WKJ0525

Page 1 of 1

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt: 4.1 °C

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other_____

Report to Company: MSE
Contact: Bob Lambeth
Address: 1241 E. Division St, #333
Spokane, WA 99218
Phone Number: (509) 747-0594
FAX Number:
E-mail: blambeth @ mse-env.com

Invoice Sent To: Same
Contact:
Address:
Phone Number:
FAX Number:
PO#:

Project Name: Longshot Mine RA
Sampler's Signature: RS Lamb

Indicate State of sample origination: WA **USACE?** ☐ Yes ☒ No

	Sample ID	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: TRM: As, Ba, Cd, Cu, Pb, Zn	TM:	TDS, TSS, Hardness	SO_4	pH, EL	Conductivity per BL 10-24-11	Rush Instructions (Days)	Comments
	Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, Ø and O. Thanks!																				10:35 AM 10-27-11 DW spoke w/ BL do As, Cd and Pb by MS. 10-21-11 DW phone call to Bob
1	AD1	10-19	10:50		1	4								✓	✓	✓	✓		x		-we are to filter in lab on ~~ADI~~ all metals samples
2	ET3	10-19	9:35		1	4								✓	✓	✓	✓		x		
3	BG1	10-19	10:00		1	4								✓	✓	✓	✓		y		-wants T + D metals
4	B1 TR Metals 1S phos.	10-19	11:15	DW	1	2								✓				X omit	NO		
5																					
6																					
7	AD1	10-19	10:50	1	3	1		x						✓							
8	ET3	10-19	9:35	1	3	1		x													
9	BG1	10-19	10:00	1	3	1		x													
10																					

Relinquished by: RS Lamb Date: 10-21 Time: 7:30 Received by:
Relinquished by: Date: Time: Received by:

Date: 10/21/11 Time: 16:00
Date: Time:

SVL-COC 9/05

* Sample Reject: ☐ Return ☐ Dispose ☒ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL WILL FILTER & PRESERVE FOR DISSOLVED METALS ANALYSIS. CF 10/21/11

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 10/27/11 By: CR Sevy

SVL Work No: WLJ0525

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				MSE
2	Date and time of receipt at lab	✓				10/27/11 16:00
3	Received by	✓				C Flores
4	Temperature blank or cooler temperature	✓				Temp. 4.1 °C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	NO SVL WILL FILT & PRES FOR D. METALS
12	Type of container for each sample / volume received	✓				
13	Analysis requested for each sample	✓				
14	Sample matrix description	✓				
15	COC properly completed & legible	✓				
16	Corrections properly made (initials & date)				✓	
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
18	Shipper's air bill				✓	CITY PARCEL

V- Verified VC- Verified Corrections Made NV-Not Verified NA- Not Applicable

Additional Comments: _____

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AD1	W1J0525-01	Surface Water	19-Oct-11 10:50	21-Oct-2011
ET3	W1J0525-02	Surface Water	19-Oct-11 09:35	21-Oct-2011
BG1	W1J0525-03	Surface Water	19-Oct-11 10:00	21-Oct-2011
B1	W1J0525-04	Surface Water	19-Oct-11 11:15	21-Oct-2011
AD1	W1J0525-05	Soil	19-Oct-11 10:50	21-Oct-2011
ET3	W1J0525-06	Soil	19-Oct-11 09:35	21-Oct-2011
BG1	W1J0525-07	Soil	19-Oct-11 10:00	21-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative

10/27/11 - The client requested SVL filter and preserve the samples in the lab for dissolved metals.

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **AD1**
SVL Sample ID: **W1J0525-01 (Surface Water)**

Sampled: 19-Oct-11 10:50
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	**Barium**	0.0029	mg/L	0.0020	0.0002		W144320	TJK	11/01/11 15:03	
EPA 200.7	**Calcium**	80.7	mg/L	0.040	0.006		W144320	TJK	11/01/11 15:01	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.002		W144320	TJK	11/01/11 15:02	
EPA 200.7	**Magnesium**	3.40	mg/L	0.060	0.010		W144320	TJK	11/01/11 15:01	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0003		W144320	TJK	11/01/11 15:02	
EPA 200.7	**Zinc**	0.0427	mg/L	0.0100	0.0010		W144320	TJK	11/01/11 15:03	
EPA 200.8	Arsenic	< 0.0030	mg/L	0.0030	0.0006	2.5	W144321	KWH	10/31/11 16:48	
EPA 200.8	**Cadmium**	0.00058	mg/L	0.00020	0.00003	2.5	W144321	KWH	10/31/11 16:48	
EPA 200.8	**Lead**	0.00375	mg/L	0.00300	0.000052	2.5	W144321	KWH	10/31/11 16:48	
SM 2340B	**Hardness (as CaCO3)**	215	mg/L	0.347	0.058		N/A		11/01/11 15:01	
Metals (Dissolved)										
EPA 200.7	**Barium**	0.0027	mg/L	0.0020	0.0004		W145011	TJK	11/03/11 11:03	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.003		W145011	TJK	11/03/11 11:03	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0005		W145011	TJK	11/03/11 11:03	
EPA 200.7	**Zinc**	0.0298	mg/L	0.0100	0.0021		W145011	TJK	11/03/11 11:03	
EPA 200.8	Arsenic	< 0.0030	mg/L	0.0030	0.0005		W145006	KWH	11/03/11 07:37	
EPA 200.8	**Cadmium**	0.00037	mg/L	0.00020	0.000026		W145006	KWH	11/03/11 07:37	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000042		W145006	KWH	11/03/11 07:37	
Classical Chemistry Parameters										
EPA 120.1	**Specific conductance**	467	µmhos/cm	5.00			W145034	JMS	10/31/11 09:30	
SM 2540 C	**Total Diss. Solids**	230	mg/L	10			W144266	RS	10/28/11 13:20	H1
SM 2540 D	Total Susp. Solids	< 5.0	mg/L	5.0			W144265	RS	10/28/11 13:20	H1
SM 2580B	**Eh**	448	mV	2.50			W144299	DKS	10/28/11 13:57	
SM 4500 H B	**pH @21.0°C**	7.95	pH Units				W144257	DKS	10/28/11 09:23	H5
Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	22.9	mg/L	1.50	0.37	5	W144333	AEW	11/04/11 13:07	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **ET3**
SVL Sample ID: **W1J0525-02 (Surface Water)**

Sampled: 19-Oct-11 09:35
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	**Barium**	0.0480	mg/L	0.0020	0.0002		W144320	TJK	11/01/11 15:08	
EPA 200.7	**Calcium**	87.6	mg/L	0.040	0.006		W144320	TJK	11/01/11 15:06	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.002		W144320	TJK	11/01/11 15:08	
EPA 200.7	**Magnesium**	7.19	mg/L	0.060	0.010		W144320	TJK	11/01/11 15:07	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0003		W144320	TJK	11/01/11 15:08	
EPA 200.7	**Zinc**	0.163	mg/L	0.0100	0.0010		W144320	TJK	11/01/11 15:08	
EPA 200.8	**Arsenic**	0.0046	mg/L	0.0030	0.0006	2.5	W144321	KWH	10/31/11 16:50	
EPA 200.8	**Cadmium**	0.00103	mg/L	0.00020	0.00003	2.5	W144321	KWH	10/31/11 16:50	
EPA 200.8	**Lead**	0.0657	mg/L	0.00300	0.000052	2.5	W144321	KWH	10/31/11 16:50	
SM 2340B	**Hardness (as CaCO3)**	248	mg/L	0.347	0.058		N/A		11/01/11 15:07	
Metals (Dissolved)										
EPA 200.7	**Barium**	0.0100	mg/L	0.0020	0.0004		W145011	TJK	11/03/11 11:22	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.003		W145011	TJK	11/03/11 11:21	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0005		W145011	TJK	11/03/11 11:21	
EPA 200.7	Zinc	< 0.0100	mg/L	0.0100	0.0021		W145011	TJK	11/03/11 11:22	
EPA 200.8	Arsenic	< 0.0030	mg/L	0.0030	0.0005		W145006	KWH	11/03/11 07:42	
EPA 200.8	Cadmium	< 0.00020	mg/L	0.00020	0.000026		W145006	KWH	11/03/11 07:42	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000042		W145006	KWH	11/03/11 07:42	
Classical Chemistry Parameters										
EPA 120.1	**Specific conductance**	518	µmhos/cm	5.00			W145034	JMS	10/31/11 09:30	
SM 2540 C	**Total Diss. Solids**	259	mg/L	10			W144266	RS	10/28/11 13:20	H1
SM 2540 D	**Total Susp. Solids**	89.0	mg/L	5.0			W144265	RS	10/28/11 13:20	H1
SM 2580B	**Eh**	462	mV	2.50			W144299	DKS	10/28/11 13:57	
SM 4500 H B	**pH @20.4°C**	7.65	pH Units				W144257	DKS	10/28/11 09:25	H5
Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	10.3	mg/L	1.50	0.37	5	W144333	AEW	11/04/11 13:26	D1

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **BG1**
SVL Sample ID: **W1J0525-03 (Surface Water)**

Sampled: 19-Oct-11 10:00
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	**Barium**	0.0116	mg/L	0.0020	0.0002		W144320	TJK	11/01/11 15:14	
EPA 200.7	**Calcium**	65.0	mg/L	0.040	0.006		W144320	TJK	11/01/11 15:12	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.002		W144320	TJK	11/01/11 15:13	
EPA 200.7	**Magnesium**	3.43	mg/L	0.060	0.010		W144320	TJK	11/01/11 15:12	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0003		W144320	TJK	11/01/11 15:13	
EPA 200.7	Zinc	< 0.0100	mg/L	0.0100	0.0010		W144320	TJK	11/01/11 15:14	
EPA 200.8	Arsenic	< 0.0030	mg/L	0.0030	0.0006	2.5	W144321	KWH	10/31/11 16:51	
EPA 200.8	Cadmium	< 0.00020	mg/L	0.00020	0.00003	2.5	W144321	KWH	10/31/11 16:51	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000052	2.5	W144321	KWH	10/31/11 16:51	
SM 2340B	**Hardness (as CaCO3)**	176	mg/L	0.347	0.058		N/A		11/01/11 15:12	
Metals (Dissolved)										
EPA 200.7	**Barium**	0.0106	mg/L	0.0020	0.0004		W145011	TJK	11/03/11 11:28	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.003		W145011	TJK	11/03/11 11:27	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0005		W145011	TJK	11/03/11 11:27	
EPA 200.7	Zinc	< 0.0100	mg/L	0.0100	0.0021		W145011	TJK	11/03/11 11:28	
EPA 200.8	Arsenic	< 0.0030	mg/L	0.0030	0.0005		W145006	KWH	11/03/11 07:43	
EPA 200.8	Cadmium	< 0.00020	mg/L	0.00020	0.000026		W145006	KWH	11/03/11 07:43	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000042		W145006	KWH	11/03/11 07:43	
Classical Chemistry Parameters										
EPA 120.1	**Specific conductance**	392	µmhos/cm	5.00			W145034	JMS	10/31/11 09:30	
SM 2540 C	**Total Diss. Solids**	206	mg/L	10			W144266	RS	10/28/11 13:20	H1
SM 2540 D	Total Susp. Solids	< 5.0	mg/L	5.0			W144265	RS	10/28/11 13:20	H1
SM 2580B	**Eh**	457	mV	2.50			W144299	DKS	10/28/11 13:57	
SM 4500 H B	**pH @21.3°C**	7.85	pH Units				W144257	DKS	10/28/11 09:28	H5
Anions by Ion Chromatography										
EPA 300.0	**Sulfate as SO4**	7.18	mg/L	1.50	0.37	5	W144333	AEW	11/04/11 13:36	D1

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **B1**
SVL Sample ID: **W1J0525-04 (Surface Water)**

Sampled: 19-Oct-11 11:15
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Barium	< 0.0020	mg/L	0.0020	0.0002		W144320	TJK	11/01/11 15:19	
EPA 200.7	Calcium	< 0.040	mg/L	0.040	0.006		W144320	TJK	11/01/11 15:18	
EPA 200.7	Copper	< 0.010	mg/L	0.010	0.002		W144320	TJK	11/01/11 15:19	
EPA 200.7	Magnesium	< 0.060	mg/L	0.060	0.010		W144320	TJK	11/01/11 15:18	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0003		W144320	TJK	11/01/11 15:19	
EPA 200.7	Zinc	< 0.0100	mg/L	0.0100	0.0010		W144320	TJK	11/01/11 15:19	
EPA 200.8	Arsenic	< 0.0030	mg/L	0.0030	0.0006	2.5	W144321	KWH	10/31/11 16:53	
EPA 200.8	Cadmium	< 0.00020	mg/L	0.00020	0.00003	2.5	W144321	KWH	10/31/11 16:53	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000052	2.5	W144321	KWH	10/31/11 16:53	
SM 2340B	Hardness (as CaCO3)	< 0.347	mg/L	0.347	0.058		N/A		11/01/11 15:18	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **AD1**
SVL Sample ID: **W1J0525-05 (Soil)**

Sampled: 19-Oct-11 10:50
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W144302	AS	10/31/11 16:19	
EPA 6010B	**Barium**	12.0	mg/kg	0.200	0.024		W144302	AS	10/31/11 16:19	
EPA 6010B	**Cadmium**	13.4	mg/kg	0.20	0.02		W144302	AS	10/31/11 16:19	
EPA 6010B	**Copper**	22.9	mg/kg	1.00	0.21		W144302	AS	10/31/11 16:19	
EPA 6010B	**Lead**	59.9	mg/kg	0.75	0.21		W144302	AS	10/31/11 16:19	
EPA 6010B	Silver	< 0.50	mg/kg	0.50	0.04		W144302	AS	10/31/11 16:19	
EPA 6010B	**Zinc**	577	mg/kg	1.00	0.09		W144302	AS	10/31/11 16:19	
Percent Solids										
Percent Solids	**% Solids**	29.0	%	0.1			W144304	DP	10/31/11 11:04	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **ET3**
SVL Sample ID: **W1J0525-06 (Soil)**

Sampled: 19-Oct-11 09:35
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	8.4	mg/kg	2.5	0.4		W144302	AS	10/31/11 16:43	
EPA 6010B	**Barium**	89.8	mg/kg	0.200	0.024		W144302	AS	10/31/11 16:43	
EPA 6010B	**Cadmium**	2.07	mg/kg	0.20	0.02		W144302	AS	10/31/11 16:43	
EPA 6010B	**Copper**	7.53	mg/kg	1.00	0.21		W144302	AS	10/31/11 16:43	
EPA 6010B	**Lead**	80.4	mg/kg	0.75	0.21		W144302	AS	10/31/11 16:43	
EPA 6010B	**Silver**	1.43	mg/kg	0.50	0.04		W144302	AS	10/31/11 16:43	
EPA 6010B	**Zinc**	287	mg/kg	1.00	0.09		W144302	AS	10/31/11 16:43	
Percent Solids										
Percent Solids	**% Solids**	22.4	%	0.1			W144304	DP	10/31/11 11:04	

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Laboratory Director

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Client Sample ID: **BG1**
SVL Sample ID: **W1J0525-07 (Soil)**

Sampled: 19-Oct-11 10:00
Received: 21-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W144302	AS	10/31/11 16:49	
EPA 6010B	**Barium**	18.3	mg/kg	0.200	0.024		W144302	AS	10/31/11 16:48	
EPA 6010B	Cadmium	< 0.20	mg/kg	0.20	0.02		W144302	AS	10/31/11 16:49	
EPA 6010B	**Copper**	31.1	mg/kg	1.00	0.21		W144302	AS	10/31/11 16:48	
EPA 6010B	**Lead**	3.22	mg/kg	0.75	0.21		W144302	AS	10/31/11 16:49	
EPA 6010B	Silver	< 0.50	mg/kg	0.50	0.04		W144302	AS	10/31/11 16:48	
EPA 6010B	**Zinc**	12.7	mg/kg	1.00	0.09		W144302	AS	10/31/11 16:49	
Percent Solids										
Percent Solids	**% Solids**	24.7	%	0.1			W144304	DP	10/31/11 11:04	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods								
EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	<0.200	0.024	0.200	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	<0.20	0.02	0.20	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	<1.00	0.21	1.00	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	<0.75	0.21	0.75	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	<0.50	0.04	0.50	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	<1.00	0.09	1.00	W144302	31-Oct-11	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)								
EPA 200.7	Barium	mg/L	<0.0020	0.0002	0.0020	W144320	01-Nov-11	
EPA 200.7	Calcium	mg/L	<0.040	0.006	0.040	W144320	01-Nov-11	
EPA 200.7	Copper	mg/L	<0.010	0.002	0.010	W144320	01-Nov-11	
EPA 200.7	Magnesium	mg/L	<0.060	0.010	0.060	W144320	01-Nov-11	
EPA 200.7	Silver	mg/L	<0.0050	0.0003	0.0050	W144320	01-Nov-11	
EPA 200.7	Zinc	mg/L	<0.0100	0.0010	0.0100	W144320	01-Nov-11	
EPA 200.8	Arsenic	mg/L	<0.0030	0.0006	0.0030	W144321	31-Oct-11	
EPA 200.8	Lead	mg/L	<0.00300	0.000052	0.00300	W144321	31-Oct-11	
EPA 200.8	Cadmium	mg/L	<0.00020	0.00003	0.00020	W144321	31-Oct-11	
Metals (Dissolved)								
EPA 200.7	Barium	mg/L	<0.0020	0.0004	0.0020	W145011	03-Nov-11	
EPA 200.7	Copper	mg/L	<0.010	0.003	0.010	W145011	03-Nov-11	
EPA 200.7	Silver	mg/L	<0.0050	0.0005	0.0050	W145011	03-Nov-11	
EPA 200.7	Zinc	mg/L	<0.0100	0.0021	0.0100	W145011	03-Nov-11	
EPA 200.8	Arsenic	mg/L	<0.0030	0.0005	0.0030	W145006	03-Nov-11	
EPA 200.8	Cadmium	mg/L	<0.00020	0.000026	0.00020	W145006	03-Nov-11	
EPA 200.8	Lead	mg/L	<0.00300	0.000042	0.00300	W145006	03-Nov-11	
Classical Chemistry Parameters								
EPA 120.1	Specific conductance	µmhos/cm	<5.00		5.00	W145034	31-Oct-11	
SM 2540 C	Total Diss. Solids	mg/L	<10		10	W144266	28-Oct-11	
SM 2540 D	Total Susp. Solids	mg/L	<5.0		5.0	W144265	28-Oct-11	
Anions by Ion Chromatography								
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.07	0.30	W144333	03-Nov-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods									
EPA 6010B	Arsenic	mg/kg	93.3	100	93.3	80 - 120	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	97.8	100	97.8	80 - 120	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	94.3	100	94.3	80 - 120	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	97.6	100	97.6	80 - 120	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	94.5	100	94.5	80 - 120	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	4.77	5.00	95.3	80 - 120	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	94.0	100	94.0	80 - 120	W144302	31-Oct-11	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)									
EPA 200.7	Barium	mg/L	0.969	1.00	96.9	85 - 115	W144320	01-Nov-11	
EPA 200.7	Calcium	mg/L	18.4	20.0	92.0	85 - 115	W144320	01-Nov-11	
EPA 200.7	Copper	mg/L	0.962	1.00	96.2	85 - 115	W144320	01-Nov-11	
EPA 200.7	Magnesium	mg/L	18.3	20.0	91.5	85 - 115	W144320	01-Nov-11	
EPA 200.7	Silver	mg/L	0.0502	0.0500	100	85 - 115	W144320	01-Nov-11	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Quality Control - LABORATORY CONTROL SAMPLE Data (Continued)

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136) (Continued)									
EPA 200.7	Zinc	mg/L	0.946	1.00	94.6	85 - 115	W144320	01-Nov-11	
EPA 200.8	Arsenic	mg/L	0.0247	0.0250	98.9	85 - 115	W144321	31-Oct-11	
EPA 200.8	Lead	mg/L	0.0254	0.0250	101	85 - 115	W144321	31-Oct-11	
EPA 200.8	Cadmium	mg/L	0.0255	0.0250	102	85 - 115	W144321	31-Oct-11	
Metals (Dissolved)									
EPA 200.7	Barium	mg/L	1.02	1.00	102	85 - 115	W145011	03-Nov-11	
EPA 200.7	Copper	mg/L	0.989	1.00	98.9	85 - 115	W145011	03-Nov-11	
EPA 200.7	Silver	mg/L	0.0508	0.0500	102	85 - 115	W145011	03-Nov-11	
EPA 200.7	Zinc	mg/L	0.993	1.00	99.3	85 - 115	W145011	03-Nov-11	
EPA 200.8	Arsenic	mg/L	0.0255	0.0250	102	85 - 115	W145006	03-Nov-11	
EPA 200.8	Cadmium	mg/L	0.0259	0.0250	103	85 - 115	W145006	03-Nov-11	
EPA 200.8	Lead	mg/L	0.0261	0.0250	105	85 - 115	W145006	03-Nov-11	
Classical Chemistry Parameters									
EPA 120.1	Specific conductance	µmhos/cm	504	492	102	90 - 110	W145034	31-Oct-11	
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	10.7	10.0	107	90 - 110	W144333	03-Nov-11	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)									
EPA 200.7	Barium	mg/L	<0.0020	<0.0020	UDL	20	W144320	01-Nov-11	
EPA 200.7	Calcium	mg/L	0.107	0.107	0.2	20	W144320	01-Nov-11	
EPA 200.7	Copper	mg/L	<0.010	<0.010	UDL	20	W144320	01-Nov-11	
EPA 200.7	Magnesium	mg/L	<0.060	<0.060	UDL	20	W144320	01-Nov-11	
EPA 200.7	Silver	mg/L	<0.0050	<0.0050	UDL	20	W144320	01-Nov-11	
EPA 200.7	Zinc	mg/L	<0.0100	<0.0100	UDL	20	W144320	01-Nov-11	
EPA 200.8	Arsenic	mg/L	<0.0030	<0.0030	UDL	20	W144321	31-Oct-11	
EPA 200.8	Lead	mg/L	<0.00300	<0.00300	UDL	20	W144321	31-Oct-11	
EPA 200.8	Cadmium	mg/L	<0.00020	<0.00020	UDL	20	W144321	31-Oct-11	
Metals (Dissolved)									
EPA 200.7	Barium	mg/L	0.0026	0.0027	4.0	20	W145011	03-Nov-11	
EPA 200.7	Copper	mg/L	<0.010	<0.010	UDL	20	W145011	03-Nov-11	
EPA 200.7	Silver	mg/L	<0.0050	<0.0050	UDL	20	W145011	03-Nov-11	
EPA 200.7	Zinc	mg/L	0.0295	0.0298	1.2	20	W145011	03-Nov-11	
EPA 200.8	Arsenic	mg/L	<0.0030	<0.0030	UDL	20	W145006	03-Nov-11	
EPA 200.8	Cadmium	mg/L	0.00034	0.00037	8.9	20	W145006	03-Nov-11	
EPA 200.8	Lead	mg/L	<0.00300	<0.00300	<RL	20	W145006	03-Nov-11	
Classical Chemistry Parameters									
EPA 120.1	Specific conductance	µmhos/cm	469	467	0.6	20	W145034	31-Oct-11	
SM 2540 C	Total Diss. Solids	mg/L	322	307	4.8	10	W144266	28-Oct-11	
SM 2540 D	Total Susp. Solids	mg/L	<5.0	<5.0	<RL	10	W144265	28-Oct-11	
SM 2540 D	Total Susp. Solids	mg/L	<5.0	<5.0	<RL	10	W144265	28-Oct-11	
SM 2580B	Eh	mV	440	448	1.8	20	W144299	28-Oct-11	
SM 4500 H B	pH	pH Units	7.32	7.37	0.7	20	W144257	28-Oct-11	
SM 4500 H B	pH	pH Units	8.08	8.10	0.2	20	W144257	28-Oct-11	
Anions by Ion Chromatography									
EPA 300.0	Sulfate as SO4	mg/L	1690	1680	0.3	20	W144333	03-Nov-11	D2

SVL holds the following certifications:
AZ:0538, **CA**:2080, **FL**(**NELAC**):E87993, **ID**:ID00019 & ID00965 (Microbiology), **NV**:ID000192007A, **WA**:1268

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	mg/kg	127	37.0	100	90.1	75 - 125	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	140	38.7	100	101	75 - 125	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	91.0	<0.20	100	90.9	75 - 125	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	100	4.26	100	96.1	75 - 125	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	96.8	5.21	100	91.6	75 - 125	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	4.70	<0.50	5.00	93.9	75 - 125	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	116	23.9	100	92.3	75 - 125	W144302	31-Oct-11	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Barium	mg/L	0.974	<0.0020	1.00	97.4	70 - 130	W144320	01-Nov-11	
EPA 200.7	Calcium	mg/L	19.1	0.107	20.0	95.2	70 - 130	W144320	01-Nov-11	
EPA 200.7	Copper	mg/L	0.978	<0.010	1.00	97.8	70 - 130	W144320	01-Nov-11	
EPA 200.7	Magnesium	mg/L	18.9	<0.060	20.0	94.5	70 - 130	W144320	01-Nov-11	
EPA 200.7	Silver	mg/L	0.0508	<0.0050	0.0500	102	70 - 130	W144320	01-Nov-11	
EPA 200.7	Zinc	mg/L	0.956	<0.0100	1.00	95.6	70 - 130	W144320	01-Nov-11	
EPA 200.8	Arsenic	mg/L	0.0252	<0.0030	0.0250	101	70 - 130	W144321	31-Oct-11	
EPA 200.8	Lead	mg/L	0.0252	<0.00300	0.0250	101	70 - 130	W144321	31-Oct-11	
EPA 200.8	Cadmium	mg/L	0.0258	<0.00020	0.0250	103	70 - 130	W144321	31-Oct-11	
Metals (Dissolved)										
EPA 200.7	Barium	mg/L	1.02	0.0027	1.00	102	70 - 130	W145011	03-Nov-11	
EPA 200.7	Copper	mg/L	0.977	<0.010	1.00	97.7	70 - 130	W145011	03-Nov-11	
EPA 200.7	Silver	mg/L	0.0529	<0.0050	0.0500	106	70 - 130	W145011	03-Nov-11	
EPA 200.7	Zinc	mg/L	1.05	0.0298	1.00	102	70 - 130	W145011	03-Nov-11	
EPA 200.8	Arsenic	mg/L	0.0296	<0.0030	0.0250	118	70 - 130	W145006	03-Nov-11	
EPA 200.8	Cadmium	mg/L	0.0264	0.00037	0.0250	104	70 - 130	W145006	03-Nov-11	
EPA 200.8	Lead	mg/L	0.0258	<0.00300	0.0250	98.0	70 - 130	W145006	03-Nov-11	
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	mg/L	1700	1680	10.0	R > 4S	90 - 110	W144333	03-Nov-11	D2,M3
EPA 300.0	Sulfate as SO4	mg/L	33.7	22.9	10.0	108	90 - 110	W144333	04-Nov-11	D1

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	mg/kg	135	127	100	6.1	20	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	145	140	100	3.7	20	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	91.8	91.0	100	0.9	20	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	101	100	100	1.0	20	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	97.5	96.8	100	0.7	20	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	4.74	4.70	5.00	0.9	20	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	116	116	100	0.5	20	W144302	31-Oct-11	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0525**
Reported: 07-Nov-11 11:14

Notes and Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
H1	Sample analysis performed past holding time.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

CHAIN OF CUSTODY RECORD

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WIJ0635
FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt:

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other Wood Chips

Report to Company: MSE
Contact: Bob Lamb & TL
Address: 12402 N. Div. ST #333
Spokane, WA 99218
Phone Number: (509) 742-0294
FAX Number:
E-mail: blamb@th@mse-env.com

Invoice Sent To: Same
Contact:
Address:
Phone Number:
FAX Number:
PO#:

Project Name: Long Shot Mine
Sampler's Signature: RB Zamb

Indicate State of sample origination: WA **USACE?** ☐ Yes ☒ No

	Sample ID (Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, Ø and O. Thanks!)	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: TCLP (RCRA 8 + Cu, Zn)	Analyses Required: Total (RCRA 8 + Cu, Zn)	Rush Instructions (Days)	Comments
1	EMRAW 1	10-26	4:45	RB	7	1	X							X	X		1	
2	~~EMRAW 1~~																	
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: RB Zamb Date: 10-27 Time: 8:00 Received by:
Relinquished by: Date: Time: Received by:
Date: 10/27/11 Time: 13:50

* Sample Reject: ☐ Return ☐ Dispose ☑ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 10/27/11 **By:** CR Seevy

SVL Work No: WIJ0635

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				MSE
2	Date and time of receipt at lab	✓				10/27/11 13:50
3	Received by	✓				C Flores
4	Temperature blank or cooler temperature				✓	Temp. N/A °C.
5	Were the sample(s) received on ice				✓	NO
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested				✓	WOOT
12	Did an SVL employee preserve sample(s) upon receipt				✓	
12	Type of container for each sample / volume received	✓				
13	Analysis requested for each sample	✓				
14	Sample matrix description	✓				
15	COC properly completed & legible	✓				
16	Corrections properly made (initials & date)				✓	
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
18	Shipper's air bill				✓	CITY PARCEL

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: _____

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0635**
Reported: 01-Nov-11 15:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
LMRAWW1	W1J0635-01	Other	16-Oct-11 16:45	BL	27-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0635**
Reported: 01-Nov-11 15:47

Client Sample ID: **LMRAWW1**
SVL Sample ID: **W1J0635-01 (Other)**

Sample Report Page 1 of 1

Sampled: 16-Oct-11 16:45
Received: 27-Oct-11
Sampled By: BL

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W144302	AS	10/31/11 17:55	
EPA 6010B	**Barium**	8.06	mg/kg	0.200	0.024		W144302	AS	10/31/11 17:55	
EPA 6010B	**Cadmium**	1.33	mg/kg	0.20	0.02		W144302	AS	10/31/11 17:55	
EPA 6010B	Chromium	< 0.60	mg/kg	0.60	0.05		W144302	AS	10/31/11 17:55	
EPA 6010B	**Copper**	7.80	mg/kg	1.00	0.21		W144302	AS	10/31/11 17:55	
EPA 6010B	**Lead**	303	mg/kg	0.75	0.21		W144302	AS	10/31/11 17:55	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W144302	AS	10/31/11 17:55	
EPA 6010B	**Silver**	1.88	mg/kg	0.50	0.04		W144302	AS	10/31/11 17:55	
EPA 6010B	**Zinc**	224	mg/kg	1.00	0.09		W144302	AS	10/31/11 17:55	
EPA 7471A	**Mercury**	0.390	mg/kg	0.033	0.007		W145016	JAA	10/31/11 13:26	
Percent Solids										
Percent Solids	**% Solids**	75.7	%	0.1			W144304	DP	10/31/11 11:04	
TCLP Extraction Parameters										
EPA 1311	**% Dry Solids**	63.8	%				W144271	ESB	10/31/11 10:55	
EPA 1311	**Final pH**	4.93	pH Units				W144271	ESB	10/31/11 10:55	
TCLP Leachates (Metals)										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W145044	TJK	11/01/11 12:25	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0004		W145044	TJK	11/01/11 12:25	
EPA 6010B	**Cadmium**	0.0147	mg/L Extract	0.0100	0.0005		W145044	TJK	11/01/11 12:25	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0006		W145044	TJK	11/01/11 12:25	
EPA 6010B	**Copper**	0.092	mg/L Extract	0.050	0.003		W145044	TJK	11/01/11 12:25	
EPA 6010B	**Lead**	1.56	mg/L Extract	0.0500	0.0034		W145044	TJK	11/01/11 12:25	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.009		W145044	TJK	11/01/11 12:25	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0005		W145044	TJK	11/01/11 12:25	
EPA 6010B	**Zinc**	2.41	mg/L Extract	0.0500	0.0021		W145044	TJK	11/01/11 12:25	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000072		W145100	JAA	11/01/11 11:50	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.



John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0635**
Reported: 01-Nov-11 15:47

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods								
EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	<0.200	0.024	0.200	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	<0.20	0.02	0.20	W144302	31-Oct-11	
EPA 6010B	Chromium	mg/kg	<0.60	0.05	0.60	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	<1.00	0.21	1.00	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	<0.75	0.21	0.75	W144302	31-Oct-11	
EPA 6010B	Selenium	mg/kg	<4.0	1.2	4.0	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	<0.50	0.04	0.50	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	<1.00	0.09	1.00	W144302	31-Oct-11	
EPA 7471A	Mercury	mg/kg	<0.033	0.007	0.033	W145016	31-Oct-11	
TCLP Extraction Parameters								
EPA 1311	Final pH	pH Units	4.93			W144271	31-Oct-11	
EPA 1311	% Dry Solids	%	0.00			W144271	31-Oct-11	
TCLP Leachates (Metals)								
EPA 6010B	Arsenic	mg/L Extract	<0.050	0.007	0.050	W145044	01-Nov-11	
EPA 6010B	Barium	mg/L Extract	<1.00	0.0004	1.00	W145044	01-Nov-11	
EPA 6010B	Cadmium	mg/L Extract	<0.0100	0.0005	0.0100	W145044	01-Nov-11	
EPA 6010B	Chromium	mg/L Extract	<0.0500	0.0006	0.0500	W145044	01-Nov-11	
EPA 6010B	Copper	mg/L Extract	<0.050	0.003	0.050	W145044	01-Nov-11	
EPA 6010B	Lead	mg/L Extract	<0.0500	0.0034	0.0500	W145044	01-Nov-11	
EPA 6010B	Selenium	mg/L Extract	<0.050	0.009	0.050	W145044	01-Nov-11	
EPA 6010B	Silver	mg/L Extract	<0.0500	0.0005	0.0500	W145044	01-Nov-11	
EPA 6010B	Zinc	mg/L Extract	<0.0500	0.0021	0.0500	W145044	01-Nov-11	
EPA 7470A	Mercury	mg/L Extract	<0.00020	0.000072	0.00020	W145100	01-Nov-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods									
EPA 6010B	Arsenic	mg/kg	93.3	100	93.3	80 - 120	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	97.8	100	97.8	80 - 120	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	94.3	100	94.3	80 - 120	W144302	31-Oct-11	
EPA 6010B	Chromium	mg/kg	97.9	100	97.9	80 - 120	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	97.6	100	97.6	80 - 120	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	94.5	100	94.5	80 - 120	W144302	31-Oct-11	
EPA 6010B	Selenium	mg/kg	89.7	100	89.7	80 - 120	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	4.77	5.00	95.3	80 - 120	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	94.0	100	94.0	80 - 120	W144302	31-Oct-11	
EPA 7471A	Mercury	mg/kg	0.878	0.833	105	80 - 120	W145016	31-Oct-11	
TCLP Leachates (Metals)									
EPA 6010B	Arsenic	mg/L Extract	1.03	1.00	103	80 - 120	W145044	01-Nov-11	
EPA 6010B	Barium	mg/L Extract	18.5	20.0	92.5	80 - 120	W145044	01-Nov-11	
EPA 6010B	Cadmium	mg/L Extract	0.187	0.200	93.7	80 - 120	W145044	01-Nov-11	
EPA 6010B	Chromium	mg/L Extract	0.986	1.00	98.6	80 - 120	W145044	01-Nov-11	
EPA 6010B	Copper	mg/L Extract	1.07	1.00	107	80 - 120	W145044	01-Nov-11	
EPA 6010B	Lead	mg/L Extract	0.894	1.00	89.4	80 - 120	W145044	01-Nov-11	
EPA 6010B	Selenium	mg/L Extract	0.215	0.200	108	80 - 120	W145044	01-Nov-11	
EPA 6010B	Silver	mg/L Extract	1.11	1.00	111	80 - 120	W145044	01-Nov-11	
EPA 6010B	Zinc	mg/L Extract	0.967	1.00	96.7	80 - 120	W145044	01-Nov-11	
EPA 7470A	Mercury	mg/L Extract	0.00538	0.00500	108	80 - 120	W145100	01-Nov-11	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0635**
Reported: 01-Nov-11 15:47

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	mg/kg	127	37.0	100	90.1	75 - 125	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	140	38.7	100	101	75 - 125	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	91.0	<0.20	100	90.9	75 - 125	W144302	31-Oct-11	
EPA 6010B	Chromium	mg/kg	101	14.0	100	87.2	75 - 125	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	100	4.26	100	96.1	75 - 125	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	96.8	5.21	100	91.6	75 - 125	W144302	31-Oct-11	
EPA 6010B	Selenium	mg/kg	88.7	<4.0	100	86.5	75 - 125	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	4.70	<0.50	5.00	93.9	75 - 125	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	116	23.9	100	92.3	75 - 125	W144302	31-Oct-11	
EPA 7471A	Mercury	mg/kg	0.827	0.668	0.167	95.0	75 - 125	W145016	31-Oct-11	
TCLP Leachates (Metals)										
EPA 6010B	Arsenic	mg/L Extract	1.07	<0.050	1.00	107	75 - 125	W145044	01-Nov-11	
EPA 6010B	Barium	mg/L Extract	19.1	<1.00	20.0	94.2	75 - 125	W145044	01-Nov-11	
EPA 6010B	Cadmium	mg/L Extract	0.205	0.0147	0.200	95.2	75 - 125	W145044	01-Nov-11	
EPA 6010B	Chromium	mg/L Extract	1.02	<0.0500	1.00	102	75 - 125	W145044	01-Nov-11	
EPA 6010B	Copper	mg/L Extract	1.20	0.092	1.00	110	75 - 125	W145044	01-Nov-11	
EPA 6010B	Lead	mg/L Extract	2.45	1.56	1.00	89.4	75 - 125	W145044	01-Nov-11	
EPA 6010B	Selenium	mg/L Extract	0.236	<0.050	0.200	110	75 - 125	W145044	01-Nov-11	
EPA 6010B	Silver	mg/L Extract	1.14	<0.0500	1.00	114	75 - 125	W145044	01-Nov-11	
EPA 6010B	Zinc	mg/L Extract	3.27	2.41	1.00	86.0	75 - 125	W145044	01-Nov-11	
EPA 7470A	Mercury	mg/L Extract	0.00115	<0.00020	0.00100	105	70 - 130	W145100	01-Nov-11	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	mg/kg	135	127	100	6.1	20	W144302	31-Oct-11	
EPA 6010B	Barium	mg/kg	145	140	100	3.7	20	W144302	31-Oct-11	
EPA 6010B	Cadmium	mg/kg	91.8	91.0	100	0.9	20	W144302	31-Oct-11	
EPA 6010B	Chromium	mg/kg	103	101	100	1.6	20	W144302	31-Oct-11	
EPA 6010B	Copper	mg/kg	101	100	100	1.0	20	W144302	31-Oct-11	
EPA 6010B	Lead	mg/kg	97.5	96.8	100	0.7	20	W144302	31-Oct-11	
EPA 6010B	Selenium	mg/kg	89.5	88.7	100	0.8	20	W144302	31-Oct-11	
EPA 6010B	Silver	mg/kg	4.74	4.70	5.00	0.9	20	W144302	31-Oct-11	
EPA 6010B	Zinc	mg/kg	116	116	100	0.5	20	W144302	31-Oct-11	
EPA 7471A	Mercury	mg/kg	0.730	0.827	0.167	12.4	20	W145016	31-Oct-11	M2
TCLP Leachates (Metals)										
EPA 6010B	Arsenic	mg/L Extract	1.06	1.07	1.00	1.1	20	W145044	01-Nov-11	
EPA 6010B	Barium	mg/L Extract	18.8	19.1	20.0	1.2	20	W145044	01-Nov-11	
EPA 6010B	Cadmium	mg/L Extract	0.202	0.205	0.200	1.6	20	W145044	01-Nov-11	
EPA 6010B	Chromium	mg/L Extract	1.01	1.02	1.00	1.1	20	W145044	01-Nov-11	
EPA 6010B	Copper	mg/L Extract	1.19	1.20	1.00	0.1	20	W145044	01-Nov-11	
EPA 6010B	Lead	mg/L Extract	2.45	2.45	1.00	0.0	20	W145044	01-Nov-11	
EPA 6010B	Selenium	mg/L Extract	0.221	0.236	0.200	6.6	20	W145044	01-Nov-11	
EPA 6010B	Silver	mg/L Extract	1.15	1.14	1.00	0.4	20	W145044	01-Nov-11	
EPA 6010B	Zinc	mg/L Extract	3.32	3.27	1.00	1.6	20	W145044	01-Nov-11	
EPA 7470A	Mercury	mg/L Extract	0.00112	0.00115	0.00100	2.6	20	W145100	01-Nov-11	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0635**
Reported: 01-Nov-11 15:47

Notes and Definitions

M2	Matrix spike recovery was low, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

WIJ0680

Page 1 of 1

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt: N/A

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other _____

Report to Company: MSE
Contact: Bob LambeTL
Address: 12402 N. Div. ST. #333
Spokane, WA 99218
Phone Number: (509) 467-4081
FAX Number: "
E-mail: blambetl@mse-env.com

Invoice Sent To: Same
Contact:
Address:
Phone Number:
FAX Number:
PO#:

Project Name: Longshot Mine RA
Sampler's Signature: RA Lambetl

Indicate State of sample origination: WA **USACE?** ☐ Yes ☒ No

	Sample ID (Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, Ø and O. Thanks!)	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: RCRA B Total Metals	Analyses Required: Cu, Zn	Rush Instructions (Days)	Comments
1	WR1CS-1	10-29-11	1:10	RLA	3	1	X							✓	✓	1	All are soil samples!
2	WR1CS-2	10-29-11	1:10	RLA	3	1	X							✓	✓	1	ditto
3	OBCS-1	10-29-11	1:25	RLA	3	1	X							✓	✓	1	
4	OBCS-2	10-29-11	1:25	RLA	3	1	X							✓	✓	1	
5	MillCS-1	10-29-11		RLA	3	1	X							✓	✓	1	
* 6	MillCS-2	10-29-11		RLA	3	1	X							✓	✓	1	
7																	
8																	
9																	
10																	

Relinquished by: RA Lambetl Date: 10-31-11 Time: 8:00 Received by: [signature] Date: 10/31/11 Time: 10:20
Relinquished by: Date: Time: Received by: Date: Time:

SVL-COC 9/0

White: LAB COPY Yellow: CUSTOMER COPY

* Sample Reject: ☐ Return ☐ Dispose ☒ Store (30 Days)

* SAMPLE ID ON BAG READS MILL CS-2, SAMPLE ID ON SVL LABEL ON BAG READS MILL CS-1. SVL WILL GO BY ID WRITTEN ON BAG. CF 10/31/11

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 10/31/11 **By:** CRSeery

SVL Work No: WIJ0680

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				MSE-SPOKANE
2	Date and time of receipt at lab	✓				10/31/11 10:20
3	Received by	✓				AGlopez
4	Temperature blank or cooler temperature				✓	Temp. N/A °C.
5	Were the sample(s) received on ice				✓	
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested				✓	Solids
12	Did an SVL employee preserve sample(s) upon receipt				✓	
12	Type of container for each sample / volume received	✓				
13	Analysis requested for each sample	✓				
14	Sample matrix description	✓				
15	COC properly completed & legible	✓				
16	Corrections properly made (initials & date)				✓	
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
18	Shipper's air bill				✓	WALK-IN

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: _____

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WR3CS-1	W1J0680-01	Soil	29-Oct-11 13:10	31-Oct-2011
WR3CS-2	W1J0680-02	Soil	29-Oct-11 13:10	31-Oct-2011
OBCS-1	W1J0680-03	Soil	29-Oct-11 13:25	31-Oct-2011
OBCS-2	W1J0680-04	Soil	29-Oct-11 13:25	31-Oct-2011
MILL CS-1	W1J0680-05	Soil	29-Oct-11 00:00	31-Oct-2011
MILL CS-2	W1J0680-06	Soil	29-Oct-11 00:00	31-Oct-2011

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Client Sample ID: **WR3CS-1**
SVL Sample ID: **W1J0680-01 (Soil)**

Sampled: 29-Oct-11 13:10
Received: 31-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	6.6	mg/kg	2.5	0.4		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Barium**	57.3	mg/kg	0.200	0.024		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Cadmium**	6.52	mg/kg	0.20	0.02		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Chromium**	26.0	mg/kg	0.60	0.05		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Copper**	23.8	mg/kg	1.00	0.21		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Lead**	305	mg/kg	0.75	0.21		W145051	TJK	11/01/11 13:51	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Silver**	1.79	mg/kg	0.50	0.04		W145051	TJK	11/01/11 13:51	
EPA 6010B	**Zinc**	1060	mg/kg	1.00	0.09		W145051	TJK	11/01/11 13:51	
EPA 7471A	**Mercury**	0.043	mg/kg	0.033	0.007		W145098	JAA	11/01/11 10:54	
Percent Solids										
Percent Solids	**% Solids**	85.8	%	0.1			W145052	DP	11/01/11 11:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Client Sample ID: **WR3CS-2**
SVL Sample ID: **W1J0680-02 (Soil)**

Sampled: 29-Oct-11 13:10
Received: 31-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	5.6	mg/kg	2.5	0.4		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Barium**	60.1	mg/kg	0.200	0.024		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Cadmium**	7.12	mg/kg	0.20	0.02		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Chromium**	30.2	mg/kg	0.60	0.05		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Copper**	48.6	mg/kg	1.00	0.21		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Lead**	2600	mg/kg	0.75	0.21		W145051	TJK	11/01/11 14:08	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Silver**	10.2	mg/kg	0.50	0.04		W145051	TJK	11/01/11 14:08	
EPA 6010B	**Zinc**	1080	mg/kg	1.00	0.09		W145051	TJK	11/01/11 14:08	
EPA 7471A	**Mercury**	0.040	mg/kg	0.033	0.007		W145098	JAA	11/01/11 10:59	
Percent Solids										
Percent Solids	**% Solids**	86.3	%	0.1			W145052	DP	11/01/11 11:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Client Sample ID: **OBCS-1**
SVL Sample ID: **W1J0680-03 (Soil)**

Sampled: 29-Oct-11 13:25
Received: 31-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	10.1	mg/kg	2.5	0.4		W145051	TJK	11/01/11 14:14	
EPA 6010B	**Barium**	59.0	mg/kg	0.200	0.024		W145051	TJK	11/01/11 14:13	
EPA 6010B	**Cadmium**	5.90	mg/kg	0.20	0.02		W145051	TJK	11/01/11 14:14	
EPA 6010B	**Chromium**	38.7	mg/kg	0.60	0.05		W145051	TJK	11/01/11 14:13	
EPA 6010B	**Copper**	86.9	mg/kg	1.00	0.21		W145051	TJK	11/01/11 14:13	
EPA 6010B	**Lead**	706	mg/kg	0.75	0.21		W145051	TJK	11/01/11 14:13	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W145051	TJK	11/01/11 14:14	
EPA 6010B	**Silver**	16.2	mg/kg	0.50	0.04		W145051	TJK	11/01/11 14:13	
EPA 6010B	**Zinc**	1130	mg/kg	1.00	0.09		W145051	TJK	11/01/11 14:13	
EPA 7471A	**Mercury**	0.038	mg/kg	0.033	0.007		W145098	JAA	11/01/11 11:00	
Percent Solids										
Percent Solids	**% Solids**	92.0	%	0.1			W145052	DP	11/01/11 11:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Client Sample ID: **OBCS-2**
SVL Sample ID: **W1J0680-04 (Soil)**

Sampled: 29-Oct-11 13:25
Received: 31-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	13.0	mg/kg	2.5	0.4		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Barium**	29.2	mg/kg	0.200	0.024		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Cadmium**	4.71	mg/kg	0.20	0.02		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Chromium**	34.6	mg/kg	0.60	0.05		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Copper**	59.7	mg/kg	1.00	0.21		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Lead**	476	mg/kg	0.75	0.21		W145051	TJK	11/01/11 14:19	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Silver**	24.4	mg/kg	0.50	0.04		W145051	TJK	11/01/11 14:19	
EPA 6010B	**Zinc**	812	mg/kg	1.00	0.09		W145051	TJK	11/01/11 14:19	
EPA 7471A	Mercury	< 0.033	mg/kg	0.033	0.007		W145098	JAA	11/01/11 11:02	
Percent Solids										
Percent Solids	**% Solids**	90.2	%	0.1			W145052	DP	11/01/11 11:31	

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John Kern
Laboratory Director

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Client Sample ID: **MILL CS-1**
SVL Sample ID: **W1J0680-05 (Soil)**

Sampled: 29-Oct-11 00:00
Received: 31-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	8.3	mg/kg	2.5	0.4		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Barium**	74.7	mg/kg	0.200	0.024		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Cadmium**	4.32	mg/kg	0.20	0.02		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Chromium**	31.0	mg/kg	0.60	0.05		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Copper**	323	mg/kg	1.00	0.21		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Lead**	1590	mg/kg	0.75	0.21		W145051	TJK	11/01/11 14:24	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Silver**	20.5	mg/kg	0.50	0.04		W145051	TJK	11/01/11 14:24	
EPA 6010B	**Zinc**	881	mg/kg	1.00	0.09		W145051	TJK	11/01/11 14:24	
EPA 7471A	**Mercury**	0.062	mg/kg	0.033	0.007		W145098	JAA	11/01/11 11:03	
Percent Solids										
Percent Solids	**% Solids**	87.2	%	0.1			W145052	DP	11/01/11 11:31	

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Laboratory Director

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Client Sample ID: **MILL CS-2**
SVL Sample ID: **W1J0680-06 (Soil)**

Sampled: 29-Oct-11 00:00
Received: 31-Oct-11
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	**Arsenic**	9.1	mg/kg	2.5	0.4		W145051	TJK	11/01/11 14:30	
EPA 6010B	**Barium**	85.4	mg/kg	0.200	0.024		W145051	TJK	11/01/11 14:29	
EPA 6010B	**Cadmium**	3.13	mg/kg	0.20	0.02		W145051	TJK	11/01/11 14:30	
EPA 6010B	**Chromium**	41.6	mg/kg	0.60	0.05		W145051	TJK	11/01/11 14:29	
EPA 6010B	**Copper**	51.6	mg/kg	1.00	0.21		W145051	TJK	11/01/11 14:29	
EPA 6010B	**Lead**	789	mg/kg	0.75	0.21		W145051	TJK	11/01/11 14:29	
EPA 6010B	Selenium	< 4.0	mg/kg	4.0	1.2		W145051	TJK	11/01/11 14:30	
EPA 6010B	**Silver**	6.99	mg/kg	0.50	0.04		W145051	TJK	11/01/11 14:29	
EPA 6010B	**Zinc**	571	mg/kg	1.00	0.09		W145051	TJK	11/01/11 14:29	
EPA 7471A	Mercury	< 0.033	mg/kg	0.033	0.007		W145098	JAA	11/01/11 11:05	
Percent Solids										
Percent Solids	**% Solids**	87.2	%	0.1			W145052	DP	11/01/11 11:31	

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John Kern
Laboratory Director

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods								
EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W145051	01-Nov-11	
EPA 6010B	Barium	mg/kg	<0.200	0.024	0.200	W145051	01-Nov-11	
EPA 6010B	Cadmium	mg/kg	<0.20	0.02	0.20	W145051	01-Nov-11	
EPA 6010B	Chromium	mg/kg	<0.60	0.05	0.60	W145051	01-Nov-11	
EPA 6010B	Copper	mg/kg	<1.00	0.21	1.00	W145051	01-Nov-11	
EPA 6010B	Lead	mg/kg	<0.75	0.21	0.75	W145051	01-Nov-11	
EPA 6010B	Selenium	mg/kg	<4.0	1.2	4.0	W145051	01-Nov-11	
EPA 6010B	Silver	mg/kg	<0.50	0.04	0.50	W145051	01-Nov-11	
EPA 6010B	Zinc	mg/kg	<1.00	0.09	1.00	W145051	01-Nov-11	
EPA 7471A	Mercury	mg/kg	<0.033	0.007	0.033	W145098	01-Nov-11	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods									
EPA 6010B	Arsenic	mg/kg	94.5	100	94.5	80 - 120	W145051	01-Nov-11	
EPA 6010B	Barium	mg/kg	95.1	100	95.1	80 - 120	W145051	01-Nov-11	
EPA 6010B	Cadmium	mg/kg	92.4	100	92.4	80 - 120	W145051	01-Nov-11	
EPA 6010B	Chromium	mg/kg	95.2	100	95.2	80 - 120	W145051	01-Nov-11	
EPA 6010B	Copper	mg/kg	95.9	100	95.9	80 - 120	W145051	01-Nov-11	
EPA 6010B	Lead	mg/kg	92.9	100	92.9	80 - 120	W145051	01-Nov-11	
EPA 6010B	Selenium	mg/kg	89.7	100	89.7	80 - 120	W145051	01-Nov-11	
EPA 6010B	Silver	mg/kg	4.79	5.00	95.8	80 - 120	W145051	01-Nov-11	
EPA 6010B	Zinc	mg/kg	89.9	100	89.9	80 - 120	W145051	01-Nov-11	
EPA 7471A	Mercury	mg/kg	0.782	0.833	93.8	80 - 120	W145098	01-Nov-11	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	mg/kg	174	75.8	100	98.1	75 - 125	W145051	01-Nov-11	
EPA 6010B	Barium	mg/kg	112	7.63	100	104	75 - 125	W145051	01-Nov-11	
EPA 6010B	Cadmium	mg/kg	95.2	<0.20	100	95.2	75 - 125	W145051	01-Nov-11	
EPA 6010B	Chromium	mg/kg	102	3.22	100	98.9	75 - 125	W145051	01-Nov-11	
EPA 6010B	Copper	mg/kg	524	418	100	106	75 - 125	W145051	01-Nov-11	M3
EPA 6010B	Lead	mg/kg	99.7	2.21	100	97.5	75 - 125	W145051	01-Nov-11	
EPA 6010B	Selenium	mg/kg	96.5	<4.0	100	95.2	75 - 125	W145051	01-Nov-11	
EPA 6010B	Silver	mg/kg	5.39	<0.50	5.00	102	75 - 125	W145051	01-Nov-11	
EPA 6010B	Zinc	mg/kg	111	12.8	100	97.9	75 - 125	W145051	01-Nov-11	
EPA 7471A	Mercury	mg/kg	0.210	0.053	0.167	94.0	75 - 125	W145098	01-Nov-11	

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MSE (Spokane)
12720 N. Division St. #333
Spokane, WA 99218

Project Name: Longshot Mine
Work Order: **W1J0680**
Reported: 01-Nov-11 15:10

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
Metals (Total) by EPA 6000/7000 Methods										
EPA 6010B	Arsenic	mg/kg	162	174	100	7.0	20	W145051	01-Nov-11	
EPA 6010B	Barium	mg/kg	112	112	100	0.3	20	W145051	01-Nov-11	
EPA 6010B	Cadmium	mg/kg	95.9	95.2	100	0.6	20	W145051	01-Nov-11	
EPA 6010B	Chromium	mg/kg	102	102	100	0.3	20	W145051	01-Nov-11	
EPA 6010B	Copper	mg/kg	407	524	100	25.2	20	W145051	01-Nov-11	
EPA 6010B	Lead	mg/kg	99.4	99.7	100	0.4	20	W145051	01-Nov-11	
EPA 6010B	Selenium	mg/kg	97.1	96.5	100	0.6	20	W145051	01-Nov-11	
EPA 6010B	Silver	mg/kg	5.35	5.39	5.00	0.6	20	W145051	01-Nov-11	
EPA 6010B	Zinc	mg/kg	111	111	100	0.0	20	W145051	01-Nov-11	
EPA 7471A	Mercury	mg/kg	0.198	0.210	0.167	5.7	20	W145098	01-Nov-11	

Notes and Definitions

M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable