg/mmol	207.2	—	—	—	mg/mmol	
Lead, Extractable, SEM	0.0931	—	0.0036	0.0180	mmol/Kg	0.0187	—	0.0026	0.0129	mmol/Kg	
Nickel, Extractable, SEM	1.91	—	0.19	0.93	mg/Kg	0.38	<RDL	0.13	0.671	mg/Kg	
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol	58.69	—	—	—	mg/mmol	
Nickel, Extractable, SEM	0.0325	—	0.0032	0.016	mmol/Kg	0.0065	—	0.0022	0.0114	mmol/Kg	
Silver, Extractable, SEM	—	<MDL	0.15	0.744	mg/Kg	—	<MDL	0.11	0.537	mg/Kg	
Silver, Molecular Weight	107.87	—	—	—	mg/mmol	107.87	—	—	—	mg/mmol	
Silver, Extractable, SEM	ND	—	0.0014	0.00690	mmol/Kg	ND	—	0.0010	0.00498	mmol/Kg	
Zinc, Extractable, SEM	14.9	—	0.19	0.93	mg/Kg	12.1	—	0.13	0.671	mg/Kg	
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol	65.38	—	—	—	mg/mmol	
Zinc, Extractable, SEM	0.228	—	0.0029	0.014	mmol/Kg	0.185	—	0.0020	0.0103	mmol/Kg	
Total SEM	0.468	—	—	—	mmol/Kg	0.225	—	—	—	mmol/Kg	
Sulfide, Acid Volatile	4.15	JG	0.47	1.86	mg/Kg	0.45	<RDL,JG	0.34	1.34	mg/Kg	
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol	32.06	—	—	—	mg/mmol	
Sulfide, Acid Volatile	0.129	—	0.015	0.0580	mmol/Kg	0.014	—	0.011	0.0418	mmol/Kg	
SEM/AVS	3.62	—	—	—	—	16	—	—	—	—	

ND - Nondetect

Table B-3: Soos Creek Basin Sediment SEM/AVS Calculations

Project:	421240C-300				
Locator:	L320				
Descrip:	BIG SOOS AT GRANT				
Sample:	L51298-10				
Matrix:	SE FRSHWTRSED				
ColDate:	7/26/10 14:45				
TotalSolid:	76.5				
	DRY Weight Basis				
Parameters	Value	Lab Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	0.051	0.256	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0	—	0.000454	0.00228	mmol/Kg
Copper, Extractable, SEM	1.52	—	0.1	0.512	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0239	—	0.002	0.00806	mmol/Kg
Lead, Extractable, SEM	5.67	—	0.51	2.56	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0274	—	0.0025	0.0124	mmol/Kg
Nickel, Extractable, SEM	0.647	—	0.13	0.641	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0110	—	0.0022	0.0109	mmol/Kg
Silver, Extractable, SEM	—	<MDL	0.1	0.512	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	0.0009	0.00475	mmol/Kg
Zinc, Extractable, SEM	9.74	—	0.13	0.641	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.149	—	0.0020	0.0098	mmol/Kg
Total SEM	0.211	—	—	—	mmol/Kg
Sulfide, Acid Volatile	9.48	JG	0.33	1.28	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.296	—	0.010	0.0399	mmol/Kg
SEM/AVS	0.715	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: A315 Descrip: HILL CREEK (MILL)/ Sample: L56024-1 Matrix: SE FRSHWTRSED ColDate: 8/13/12 11:35 TotalSolid: 49.7 DRY Weight Basis							SD315 MILL CRK AT W.VALL L56024-2 SE FRSHWTRSED 8/13/12 12:20 47.5 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.11	<RDL	J	0.078	0.388	mg/Kg	0.594	—	—	0.082	0.408	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0010	—	—	0.00069	0.00345	mmol/Kg	0.00528	—	—	0.00073	0.00363	mmol/Kg
Copper, Extractable, SEM	9.72	—	—	0.15	0.777	mg/Kg	17.8	—	—	0.16	0.819	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.153	—	—	0.0024	0.0122	mmol/Kg	0.280	—	—	0.0025	0.0129	mmol/Kg
Lead, Extractable, SEM	6.18	—	—	0.78	3.88	mg/Kg	37.1	—	—	0.82	4.08	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0298	—	—	0.0038	0.0187	mmol/Kg	0.179	—	—	0.0040	0.0197	mmol/Kg
Nickel, Extractable, SEM	1.87	—	—	0.19	0.97	mg/Kg	5.52	—	—	0.2	1.02	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0319	—	—	0.0032	0.017	mmol/Kg	0.0941	—	—	0.003	0.0174	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.15	0.777	mg/Kg	—	<MDL	U	0.16	0.819	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0014	0.00720	mmol/Kg	ND	—	—	0.0015	0.00759	mmol/Kg
Zinc, Extractable, SEM	21.7	—	—	0.19	0.97	mg/Kg	134	—	—	0.2	1.02	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.332	—	—	0.0029	0.015	mmol/Kg	2.05	—	—	0.003	0.0156	mmol/Kg
Total SEM	0.55	—	—	—	—	mmol/Kg	2.61	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	10.2	JG	—	0.48	1.94	mg/Kg	84.4	JG	—	2.5	10.2	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.318	—	—	0.015	0.0605	mmol/Kg	2.63	—	—	0.078	0.318	mmol/Kg
SEM/AVS	1.7	—	—	—	—	—	0.99	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: FR315 Descrip: MILL CRK ON FRONTA Sample: L56024-3 Matrix: SE FRSHWTRSED ColDate: 8/29/12 11:30 TotalSolid: 21.9 DRY Weight Basis		TS315 MILL CRK NEAR 1ST L56024-4 SE FRSHWTRSED 8/13/12 13:25 20.4 DRY Weight Basis										
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.45	<RDL	J	0.18	0.904	mg/Kg	0.45	<RDL	J	0.19	0.951	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0040	—	—	0.0016	0.00804	mmol/Kg	0.0040	—	—	0.0017	0.00846	mmol/Kg
Copper, Extractable, SEM	16.4	—	—	0.36	1.81	mg/Kg	17.2	—	—	0.38	1.91	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.258	—	—	0.0057	0.0285	mmol/Kg	0.271	—	—	0.0060	0.0301	mmol/Kg
Lead, Extractable, SEM	21.0	—	—	1.8	9.04	mg/Kg	15.5	—	—	1.9	9.51	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.101	—	—	0.0087	0.0436	mmol/Kg	0.0748	—	—	0.0092	0.0459	mmol/Kg
Nickel, Extractable, SEM	4.12	—	—	0.45	2.26	mg/Kg	7.06	—	—	0.48	2.38	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0702	—	—	0.0077	0.0385	mmol/Kg	0.120	—	—	0.0082	0.0406	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.36	1.81	mg/Kg	—	<MDL	U	0.38	1.91	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0033	0.0168	mmol/Kg	ND	—	—	0.0035	0.0177	mmol/Kg
Zinc, Extractable, SEM	148	—	—	0.45	2.26	mg/Kg	124	—	—	0.48	2.38	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	2.26	—	—	0.0069	0.0346	mmol/Kg	1.90	—	—	0.0073	0.0364	mmol/Kg
Total SEM	2.70	—	—	—	—	mmol/Kg	2.37	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	77.6	JG	—	5.5	22.6	mg/Kg	120	JG	J	5.9	23.8	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	2.42	—	—	0.17	0.705	mmol/Kg	3.74	—	—	0.18	0.742	mmol/Kg
SEM/AVS	1.1	—	—	—	—	—	0.63	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: ED315 Descrip: MILL CRK ON M ST N Sample: L56024-5 Matrix: SE FRSHWTRSED ColDate: 8/13/12 14:20 TotalSolid: 35.4 DRY Weight Basis							PR315 MILL CRK AT PEASLE L56024-7 SE FRSHWTRSED 8/14/12 10:50 67.8 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.23	<RDL	J	0.1	0.528	mg/Kg	0.16	<RDL	J	0.059	0.292	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0020	—	—	0.0009	0.00470	mmol/Kg	0.0014	—	—	0.00052	0.00260	mmol/Kg
Copper, Extractable, SEM	6.64	—	—	0.21	1.06	mg/Kg	12.3	—	—	0.12	0.583	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.104	—	—	0.0033	0.0167	mmol/Kg	0.194	—	—	0.0019	0.00917	mmol/Kg
Lead, Extractable, SEM	7.82	—	—	1	5.28	mg/Kg	8.81	—	—	0.59	2.92	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0377	—	—	0.005	0.0255	mmol/Kg	0.0425	—	—	0.0028	0.0141	mmol/Kg
Nickel, Extractable, SEM	2.17	—	—	0.27	1.32	mg/Kg	2.48	—	—	0.15	0.729	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0370	—	—	0.0046	0.0225	mmol/Kg	0.0423	—	—	0.0026	0.0124	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.21	1.06	mg/Kg	—	<MDL	U	0.12	0.583	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0019	0.00983	mmol/Kg	ND	—	—	0.0011	0.00540	mmol/Kg
Zinc, Extractable, SEM	62.7	—	—	0.27	1.32	mg/Kg	71.5	—	—	0.15	0.729	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.959	—	—	0.0041	0.0202	mmol/Kg	1.09	—	—	0.0023	0.0112	mmol/Kg
Total SEM	1.14	—	—	—	—	mmol/Kg	1.37	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	112	JG	—	3.4	13.2	mg/Kg	2.96	JG	—	0.37	1.46	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	3.49	—	—	0.11	0.412	mmol/Kg	0.0923	—	—	0.012	0.0455	mmol/Kg
SEM/AVS	0.33	—	—	—	—	—	15	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: PC315 Descrip: MILL CRK ON PEASLE Sample: L56024-8 Matrix: SE FRSHWTRSED ColDate: 8/14/12 11:40 TotalSolid: 75.1 DRY Weight Basis							UH315 MILL CRK AT 321ST L56024-9 SE FRSHWTRSED 8/14/12 12:25 15.2 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.088	<RDL	J	0.052	0.257	mg/Kg	0.79	<RDL	J	0.26	1.27	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.00078	—	—	0.00046	0.00229	mmol/Kg	0.0070	—	—	0.0023	0.0113	mmol/Kg
Copper, Extractable, SEM	1.13	—	—	0.1	0.514	mg/Kg	16.8	—	—	0.51	2.54	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0178	—	—	0.002	0.00809	mmol/Kg	0.264	—	—	0.0080	0.0400	mmol/Kg
Lead, Extractable, SEM	5.17	—	—	0.52	2.57	mg/Kg	45.9	—	—	2.6	12.7	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0250	—	—	0.0025	0.0124	mmol/Kg	0.222	—	—	0.013	0.0613	mmol/Kg
Nickel, Extractable, SEM	1.24	—	—	0.13	0.642	mg/Kg	6.16	—	—	0.64	3.18	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0211	—	—	0.0022	0.0109	mmol/Kg	0.105	—	—	0.011	0.0542	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.1	0.514	mg/Kg	—	<MDL	U	0.51	2.54	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0009	0.00476	mmol/Kg	ND	—	—	0.0047	0.0235	mmol/Kg
Zinc, Extractable, SEM	28.2	—	—	0.13	0.642	mg/Kg	130	—	—	0.64	3.18	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.431	—	—	0.0020	0.00982	mmol/Kg	1.99	—	—	0.0098	0.0486	mmol/Kg
Total SEM	0.50	—	—	—	—	mmol/Kg	2.59	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	U	0.32	1.28	mg/Kg	200	JG	—	7.9	31.8	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	—	0.010	0.0399	mmol/Kg	6.24	—	—	0.25	0.992	mmol/Kg
SEM/AVS	*	—	—	—	—	—	0.41	—	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: IT318 Descrip: EMILL CRK NEAR 723 Sample: L56024-11 Matrix: SE FRSHWTRSED ColDate: 8/30/12 12:15 TotalSolid: 34 DRY Weight Basis							DT318 EMILL CRK 196TH AN L56024-12 SE FRSHWTRSED 8/27/12 14:20 35.6 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	3.41	—	—	0.11	0.562	mg/Kg	1.47	—	—	0.1	0.522	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0303	—	—	0.00098	0.00500	mmol/Kg	0.0131	—	—	0.0009	0.00464	mmol/Kg
Copper, Extractable, SEM	31.8	—	—	0.22	1.12	mg/Kg	31.2	—	—	0.21	1.04	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.500	—	—	0.0035	0.0176	mmol/Kg	0.491	—	—	0.0033	0.0164	mmol/Kg
Lead, Extractable, SEM	35.9	—	—	1.1	5.62	mg/Kg	29.5	—	—	1	5.22	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.173	—	—	0.0053	0.0271	mmol/Kg	0.142	—	—	0.005	0.0252	mmol/Kg
Nickel, Extractable, SEM	6.24	—	—	0.28	1.4	mg/Kg	4.63	—	—	0.26	1.3	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.106	—	—	0.0048	0.024	mmol/Kg	0.0789	—	—	0.0044	0.022	mmol/Kg
Silver, Extractable, SEM	0.25	<RDL	J	0.22	1.12	mg/Kg	—	<MDL	U	0.21	1.04	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	0.0023	—	—	0.0020	0.0104	mmol/Kg	ND	—	—	0.0019	0.00964	mmol/Kg
Zinc, Extractable, SEM	368	—	—	0.28	1.4	mg/Kg	284	—	—	0.26	1.3	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	5.63	—	—	0.0043	0.021	mmol/Kg	4.34	—	—	0.0040	0.020	mmol/Kg
Total SEM	6.44	—	—	—	—	mmol/Kg	5.07	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	84.4	JG	—	7.1	28	mg/Kg	90.4	JG	—	3.4	13	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	2.63	—	—	0.22	0.87	mmol/Kg	2.82	—	—	0.11	0.41	mmol/Kg
SEM/AVS	2.4	—	—	—	—	—	1.8	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: FS318							CS318					
Descrip: EMILL CRK NEAR 72N							EMILL CRK NEAR 222					
Sample: L56024-13							L56024-14					
Matrix: SE FRSHWTRSED							SE FRSHWTRSED					
ColDate: 8/28/12 15:00							8/28/12 14:40					
TotalSolid: 49.5							32.7					
DRY Weight Basis							DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.705	—	—	0.081	0.4	mg/Kg	1.65	—	—	0.12	0.599	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.00627	—	—	0.00072	0.004	mmol/Kg	0.0147	—	—	0.0011	0.00533	mmol/Kg
Copper, Extractable, SEM	9.43	—	—	0.16	0.798	mg/Kg	43.1	—	—	0.24	1.2	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.148	—	—	0.0025	0.0126	mmol/Kg	0.678	—	—	0.0038	0.019	mmol/Kg
Lead, Extractable, SEM	13.2	—	—	0.81	4	mg/Kg	57.8	—	—	1.2	5.99	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0637	—	—	0.0039	0.02	mmol/Kg	0.279	—	—	0.0058	0.0289	mmol/Kg
Nickel, Extractable, SEM	2.28	—	—	0.2	0.998	mg/Kg	6.15	—	—	0.3	1.5	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0388	—	—	0.003	0.0170	mmol/Kg	0.105	—	—	0.005	0.026	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.16	0.798	mg/Kg	—	<MDL	U	0.24	1.2	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0015	0.00740	mmol/Kg	ND	—	—	0.0022	0.011	mmol/Kg
Zinc, Extractable, SEM	105	—	—	0.2	0.998	mg/Kg	413	—	—	0.3	1.5	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	1.61	—	—	0.003	0.0153	mmol/Kg	6.32	—	—	0.005	0.023	mmol/Kg
Total SEM	1.86	—	—	—	—	mmol/Kg	7.39	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	151	JG	—	5.1	20	mg/Kg	225	JG	—	7.3	29.9	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	4.71	—	—	0.16	0.62	mmol/Kg	7.018	—	—	0.23	0.933	mmol/Kg
SEM/AVS	0.40	—	—	—	—	—	1.1	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: AA318 Descrip: EMILL CRK NOVAK LN Sample: L56024-15 Matrix: SE FRSHWTRSED ColDate: 8/28/12 12:00 TotalSolid: 36.7 DRY Weight Basis							EP318 EMILL CRK AT EARTH L56024-16 SE FRSHWTRSED 8/28/12 10:00 31.6 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.616	—	—	0.1	0.507	mg/Kg	0.28	<RDL	J	0.12	0.592	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0055	—	—	0.0009	0.00451	mmol/Kg	0.0025	—	—	0.0011	0.00527	mmol/Kg
Copper, Extractable, SEM	38.1	—	—	0.2	1.01	mg/Kg	19.6	—	—	0.24	1.18	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.600	—	—	0.003	0.0159	mmol/Kg	0.308	—	—	0.0038	0.0186	mmol/Kg
Lead, Extractable, SEM	54.0	—	—	1	5.07	mg/Kg	32.3	—	—	1.2	5.92	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.261	—	—	0.005	0.0245	mmol/Kg	0.156	—	—	0.0058	0.0286	mmol/Kg
Nickel, Extractable, SEM	4.85	—	—	0.25	1.27	mg/Kg	4.46	—	—	0.3	1.48	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0826	—	—	0.0043	0.0216	mmol/Kg	0.0760	—	—	0.005	0.0252	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.2	1.01	mg/Kg	—	<MDL	U	0.24	1.18	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.002	0.00936	mmol/Kg	ND	—	—	0.0022	0.0109	mmol/Kg
Zinc, Extractable, SEM	275	—	—	0.25	1.27	mg/Kg	162	—	—	0.3	1.48	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	4.21	—	—	0.0038	0.0194	mmol/Kg	2.48	—	—	0.005	0.0226	mmol/Kg
Total SEM	5.15	—	—	—	—	mmol/Kg	3.02	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	27.2	JG	—	3.3	12.7	mg/Kg	1.1	<RDL,JG	J	0.73	2.96	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.848	—	—	0.10	0.396	mmol/Kg	0.034	—	—	0.023	0.0923	mmol/Kg
SEM/AVS	6.1	—	—	—	—	—	88	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: EG318 Descrip: EMILL CRK AT 104TH Sample: L56024-17 Matrix: SE FRSHWTRSED ColDate: 8/28/12 11:00 TotalSolid: 31.4 DRY Weight Basis		SH318 EMILL CRK NEAR SCE L56024-19 SE FRSHWTRSED 8/28/12 13:20 35 DRY Weight Basis										
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.31	<RDL	J	0.12	0.605	mg/Kg	0.19	<RDL	J	0.11	0.523	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0028	—	—	0.0011	0.00538	mmol/Kg	0.0017	—	—	0.00098	0.00465	mmol/Kg
Copper, Extractable, SEM	13.2	—	—	0.24	1.21	mg/Kg	8.63	—	—	0.21	1.04	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.208	—	—	0.0038	0.0190	mmol/Kg	0.136	—	—	0.0033	0.0164	mmol/Kg
Lead, Extractable, SEM	28.2	—	—	1.2	6.05	mg/Kg	18.9	—	—	1.1	5.23	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.136	—	—	0.0058	0.0292	mmol/Kg	0.0912	—	—	0.0053	0.0252	mmol/Kg
Nickel, Extractable, SEM	1.74	—	—	0.3	1.51	mg/Kg	2.27	—	—	0.26	1.31	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0296	—	—	0.005	0.0257	mmol/Kg	0.0387	—	—	0.0044	0.0223	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.24	1.21	mg/Kg	—	<MDL	U	0.21	1.04	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0022	0.0112	mmol/Kg	ND	—	—	0.0019	0.00964	mmol/Kg
Zinc, Extractable, SEM	132	—	—	0.3	1.51	mg/Kg	136	—	—	0.26	1.31	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	2.02	—	—	0.005	0.0231	mmol/Kg	2.08	—	—	0.0040	0.0200	mmol/Kg
Total SEM	2.40	—	—	—	—	mmol/Kg	2.35	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	7.74	JG	—	0.76	3.02	mg/Kg	3.54	JG	J	0.66	2.61	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.241	—	—	0.024	0.0942	mmol/Kg	0.110	—	—	0.021	0.0814	mmol/Kg
SEM/AVS	9.9	—	—	—	—	—	21	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: AB320 Descrip: COVINGTON CRK AT 1 Sample: L56024-20 Matrix: SE FRSHWTRSED ColDate: 8/14/12 14:15 TotalSolid: 59.9 DRY Weight Basis							CC320 COVINGTON CREEK AT L56024-21 SE FRSHWTRSED 8/14/12 14:50 76.6 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	U	0.063	0.321	mg/Kg	—	<MDL	U	0.048	0.242	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	—	0.00056	0.00286	mmol/Kg	ND	—	—	0.00043	0.00215	mmol/Kg
Copper, Extractable, SEM	2.25	—	—	0.13	0.639	mg/Kg	1.20	—	—	0.097	0.483	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0354	—	—	0.0020	0.0101	mmol/Kg	0.0189	—	—	0.0015	0.00760	mmol/Kg
Lead, Extractable, SEM	1.7	<RDL	J	0.63	3.21	mg/Kg	1.8	<RDL	J	0.48	2.42	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0082	—	—	0.0030	0.0155	mmol/Kg	0.0087	—	—	0.0023	0.0117	mmol/Kg
Nickel, Extractable, SEM	0.856	—	—	0.16	0.8	mg/Kg	0.37	<RDL	J	0.12	0.604	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0146	—	—	0.0027	0.01	mmol/Kg	0.0063	—	—	0.0020	0.0103	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.13	0.639	mg/Kg	—	<MDL	U	0.097	0.483	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0012	0.00592	mmol/Kg	ND	—	—	0.00090	0.00448	mmol/Kg
Zinc, Extractable, SEM	6.54	—	—	0.16	0.8	mg/Kg	3.84	—	—	0.12	0.604	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.100	—	—	0.0024	0.01	mmol/Kg	0.0587	—	—	0.0018	0.00924	mmol/Kg
Total SEM	0.16	—	—	—	—	mmol/Kg	0.09	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	3.71	JG	—	0.4	1.6	mg/Kg	—	<MDL,JG	U	0.3	1.21	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.116	—	—	0.01	0.050	mmol/Kg	ND	—	—	0.009	0.0377	mmol/Kg
SEM/AVS	1.4	—	—	—	—	—	*	—	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: C320 Descrip: COVINGTON CREEK//B Sample: L56024-22 Matrix: SE FRSHWTRSED ColDate: 8/14/12 15:25 TotalSolid: 42.9 DRY Weight Basis							CD320 COVINGTON CRK AT 1 L56024-23 SE FRSHWTRSED 8/15/12 11:45 48 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	U	0.089	0.448	mg/Kg	—	<MDL	U	0.079	0.398	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	—	0.00079	0.00399	mmol/Kg	ND	—	—	0.00070	0.00354	mmol/Kg
Copper, Extractable, SEM	4.57	—	—	0.18	0.895	mg/Kg	2.71	—	—	0.16	0.794	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0719	—	—	0.0028	0.0141	mmol/Kg	0.0426	—	—	0.0025	0.0125	mmol/Kg
Lead, Extractable, SEM	5.36	—	—	0.89	4.48	mg/Kg	3.3	<RDL	J	0.79	3.98	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0259	—	—	0.0043	0.0216	mmol/Kg	0.016	—	—	0.0038	0.0192	mmol/Kg
Nickel, Extractable, SEM	0.65	<RDL	J	0.22	1.12	mg/Kg	0.65	<RDL	J	0.2	0.992	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.011	—	—	0.0037	0.0191	mmol/Kg	0.011	—	—	0.003	0.0169	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.18	0.895	mg/Kg	—	<MDL	U	0.16	0.794	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0017	0.00830	mmol/Kg	ND	—	—	0.0015	0.00736	mmol/Kg
Zinc, Extractable, SEM	11.7	—	—	0.22	1.12	mg/Kg	9.33	—	—	0.2	0.992	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.179	—	—	0.0034	0.0171	mmol/Kg	0.143	—	—	0.003	0.015	mmol/Kg
Total SEM	0.29	—	—	—	—	mmol/Kg	0.21	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	39.4	JG	—	2.8	11.2	mg/Kg	38.8	JG	—	2.5	9.92	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	1.23	—	—	0.087	0.349	mmol/Kg	1.21	—	—	0.078	0.309	mmol/Kg
SEM/AVS	0.23	—	—	—	—	—	0.18	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: PT320 Descrip: COVINGTON CRK NEAR Sample: L56024-24 Matrix: SE FRSHWTRSED ColDate: 8/15/12 12:15 TotalSolid: 44.2 DRY Weight Basis		Z320 COVINGTON CREEK BE L56024-25 SE FRSHWTRSED 8/15/12 12:45 43.1 DRY Weight Basis										
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	U	0.088	0.437	mg/Kg	—	<MDL	U	0.088	0.443	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	—	0.00078	0.00389	mmol/Kg	ND	—	—	0.00078	0.00394	mmol/Kg
Copper, Extractable, SEM	3.05	—	—	0.17	0.876	mg/Kg	2.15	—	—	0.18	0.884	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0480	—	—	0.0027	0.0138	mmol/Kg	0.0338	—	—	0.0028	0.0139	mmol/Kg
Lead, Extractable, SEM	6.45	—	—	0.88	4.37	mg/Kg	3.9	<RDL	J	0.88	4.43	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0311	—	—	0.0042	0.0211	mmol/Kg	0.019	—	—	0.0042	0.0214	mmol/Kg
Nickel, Extractable, SEM	0.75	<RDL	J	0.22	1.1	mg/Kg	0.30	<RDL	J	0.22	1.11	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.013	—	—	0.0037	0.019	mmol/Kg	0.0051	—	—	0.0037	0.0189	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.17	0.876	mg/Kg	—	<MDL	U	0.18	0.884	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0016	0.00812	mmol/Kg	ND	—	—	0.0017	0.00820	mmol/Kg
Zinc, Extractable, SEM	18.8	—	—	0.22	1.1	mg/Kg	18.8	—	—	0.22	1.11	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.288	—	—	0.0034	0.017	mmol/Kg	0.288	—	—	0.0034	0.0170	mmol/Kg
Total SEM	0.38	—	—	—	—	mmol/Kg	0.35	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	24.9	JG	—	2.7	11	mg/Kg	271	JG	—	14	55.2	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.777	—	—	0.084	0.34	mmol/Kg	8.45	—	—	0.44	1.72	mmol/Kg
SEM/AVS	0.49	—	—	—	—	—	0.04	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: S320 Descrip: COVINGTON CR. ON H Sample: L56024-26 Matrix: SE FRSHWTRSED ColDate: 8/15/12 14:00 TotalSolid: 30.5 DRY Weight Basis							D320 JENKINS CREEK//BRI L56024-27 SE FRSHWTRSED 8/15/12 14:50 30.4 DRY Weight Basis						
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units	
Cadmium, Extractable, SEM	0.18	<RDL	J	0.12	0.607	mg/Kg	0.17	<RDL	J	0.13	0.622	mg/Kg	
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol	
Cadmium, Extractable, SEM	0.0016	—	—	0.0011	0.00540	mmol/Kg	0.0015	—	—	0.0012	0.00553	mmol/Kg	
Copper, Extractable, SEM	4.92	—	—	0.24	1.21	mg/Kg	4.61	—	—	0.25	1.25	mg/Kg	
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol	
Copper, Extractable, SEM	0.0774	—	—	0.0038	0.0190	mmol/Kg	0.0725	—	—	0.0039	0.0197	mmol/Kg	
Lead, Extractable, SEM	10.4	—	—	1.2	6.07	mg/Kg	9.61	—	—	1.3	6.22	mg/Kg	
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol	
Lead, Extractable, SEM	0.0502	—	—	0.0058	0.0293	mmol/Kg	0.0464	—	—	0.0063	0.0300	mmol/Kg	
Nickel, Extractable, SEM	0.66	<RDL	J	0.3	1.51	mg/Kg	1.1	<RDL	J	0.31	1.56	mg/Kg	
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol	
Nickel, Extractable, SEM	0.011	—	—	0.005	0.0257	mmol/Kg	0.019	—	—	0.0053	0.0266	mmol/Kg	
Silver, Extractable, SEM	—	<MDL	U	0.24	1.21	mg/Kg	—	<MDL	U	0.25	1.25	mg/Kg	
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol	
Silver, Extractable, SEM	ND	—	—	0.0022	0.0112	mmol/Kg	ND	—	—	0.0023	0.0116	mmol/Kg	
Zinc, Extractable, SEM	10.9	—	—	0.3	1.51	mg/Kg	27.5	—	—	0.31	1.56	mg/Kg	
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol	
Zinc, Extractable, SEM	0.167	—	—	0.005	0.0231	mmol/Kg	0.421	—	—	0.0047	0.0239	mmol/Kg	
Total SEM	0.31	—	—	—	—	mmol/Kg	0.56	—	—	—	—	mmol/Kg	
Sulfide, Acid Volatile	11.1	JG	—	0.75	3.03	mg/Kg	9.77	JG	—	0.79	3.12	mg/Kg	
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol	
Sulfide, Acid Volatile	0.346	—	—	0.023	0.0945	mmol/Kg	0.305	—	—	0.025	0.0973	mmol/Kg	
SEM/AVS	0.89	—	—	—	—	—	1.8	—	—	—	—	—	

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: WX320 Descrip: JENKINS CRK AT WAX Sample: L56024-28 Matrix: SE FRSHWTRSED ColDate: 8/27/12 10:00 TotalSolid: 13.2 DRY Weight Basis		JK320 JENKLINS CREEK DOW L56024-29 SE FRSHWTRSED 8/27/12 10:25 15.6 DRY Weight Basis										
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.53	<RDL	J	0.3	1.51	mg/Kg	0.47	<RDL	J	0.24	1.21	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0047	—	—	0.003	0.0134	mmol/Kg	0.0042	—	—	0.0021	0.0108	mmol/Kg
Copper, Extractable, SEM	14.2	—	—	0.61	3.02	mg/Kg	13.6	—	—	0.49	2.42	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.223	—	—	0.0096	0.0475	mmol/Kg	0.214	—	—	0.0077	0.0381	mmol/Kg
Lead, Extractable, SEM	63.0	—	—	3	15.1	mg/Kg	16.4	—	—	2.4	12.1	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.304	—	—	0.01	0.0729	mmol/Kg	0.0792	—	—	0.012	0.0584	mmol/Kg
Nickel, Extractable, SEM	3.5	<RDL	J	0.75	3.77	mg/Kg	3.51	—	—	0.61	3.03	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.060	—	—	0.013	0.0642	mmol/Kg	0.0598	—	—	0.010	0.0516	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.61	3.02	mg/Kg	—	<MDL	U	0.49	2.42	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0057	0.0280	mmol/Kg	ND	—	—	0.0045	0.0224	mmol/Kg
Zinc, Extractable, SEM	105	—	—	0.75	3.77	mg/Kg	61.3	—	—	0.61	3.03	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	1.61	—	—	0.01	0.0577	mmol/Kg	0.938	—	—	0.0093	0.0463	mmol/Kg
Total SEM	2.20	—	—	—	—	mmol/Kg	1.29	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	22.6	JG	—	1.9	7.53	mg/Kg	39.0	JG	—	1.5	6.06	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.705	—	—	0.059	0.235	mmol/Kg	1.22	—	—	0.047	0.189	mmol/Kg
SEM/AVS	3.1	—	—	—	—	—	1.1	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: FR320							LW320					
Descrip: JENKINS CRK AT FRO							JENKINS LK. WILDER					
Sample: L56024-30							L56024-33					
Matrix: SE FRSHWTRSED							SE FRSHWTRSED					
ColDate: 8/27/12 12:30							8/27/12 11:45					
TotalSolid: 14.9							13.5					
DRY Weight Basis							DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	0.46	<RDL	J	0.26	1.32	mg/Kg	0.43	<RDL	J	0.28	1.42	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	0.0041	—	—	0.0023	0.0117	mmol/Kg	0.0038	—	—	0.0025	0.0126	mmol/Kg
Copper, Extractable, SEM	18.6	—	—	0.53	2.65	mg/Kg	20.8	—	—	0.57	2.85	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.293	—	—	0.0083	0.0417	mmol/Kg	0.327	—	—	0.0090	0.0448	mmol/Kg
Lead, Extractable, SEM	14.0	—	—	2.6	13.2	mg/Kg	29.0	—	—	2.8	14.2	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0676	—	—	0.013	0.0637	mmol/Kg	0.140	—	—	0.014	0.0685	mmol/Kg
Nickel, Extractable, SEM	4.34	—	—	0.66	3.31	mg/Kg	3.3	<RDL	J	0.71	3.56	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0739	—	—	0.011	0.0564	mmol/Kg	0.056	—	—	0.012	0.0607	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.53	2.65	mg/Kg	—	<MDL	U	0.57	2.85	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0049	0.0246	mmol/Kg	ND	—	—	0.0053	0.02642	mmol/Kg
Zinc, Extractable, SEM	52.3	—	—	0.66	3.31	mg/Kg	94.8	—	—	0.71	3.56	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.800	—	—	0.010	0.0506	mmol/Kg	1.45	—	—	0.011	0.0545	mmol/Kg
Total SEM	1.24	—	—	—	—	mmol/Kg	1.98	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	23.0	JG	—	1.7	6.62	mg/Kg	1210	JG	—	44	179	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.717	—	—	0.053	0.206	mmol/Kg	37.7	—	—	1.4	5.58	mmol/Kg
SEM/AVS	1.7	—	—	—	—	—	0.05	—	—	—	—	—

ND - Nondetect

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: FL319 Descrip: GREEN RIVER, DOWNS Sample: L56024-34 Matrix: SE FRSHWTRSED ColDate: 8/29/12 10:10 TotalSolid: 74 DRY Weight Basis							'0318 GREEN RIVER/EAST V L56024-35 SE FRSHWTRSED 8/29/12 12:40 61.4 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	U	0.054	0.27	mg/Kg	—	<MDL	U	0.06	0.303	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	—	0.00048	0.0024	mmol/Kg	ND	—	—	0.0005	0.00270	mmol/Kg
Copper, Extractable, SEM	2.27	—	—	0.11	0.539	mg/Kg	5.91	—	—	0.12	0.606	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.0357	—	—	0.0017	0.00848	mmol/Kg	0.0930	—	—	0.0019	0.00954	mmol/Kg
Lead, Extractable, SEM	1.5	<RDL	J	0.54	2.7	mg/Kg	2.1	<RDL	J	0.6	3.03	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0072	—	—	0.0026	0.013	mmol/Kg	0.010	—	—	0.003	0.0146	mmol/Kg
Nickel, Extractable, SEM	0.728	—	—	0.14	0.674	mg/Kg	1.73	—	—	0.15	0.757	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0124	—	—	0.0024	0.0115	mmol/Kg	0.0295	—	—	0.0026	0.0129	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.11	0.539	mg/Kg	—	<MDL	U	0.12	0.606	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0010	0.00500	mmol/Kg	ND	—	—	0.0011	0.00562	mmol/Kg
Zinc, Extractable, SEM	8.09	—	—	0.14	0.674	mg/Kg	10.3	—	—	0.15	0.757	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.124	—	—	0.0021	0.0103	mmol/Kg	0.158	—	—	0.0023	0.0116	mmol/Kg
Total SEM	0.18	—	—	—	—	mmol/Kg	0.29	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	—	<MDL,JG	U	0.34	1.35	mg/Kg	0.68	<RDL,JG	J	0.37	1.51	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	ND	—	—	0.011	0.0421	mmol/Kg	0.021	—	—	0.012	0.0471	mmol/Kg
SEM/AVS	*	—	—	—	—	—	14	—	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable

Table B-4: Green River Basin Sediment SEM/AVS Calculations 2012

Locator: A319 Descrip: GREEN RIVER/ABOVE Sample: L56024-36 Matrix: SE FRSHWTRSED ColDate: 8/27/12 13:25 TotalSolid: 48.9 DRY Weight Basis							FG319 GREEN RIVER, FLAMI L56024-37 SE FRSHWTRSED 8/14/12 12:00 63.4 DRY Weight Basis					
Parameters	Value	Lab Qual	Val Qual	MDL	RDL	Units	Value	Lab Qual	Val Qual	MDL	RDL	Units
Cadmium, Extractable, SEM	—	<MDL	U	0.08	0.403	mg/Kg	—	<MDL	U	0.06	0.303	mg/Kg
Cadmium, Molecular Weight	112.41	—	—	—	—	mg/mmol	112.41	—	—	—	—	mg/mmol
Cadmium, Extractable, SEM	ND	—	—	0.0007	0.00359	mmol/Kg	ND	—	—	0.0005	0.00270	mmol/Kg
Copper, Extractable, SEM	7.24	—	—	0.16	0.806	mg/Kg	5.17	—	—	0.12	0.606	mg/Kg
Copper, Molecular Weight	63.55	—	—	—	—	mg/mmol	63.55	—	—	—	—	mg/mmol
Copper, Extractable, SEM	0.114	—	—	0.0025	0.0127	mmol/Kg	0.0814	—	—	0.0019	0.00954	mmol/Kg
Lead, Extractable, SEM	4.09	<RDL	J	0.8	4.03	mg/Kg	2.4	<RDL	J	0.6	3.03	mg/Kg
Lead, Molecular Weight	207.2	—	—	—	—	mg/mmol	207.2	—	—	—	—	mg/mmol
Lead, Extractable, SEM	0.0197	—	—	0.004	0.0194	mmol/Kg	0.012	—	—	0.003	0.0146	mmol/Kg
Nickel, Extractable, SEM	2.21	—	—	0.2	1.01	mg/Kg	1.28	—	—	0.15	0.757	mg/Kg
Nickel, Molecular Weight	58.69	—	—	—	—	mg/mmol	58.69	—	—	—	—	mg/mmol
Nickel, Extractable, SEM	0.0377	—	—	0.003	0.0172	mmol/Kg	0.0218	—	—	0.0026	0.0129	mmol/Kg
Silver, Extractable, SEM	—	<MDL	U	0.16	0.806	mg/Kg	—	<MDL	U	0.12	0.606	mg/Kg
Silver, Molecular Weight	107.87	—	—	—	—	mg/mmol	107.87	—	—	—	—	mg/mmol
Silver, Extractable, SEM	ND	—	—	0.0015	0.00747	mmol/Kg	ND	—	—	0.0011	0.00562	mmol/Kg
Zinc, Extractable, SEM	13.3	—	—	0.2	1.01	mg/Kg	9.37	—	—	0.15	0.757	mg/Kg
Zinc, Molecular Weight	65.38	—	—	—	—	mg/mmol	65.38	—	—	—	—	mg/mmol
Zinc, Extractable, SEM	0.203	—	—	0.003	0.0154	mmol/Kg	0.143	—	—	0.0023	0.0116	mmol/Kg
Total SEM	0.37	—	—	—	—	mmol/Kg	0.26	—	—	—	—	mmol/Kg
Sulfide, Acid Volatile	1.3	<RDL,JG	J	0.51	2.01	mg/Kg	—	<MDL,JG	U	0.38	1.51	mg/Kg
Sulfide, Molecular Weight	32.06	—	—	—	—	mg/mmol	32.06	—	—	—	—	mg/mmol
Sulfide, Acid Volatile	0.041	—	—	0.016	0.0627	mmol/Kg	ND	—	—	0.012	0.0471	mmol/Kg
SEM/AVS	9.2	—	—	—	—	—	*	—	—	—	—	—

ND - Nondetect; * No detected AVS - metals bioavailable