TABLE 4-1

Reference Area 1 (Upgradient of the Mine) Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	14	14	100	24200	57900	55250	**94000**	*60,000*	*76,000*	mg/kg
Antimony	11	14	79	0.195	0.4	0.33	0.96	*1.14*	*31*	mg/kg
Arsenic	14	14	100	5.2	21	12	**95.3**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	14	14	100	165	409	381	851	*437*	*5,400*	mg/kg
Beryllium	14	14	100	0.31	0.748	0.732	1.22	*1.25*	*150*	mg/kg
Cadmium	14	14	100	0.16	0.27	0.26	0.418	*0.30*	*9*	mg/kg
Chromium	14	14	100	13.2	22.9	22.3	31.9	*48.6*	*210*	mg/kg
Cobalt	14	14	100	6.66	12	10.95	16	*15.5*	*4,700*	mg/kg
Copper	14	14	100	18.5	31.9	26	72.2	*77.1*	*2,900*	mg/kg
Cyanide	8	14	57	0.1	0.3	0.3	0.8	*0.30*	*11*	mg/kg
Lead	14	14	100	14.8	27.7	25.35	53.6	*26.9*	*400*	mg/kg
Manganese	14	14	100	561	1320	1175	**2830**	*1,310*	*1,800*	mg/kg
Mercury	14	14	100	0.04	0.09	0.09	0.17	*0.13*	*23*	mg/kg
Nickel	14	14	100	10.1	17	17.8	22.1	*42.0*	*150*	mg/kg
Selenium	3	14	21	0.2	0.4	0.3	0.7	*0.42*	*390*	mg/kg
Silver	14	14	100	0.1	0.2	0.2	0.49	*0.25*	*390*	mg/kg
Thallium	14	14	100	0.08	0.22	0.203	0.347	*0.24*	*5.2*	mg/kg
Vanadium	14	14	100	34.8	82.5	72.8	138	*159*	*550*	mg/kg
Zinc	14	14	100	60	72	67	126	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks. '

TABLE 4-2

Reference Area 1 (Little Clipper Creek Upstream of the Mine) Summary Statistics - Sediment

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	7	7	100	31900	46000	47900	56600	*60,000*	*76,000*	mg/kg
Antimony	3	7	43	0.22	0.68	0.36	1.6	*1.14*	*31*	mg/kg
Arsenic	7	7	100	17.9	**25.8**	22.4	**44.3**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	7	7	100	257	336	327	392	*437*	*5,400*	mg/kg
Beryllium	7	7	100	0.88	1.1	1.1	1.5	*1.25*	*150*	mg/kg
Cadmium	7	7	100	0.21	0.29	0.29	0.345	*0.30*	*9*	mg/kg
Chromium	7	7	100	24.8	30.2	31	38.6	*48.6*	*210*	mg/kg
Cobalt	7	7	100	10.1	12.6	12.6	15.5	*15.5*	*4,700*	mg/kg
Copper	7	7	100	33.3	49.7	53.6	61.1	*77.1*	*2,900*	mg/kg
Cyanide	1	7	14	0.1	0.1	0.1	0.2	*0.30*	*11*	mg/kg
Lead	7	7	100	13	16	16	18.7	*26.9*	*400*	mg/kg
Manganese	7	7	100	473	767	775	1200	*1,310*	*1,800*	mg/kg
Mercury	7	7	100	0.01	0.1	0.05	0.46	*0.13*	*23*	mg/kg
Nickel	7	7	100	17.2	21.7	23	24.7	*42.0*	*150*	mg/kg
Selenium	2	7	29	0.2	0.4	0.3	0.7	*0.42*	*390*	mg/kg
Silver	7	7	100	0.15	0.24	0.23	0.37	*0.25*	*390*	mg/kg
Thallium	7	7	100	0.14	0.22	0.23	0.321	*0.24*	*5.2*	mg/kg
Vanadium	7	7	100	73	88	84	102	*159*	*550*	mg/kg
Zinc	7	7	100	55.6	72.4	74	83.1	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks. '

TABLE 4-3

Reference Area 1 (Little Clipper Creek Upstream of the Mine) Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	6	6	100	30.2	119	110.2	220	*1,000*	ug/L
Antimony	3	6	50	0.01	0.03	0.02	0.08	*6*	ug/L
Arsenic	6	6	100	0.2	0.3	0.3	0.5	*50*	ug/L
Barium	6	6	100	16.7	19.2	19.2	21.6	*1,000*	ug/L
Beryllium	0	6	0	N/A	N/A	N/A	N/A	*4*	ug/L
Cadmium	0	6	0	N/A	N/A	N/A	N/A	*5*	ug/L
Chromium	0	6	0	N/A	N/A	N/A	N/A	*50*	ug/L
Cobalt	6	6	100	0.03	0.10	0.11	0.17	*None*	ug/L
Copper	6	6	100	0.08	0.66	0.61	1.42	*1300*	ug/L
Cyanide	0	6	0	N/A	N/A	N/A	N/A	*200*	ug/L
Lead	3	6	50	0.005	0.08	0.07	0.18	*15*	ug/L
Manganese	6	6	100	0.25	3.5	3.5	6.77	*None*	ug/L
Mercury	3	6	50	0.25	1.8	1.6	4	*2,000*	ng/L
Nickel	1	6	17	0.09	0.45	0.14	2.02	*100*	ug/L
Selenium	0	6	0	N/A	N/A	N/A	N/A	*50*	ug/L
Silver	1	6	17	0.0035	0.01	0.007	0.03	*None*	ug/L
Thallium	0	6	0	N/A	N/A	N/A	N/A	*2*	ug/L
Vanadium	3	6	50	0.28	0.5	0.5	0.8	*None*	ug/L
Zinc	4	6	67	0.24	0.59	0.38	1.34	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

[2] Non-detect results are incorporated into the statistics using one-half of the detection limit.

Table 4-4

Reference Area 1 (Upgradient of the Mine) Summary Statistics - Groundwater

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Alkalinity	3	3	100	138	155	148	180	*None*	mg/L
Aluminum	4	4	100	108	237	145	549	*1,000*	ug/L
Antimony	4	4	100	1.04	3.17	2.89	5.85	*6*	ug/L
Arsenic	4	4	100	7	23.60	25.35	36.7	*50*	ug/L
Barium	4	4	100	22	88	82	166	*1,000*	ug/L
Beryllium	2	4	50	0.01	0.07	0.04	0.20	*4*	ug/L
Cadmium	4	4	100	0.09	0.15	0.15	0.22	*50*	ug/L
Calcium	4	4	100	15900	24925	22600	38600	*None*	ug/L
Chloride	3	3	100	2.7	9.33	11	14.30	*None*	mg/L
Chromium	2	4	50	0.30	3.63	3.40	7.42	*50*	ug/L
Cobalt	4	4	100	0.17	0.36	0.27	0.74	*None*	ug/L
Copper	4	4	100	0.68	2.06	1.35	4.86	*1,300*	ug/L
Cyanide	0	3	0	N/A	N/A	N/A	N/A	*200*	ug/L
Hardness	3	3	100	76	85.67	90	91	*None*	mg/L
Iron	4	4	100	51.30	307.83	136	908	*None*	ug/L
Lead	3	4	75	0.10	0.42	0.17	1.25	*15*	ug/L
Magnesium	4	4	100	7410	10558	8510	17800	*None*	ug/L
Manganese	4	4	100	32	115	65	296	*None*	ug/L
Mercury	2	4	50	0.5	2.1	1.5	5	*2,000*	ng/L
Nickel	4	4	100	1.7	3.4	3.1	5.7	*100*	ug/L
Orthophosphate	2	3	67	0.05	1.12	1.00	2.3	*None*	mg/L
Potassium	3	4	75	2730	6338	5160	12300	*None*	ug/L
Selenium	1	4	25	1	2	2	3	*50*	ug/L
Silver	0	4	0	N/A	N/A	N/A	N/A	*None*	ug/L
Sodium	4	4	100	12600	62825	61850	115000	*None*	ug/L
Sulfate	3	3	100	0.2	28.7	40.1	45.9	*None*	mg/L
TDS	3	3	100	269	322	296.0	400	*None*	mg/L
Thallium	0	4	0	N/A	N/A	N/A	N/A	*2*	ug/L
Vanadium	4	4	100	0.6	5.8	5.8	10.9	*None*	ug/L
Zinc	3	4	75	2.6	16.5	8.5	46.5	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard

mg/L = milligrams of analyte per liter of water

ug/L = micrograms of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-5

Reference Area 1 Ambient Air Results

Lava Cap Mine, Nevada County, California

Sample Location:	**No. 1G Upgradient - In Clearing Near MW1B**		***EPA Region IX Air PRG [1]***	
Sample Collection:	**Round 1**			
Sample Date:	**10/26/1999**			
Analyte	**Result**	**Flag**	***Value***	**Units[2]**
ALUMINUM	5.5	U	*5.1*	UG/M^2
ANTIMONY	0.0014	U	*0.21*	UG/M^2
ARSENIC	0.042	U	*0.00045*	UG/M^2
BARIUM	1.0	U	*0.52*	UG/M^2
BERYLLIUM	0.0028	U	*0.0008*	UG/M^2
CADMIUM	0.0028	U	*0.0011*	UG/M^2
CALCIUM	1.1	U		UG/M^2
CHROMIUM, TOTAL	0.084	U	*0.00016*	UG/M^2
COBALT	0.0070		*0.021*	UG/M^2
COPPER	0.014	U		UG/M^2
IRON	3.8			UG/M^2
LEAD	0.0084	U		UG/M^2
MAGNESIUM	0.45	U		UG/M^2
MANGANESE	0.094	U	*0.051*	UG/M^2
NICKEL	**0.014**	**J**	*0.004*	UG/M^2
POTASSIUM	28	U		UG/M^2
SELENIUM	0.070	U		UG/M^2
SILVER	0.0028	U		UG/M^2
SODIUM	12	U		UG/M^2
THALLIUM	0.0028	U		UG/M^2
VANADIUM	0.084	U		UG/M^2
ZINC	0.50	U		UG/M^2
MERCURY	0.0028	U	*0.31*	UG/M^2
CYANIDE	NA		*3.1*	UG/M^2

Flags: U = non-detect, J = estimated

Bolded values indicate those analytes where detected concentrations exceed the ambient air PRG value.

NA Indicates that the analyte was not analyzed in this sample.

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

**UG/M^3 is micrograms per cubic meter of air.

TABLE 4-6

Reference Area 2 (Clipper Creek Upstream of the Confluence with Little Clipper Creek) Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	6	6	100	21600	36800	37050	51900	*60,000*	*76,000*	mg/kg
Antimony	6	6	100	0.65	1.0	1.1	1.37	*1.14*	*31*	mg/kg
Arsenic	6	6	100	7.6	13	12	20	*23.8*	*0.39/22 [3]*	mg/kg
Barium	6	6	100	114	226	233	322	*437*	*5,400*	mg/kg
Beryllium	6	6	100	0.66	1.1	1.1	1.46	*1.25*	*150*	mg/kg
Cadmium	6	6	100	0.11	0.25	0.27	0.39	*0.30*	*9*	mg/kg
Chromium	6	6	100	28.4	41.5	44.2	55.6	*48.6*	*210*	mg/kg
Cobalt	6	6	100	8.41	14.3	14.4	19.5	*15.5*	*4,700*	mg/kg
Copper	6	6	100	48.6	70.9	70.35	94.4	*77.1*	*2,900*	mg/kg
Cyanide	2	6	33	0.1	0.3	0.1	0.7	*0.30*	*11*	mg/kg
Lead	5	6	83	6.3	15	16	22.2	*26.9*	*400*	mg/kg
Manganese	6	6	100	571	1040	1004	1490	*1,310*	*1,800*	mg/kg
Mercury	6	6	100	0.04	0.07	0.08	0.09	*0.13*	*23*	mg/kg
Nickel	6	6	100	20.5	36.2	26.05	90.6	*42.0*	*150*	mg/kg
Selenium	0	6	0	N/A	N/A	N/A	N/A	*0.42*	*390*	mg/kg
Silver	6	6	100	0.08	0.18	0.19	0.28	*0.25*	*390*	mg/kg
Thallium	6	6	100	0.09	0.19	0.21	0.24	*0.24*	*5.2*	mg/kg
Vanadium	6	6	100	56.7	125	109	209	*159*	*550*	mg/kg
Zinc	6	6	100	47.7	78.6	82.5	102	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

[4] Non-detect results are incorporated into the statistics using one-half of the detection limit.

TABLE 4-7

Reference Area 2 (Clipper Creek Upstream of the Confluence with Little Clipper Creek) Summary Statistics - Sediment

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	6	6	100	24300	32000	29850	44100	*60,000*	*76,000*	mg/kg
Antimony	6	6	100	0.56	0.91	0.82	1.64	*1.14*	*31*	mg/kg
Arsenic	6	6	100	10.9	13	13	16	*23.8*	*0.39/22 [3]*	mg/kg
Barium	6	6	100	158	208	208.5	265	*437*	*5,400*	mg/kg
Beryllium	6	6	100	0.74	1.1	1.2	1.27	*1.25*	*150*	mg/kg
Cadmium	6	6	100	0.11	0.2	0.18	0.2	*0.30*	*9*	mg/kg
Chromium	6	6	100	39	47	46	55.4	*48.6*	*210*	mg/kg
Cobalt	6	6	100	8.35	12.6	12.75	16.2	*15.5*	*4,700*	mg/kg
Copper	6	6	100	55.7	67.8	66.4	78.9	*77.1*	*2,900*	mg/kg
Cyanide	1	6	17	0.1	0.2	0.13	0.3	*0.30*	*11*	mg/kg
Lead	6	6	100	7.55	10.8	10.9	14.8	*26.9*	*400*	mg/kg
Manganese	6	6	100	541	950	912	1300	*1,310*	*1,800*	mg/kg
Mercury	6	6	100	0.02	0.03	0.02	0.07	*0.13*	*23*	mg/kg
Nickel	6	6	100	15.7	26.6	24.4	49.4	*42.0*	*150*	mg/kg
Selenium	0	6	0	N/A	N/A	N/A	N/A	*0.42*	*390*	mg/kg
Silver	6	6	100	0.1	0.1	0.13	0.15	*0.25*	*390*	mg/kg
Thallium	6	6	100	0.08	0.13	0.13	0.17	*0.24*	*5.2*	mg/kg
Vanadium	6	6	100	122	142	139	176	*159*	*550*	mg/kg
Zinc	6	6	100	65.7	75	74	84	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks. '

TABLE 4-8

Reference Area 2 (Clipper Creek Upstream of the Confluence with Little Clipper Creek) Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	9	10	90	6.35	25.6	24.05	40.9	*1,000*	ug/L
Antimony	0	10	0	N/A	N/A	N/A	N/A	*6*	ug/L
Arsenic	7	10	70	0.1	0.3	0.1	1.1	*50*	ug/L
Barium	10	10	100	12.4	15.6	12.95	36.8	*1,000*	ug/L
Beryllium	0	10	0	N/A	N/A	N/A	N/A	*4*	ug/L
Cadmium	0	10	0	N/A	N/A	N/A	N/A	*5*	ug/L
Chromium	0	10	0	N/A	N/A	N/A	N/A	*50*	ug/L
Cobalt	10	10	100	0.02	0.27	0.03	2.46	*None*	ug/L
Copper	9	10	90	0.015	0.31	0.24	0.99	*1300*	ug/L
Cyanide	0	10	0	N/A	N/A	N/A	N/A	*200*	ug/L
Lead	6	10	60	0.005	0.02	0.01	0.06	*15*	ug/L
Manganese	9	10	90	0.32	68	1.4	647	*None*	ug/L
Mercury	0	10	0	N/A	N/A	N/A	N/A	*2,000*	ng/L
Nickel	1	10	10	0.06	0.15	0.10	0.3	*100*	ug/L
Selenium	0	10	0	N/A	N/A	N/A	N/A	*50*	ug/L
Silver	0	10	0	N/A	N/A	N/A	N/A	*None*	ug/L
Thallium	0	10	0	N/A	N/A	N/A	N/A	*2*	ug/L
Vanadium	7	10	70	0.33	0.62	0.59	1.4	*None*	ug/L
Zinc	5	10	50	0.1	0.4	0.4	0.95	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

[2] Non-detect results are incorporated into the statistics using one-half of the detection limit.

TABLE 4-9

Source Area Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	16	16	100	1380	10371	9685	18400	*60,000*	*76,000*	mg/kg
Antimony	16	16	100	0.57	**32.69**	12.06	**138**	*1.14*	*31*	mg/kg
Arsenic	16	16	100	**63.9**	**7895**	**2070**	**31200**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	16	16	100	30.6	123.26	89.6	256	*437*	*5,400*	mg/kg
Beryllium	16	16	100	0.11	0.58	0.46	1.52	*1.25*	*150*	mg/kg
Cadmium	16	16	100	0.09	**9.39**	1.7	**37.8**	*0.30*	*9*	mg/kg
Chromium	16	16	100	6.06	21.09	17.5	52.5	*48.6*	*210*	mg/kg
Cobalt	16	16	100	2.9	34.09	16.2	147	*15.5*	*4,700*	mg/kg
Copper	16	16	100	8.23	161.58	99.3	528	*77.1*	*2,900*	mg/kg
Cyanide	7	14	50	0.1	**64.14**	0.2	**419**	*0.30*	*11*	mg/kg
Iron	16	16	100	5090	52155	35600	**140000**	*55,400*	*23,000*	mg/kg
Lead	15	16	94	1.63	394.63	76	**2320**	*26.9*	*400*	mg/kg
Manganese	16	16	100	94.5	840.2	714	**2030**	*1,310*	*1,800*	mg/kg
Mercury	16	16	100	0.06	1.83	1.04	8.47	*0.13*	*23*	mg/kg
Nickel	16	16	100	5.1	93.53	42.4	**412**	*42.0*	*150*	mg/kg
Selenium	14	16	88	0.21	2.27	1.72	5.67	*0.42*	*390*	mg/kg
Silver	16	16	100	0.22	52.48	19.15	177	*0.25*	*390*	mg/kg
Thallium	15	16	94	0.02	0.16	0.11	0.75	*0.24*	*5.2*	mg/kg
Vanadium	16	16	100	4.9	28.74	23.7	92	*159*	*550*	mg/kg
Zinc	16	16	100	12	1814	227	9100	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-10

Source Area Summary Statistics - Subsurface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	22	22	100	2770	19305	21200	39900	*60,000*	*76,000*	mg/kg
Antimony	19	22	86	0.08	2.43	1.7	10.7	*1.14*	*31*	mg/kg
Arsenic	21	22	95	15.5	**603.08**	**232.5**	**5360**	*23.8*	*0.39/22 3*	mg/kg
Barium	22	22	100	19.4	129.72	89.1	477	*437*	*5,400*	mg/kg
Beryllium	22	22	100	0.13	0.54	0.52	0.96	*1.25*	*150*	mg/kg
Cadmium	20	22	91	0.035	0.54	0.27	2.86	*0.30*	*9*	mg/kg
Chromium	21	22	95	1.15	26.02	18.1	137	*48.6*	*210*	mg/kg
Cobalt	22	22	100	0.83	11.58	9.81	30.7	*15.5*	*4,700*	mg/kg
Copper	22	22	100	13.8	66.21	57.9	173	*77.1*	*2,900*	mg/kg
Cyanide	2	19	11	0.1	0.31	0.12	3.6	*0.30*	*11*	mg/kg
Iron	22	22	100	7610	35686	33250	**76600**	*55,400*	*23,000*	mg/kg
Lead	18	22	82	0.95	23.13	21.5	54.1	*26.9*	*400*	mg/kg
Manganese	22	22	100	15.3	752	648.5	**3190**	*1,310*	*1,800*	mg/kg
Mercury	21	22	95	0.01	0.23	0.13	1.21	*0.13*	*23*	mg/kg
Nickel	22	22	100	2.2	20.5	17	60.5	*42.0*	*150*	mg/kg
Selenium	9	22	41	0.23	0.87	0.3	3.66	*0.42*	*390*	mg/kg
Silver	22	22	100	0.05	2.97	1.73	12.2	*0.25*	*390*	mg/kg
Thallium	19	22	86	0.01	0.13	0.08	0.49	*0.24*	*5.2*	mg/kg
Vanadium	22	22	100	7.83	64.6	75.05	202	*159*	*550*	mg/kg
Zinc	21	22	95	6.65	96.52	79.05	227	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are risk-based concentrations used as tools to guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-11

Source Area Summary Statistics - Sediment

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	4	4	100	6650	11502.5	9930	19500	*60,000*	*76,000*	mg/kg
Antimony	4	4	100	1.43	5.6	4.28	12.4	*1.14*	*31*	mg/kg
Arsenic	4	4	100	**459**	**9201**	**1172.5**	**34000**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	4	4	100	53.6	188.8	108.8	484	*437*	*5,400*	mg/kg
Beryllium	4	4	100	0.33	0.92	0.41	2.53	*1.25*	*150*	mg/kg
Cadmium	4	4	100	0.58	3.14	1.3	**9.38**	*0.30*	*9*	mg/kg
Chromium	4	4	100	10.8	13.4	13.3	16.2	*48.6*	*210*	mg/kg
Cobalt	4	4	100	7.62	18.85	11.98	43.8	*15.5*	*4,700*	mg/kg
Copper	4	4	100	60.1	161.33	81.1	423	*77.1*	*2,900*	mg/kg
Cyanide	2	4	50	0.11	1.19	0.87	2.9	*0.30*	*11*	mg/kg
Iron	4	4	100	17900	**64675**	32400	**176000**	*55,400*	*23,000*	mg/kg
Lead	4	4	100	17.1	37	38.15	54.6	*26.9*	*400*	mg/kg
Manganese	4	4	100	374	973.25	979.5	1560	*1,310*	*1,800*	mg/kg
Mercury	4	4	100	0.22	0.62	0.41	1.44	*0.13*	*23*	mg/kg
Nickel	4	4	100	15.7	30.33	28.65	48.3	*42.0*	*150*	mg/kg
Selenium	3	4	75	0.94	2.3	2.3	3.67	*0.42*	*390*	mg/kg
Silver	4	4	100	3.54	6.64	5.57	11.9	*0.25*	*390*	mg/kg
Thallium	4	4	100	0.04	0.08	0.09	0.1	*0.24*	*5.2*	mg/kg
Vanadium	4	4	100	21.9	29.1	30.35	33.8	*159*	*550*	mg/kg
Zinc	4	4	100	68	389.5	200	1090	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-12

Source Area Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Alkalinity	29	29	100	21	113	112	296	*None*	mg/L
Aluminum	24	29	83	2.85	**2558**	54.1	**19800**	*1,000*	ug/L
Antimony	26	29	90	0.1	5.8	1.36	**96.3**	*6*	ug/L
Arsenic	29	29	100	23.6	**886.4**	**211**	**14300**	*50*	ug/L
Barium	29	29	100	4.4	94.07	45.3	853	*1,000*	ug/L
Beryllium	11	29	38	0.005	0.11	0.01	**1.35**	*4*	ug/L
Bromate	2	2	100	5	5	5	5	*10*	ug/L
Cadmium	28	29	97	0.03	2.73	0.06	**65**	*50*	ug/L
Calcium	29	29	100	9350	51296	48300	120000	*None*	ug/L
Chloride	23	29	79	0.25	1.23	1.1	4.4	*None*	mg/L
Chromium	14	29	48	0.05	3.46	0.6	42.6	*50*	ug/L
Cobalt	28	29	97	0.04	3.96	1.19	62.8	*None*	ug/L
Copper	29	29	100	0.63	98.67	1.79	**2420**	*1,300*	ug/L
Cyanide	4	26	15	1.5	3.85	1.5	53	*200*	ug/L
Hardness	27	30	90	22	173.48	181.5	344	*None*	mg/L
Iron	27	29	93	18.9	9410.7	961	117000	*None*	ug/L
Lead	27	29	93	0.01	**174.32**	0.45	**4440**	*15*	ug/L
Magnesium	29	29	100	1870	9215	9120	23300	*None*	ug/L
Manganese	29	29	100	0.7	270.24	185	1450	*None*	ug/L
Mercury	21	29	72	1	336.9	5	**5040**	*2,000*	ng/L
Nickel	29	29	100	0.82	12.65	3.32	**233**	*100*	ug/L
Orthophosphorous	3	30	10	0	0.02	0.02	0.1	*None*	mg/L
Potassium	16	29	55	250	1987	1230	12200	*None*	ug/L
Selenium	7	29	24	0.2	1.46	1	5	*50*	ug/L
Silver	19	29	66	0.01	5.71	0.04	134	*None*	ug/L
Sodium	29	29	100	1140	3730	3070	11500	*None*	ug/L
Sulfate	31	31	100	3.6	61	53.5	192	*None*	mg/L
TDS	28	30	93	32	210	215.5	408	*None*	mg/L
Thallium	4	29	14	0.01	0.04	0.01	0.24	*2*	ug/L
Vanadium	26	29	90	0.15	7.63	0.48	73.5	*None*	ug/L
Zinc	26	29	90	3.18	648.71	6.72	14800	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

[2] Non-detect results are incorporated into the statistics using one-half of the detection limit.

TABLE 4-14

Source Area Summary Statistics - Groundwater

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Alkalinity	15	15	100	75	287.07	110	2400	*None*	mg/L
Aluminum	6	20	30	1.4	94.57	5.05	**1290**	*1,000*	ug/L
Antimony	8	20	40	0.01	0.2	0.06	2.49	*6*	ug/L
Arsenic	20	20	100	12.5	**256.38**	**281**	**567**	*50*	ug/L
Barium	20	20	100	28.7	62.72	49.55	155	*1,000*	ug/L
Beryllium	10	20	50	0.005	0.03	0.02	0.15	*4*	ug/L
Cadmium	5	20	25	0.01	0.02	0.01	0.06	*50*	ug/L
Calcium	20	20	100	36600	72655	64150	132000	*None*	ug/L
Chloride	15	15	100	1.1	1.81	1.6	5	*None*	mg/L
Chromium	9	20	45	0.3	1.42	0.75	4.81	*50*	ug/L
Cobalt	19	20	95	0.46	10.45	10.01	26.9	*None*	ug/L
Copper	17	20	85	0.3	1.14	0.77	7.18	*1,300*	ug/L
Cyanide	2	15	13	1.5	20.17	1.5	**280**	*200*	ug/L
Hardness	10	14	71	112.5	236.68	208	512	*None*	mg/L
Iron	20	20	100	2110	12782	8420	35900	*None*	ug/L
Lead	8	20	40	0.01	0.19	0.05	2.12	*15*	ug/L
Magnesium	20	20	100	7360	18892	14900	46800	*None*	ug/L
Manganese	19	20	95	0.01	2860	2010	8660	*None*	ug/L
Mercury	5	19	26	0.15	1.61	1	7	*2,000*	ng/L
Nickel	17	20	85	0.85	4.29	3.95	14.2	*100*	ug/L
Orthophosphorous	3	15	20	0	0.05	0.02	0.2	*None*	mg/L
Potassium	8	20	40	500	1095	1035	3670	*None*	ug/L
Selenium	0	20	0	N/A	N/A	N/A	N/A	*50*	ug/L
Silver	1	20	5	0	0.02	0.01	0.18	*None*	ug/L
Sodium	20	20	100	4100	7087.5	7695	10700	*None*	ug/L
Sulfate	15	15	100	5.8	144.87	80.8	483	*None*	mg/L
TDS	15	15	100	191	354.27	267	824	*None*	mg/L
Thallium	1	20	5	0.01	0.01	0.01	0.03	*2*	ug/L
Vanadium	20	20	100	0.1	0.76	0.3	5.08	*None*	ug/L
Zinc	17	20	85	0.66	13.2	8.35	65.7	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-17

Source Area Ambient Air Results

Lava Cap Mine, Nevada County, California

Sample Location:	**No. 5G North End of Waste Rock/Tailings Pile**				**No. 6G Mill Building**				**No. 6H Cyanide Building**		***EPA Region IX Air PRG*** [1]	
Property Parcel:	**39-160**				**39-160**				**39-160**			
Sample Collection:	**Round 1**		**Round 3**		**Round 1**		**Round 3**		**Round 1**			
Sample Date:	**11/9/1999**		**5/3/2000**		**10/28/1999**		**5/19/2000**		**10/21/1999**			
Analyte	**Result**	**Flag**	**Result**	**Flag**	**Result**	**Flag**	**Result**	**Flag**	**Result**	**Flag**	***Value***	**Units****
ALUMINUM	0.86	U	9.6	U	0.69	U	8.9	U	NA		*5.1*	UG/M^3
ANTIMONY	0.0044	U	0.0067	U	0.0027	J	0.046		NA		*0.21*	UG/M^3
ARSENIC	0.12	U	0.27	U	0.11	U	**0.021**	**J**	NA		*0.00045*	UG/M^3
BARIUM	1.3	U	5.0	U	1.1	U	14	U	NA		*0.52*	UG/M^3
BERYLLIUM	0.012	U	0.0067	U	0.011	U	**0.0041**		NA		*0.0008*	UG/M^3
CADMIUM	0.012	U	**0.0067**	**J**	0.011	U	0.0034	U	NA		*0.0011*	UG/M^3
CALCIUM	0.67	U	8.2	U	0.65	U	6.3	U	NA			UG/M^3
CHROMIUM, TOTAL	0.044	U	0.32	U	0.040	U	0.034	U	NA		*0.00016*	UG/M^3
COBALT	0.012	U	0.0067	U	0.011	U	0.0089		NA		*0.021*	UG/M^3
COPPER	0.064	U	0.088	U	0.046	U	0.047	U	NA			UG/M^3
IRON	0.59	U	8.4	U	0.58	U	2.1	U	NA			UG/M^3
LEAD	0.010	U	0.040	U	0.015	U	0.030	U	NA			UG/M^3
MAGNESIUM	0.25	U	3.5	U	0.34	U	1.6	U	NA			UG/M^3
MANGANESE	0.029	U	0.36	U	0.027	U	0.14	U	NA		*0.051*	UG/M^3
NICKEL	0.12	U	**0.054**	**J**	0.027	U	**0.018**	**J**	NA		*0.004*	UG/M^3
POTASSIUM	15	U	135	U	13	U	34	U	NA			UG/M^3
SELENIUM	0.12	J	0.34	U	0.067	U	0.069	U	NA			UG/M^3
SILVER	0.0015	U	0.0067	U	0.0013	U	0.024	U	NA			UG/M^3
SODIUM	21	U	65	U	15	U	99	U	NA			UG/M^3
THALLIUM	0.0058	U	0.0067	U	0.0054	U	0.0021	U	NA			UG/M^3
VANADIUM	0.044	U	0.054	U	0.040	U	0.0069	U	NA			UG/M^3
ZINC	0.77	U	3.4	U	0.68	U	9.7	U	NA			UG/M^3
MERCURY	0.029	U	0.013	U	0.027	UJ	0.0069	U	NA		*0.31*	UG/M^3
CYANIDE	NA		NA		NA		NA		21	U	*3.1*	UG/M^3

Flags: U = non-detect, J = estimated

**UG/M3 is micrograms per cubic meter of air.

Bolded values indicate those analytes where detected concentrations exceed the ambient air PRG value.

NA - Indicates that the analyte was not analyzed in this sample.

[1] EPA Region IX PRG- Preliminary remediation goals (PRGs) are risk-based concentrations used as tools to guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

TABLE 4-18

Mine Area Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
2,4,6-Trinitrotoluene	1	6	17	0.05	0.08	0.05	0.2	-	*16*	MG/KG
Aluminum	39	39	100	2620	22775	18600	75500	*60,000*	*76,000*	MG/KG
Antimony	36	39	92	0.12	9.7	1.8	**123**	*1.14*	*31*	MG/KG
Arsenic	39	39	100	4.7	**1011**	**359**	**5570**	*23.8*	*0.39/22 [3]*	MG/KG
Barium	39	39	100	29.8	156	125	404	*437*	*5,400*	MG/KG
Beryllium	39	39	100	0.15	0.51	0.44	1.42	*1.25*	*150*	MG/KG
Cadmium	39	39	100	0.09	1.85	0.84	**12.1**	*0.30*	*9*	MG/KG
Chromium	39	39	100	6.37	23.2	21.6	40.4	*48.6*	*210*	MG/KG
Cobalt	39	39	100	1.4	9.2	7.4	31.2	*15.5*	*4,700*	MG/KG
Copper	39	39	100	13.9	68.3	49.5	419	*77.1*	*2,900*	MG/KG
Cyanide	28	39	72	0.1	1.2	0.3	**14.9**	*0.30*	*11*	MG/KG
Iron	39	39	100	9720	41495	37200	**146000**	*55,400*	*23,000*	MG/KG
Lead	37	39	95	10.5	125	47.6	**1180**	*26.9*	*400*	MG/KG
Manganese	39	39	100	175	803	667	**2540**	*1,310*	*1,800*	MG/KG
Mercury	38	39	97	0.03	1.04	0.18	16.8	*0.13*	*23*	MG/KG
Nickel	39	39	100	7	19.49	13.7	75.7	*42.0*	*150*	MG/KG
Selenium	15	39	38	0.22	1	1.07	3.94	*0.42*	*390*	MG/KG
Silver	39	39	100	0.13	11.6	2.4	135	*0.25*	*390*	MG/KG
Thallium	39	39	100	0.03	0.17	0.15	0.57	*0.24*	*5.2*	MG/KG
Vanadium	39	39	100	8.42	67	57.2	217	*159*	*550*	MG/KG
Zinc	39	39	100	41	446	196	4650	*84.8*	*23,000*	MG/KG

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-19

Mine Area Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Alkalinity	4	4	100	9	22.25	13.5	53	*None*	MG/L
Aluminum	4	4	100	41.9	219.98	249.5	339	*1,000*	UG/L
Antimony	4	4	100	0.04	0.15	0.05	0.46	*6*	UG/L
Arsenic	4	4	100	1.7	10.18	3.55	31.9	*50*	UG/L
Barium	4	4	100	17.1	25.48	20.9	43	*1,000*	UG/L
Beryllium	0	4	0	N/A	N/A	N/A	N/A	*4*	UG/L
Cadmium	0	4	0	N/A	N/A	N/A	N/A	*50*	UG/L
Calcium	4	4	100	2310	6827.5	2600	19800	*None*	UG/L
Chloride	2	4	50	0.4	0.75	0.65	1.3	*None*	MG/L
Chromium	1	4	25	0.16	0.57	0.31	1.5	*50*	UG/L
Cobalt	4	4	100	0.12	0.26	0.25	0.43	*None*	UG/L
Copper	4	4	100	0.46	1.42	1.65	1.93	*1,300*	UG/L
Cyanide	0	4	0	N/A	N/A	N/A	N/A	*200*	UG/L
Hardness	3	4	75	7	39	25.5	98	*None*	MG/L
Iron	4	4	100	139	298.5	277.5	500	*None*	UG/L
Lead	4	4	100	0.13	0.19	0.21	0.23	*15*	UG/L
Magnesium	4	4	100	1030	2242.5	1165	5610	*None*	UG/L
Manganese	4	4	100	3.59	25.52	16.99	64.5	*None*	UG/L
Mercury	4	4	100	5	5.5	5	7	*2,000*	NG/L
Nickel	3	4	75	0.3	0.72	0.58	1.42	*100*	UG/L
Orthophosphate	1	4	25	0.02	0.03	0.04	0.05	*None*	MG/L
Potassium	1	4	25	250	797.5	500	1940	*None*	UG/L
Selenium	0	4	0	N/A	N/A	N/A	N/A	*50*	UG/L
Silver	1	4	25	0	0.01	0.01	0.02	*None*	UG/L
Sodium	4	4	100	1970	2552.5	2095	4050	*None*	UG/L
Sulfate	4	4	100	1.6	8.225	2.05	27.2	*None*	MG/L
TDS	3	4	75	17.5	41.875	40	70	*None*	MG/L
Thallium	0	4	0	N/A	N/A	N/A	N/A	*2*	UG/L
Vanadium	4	4	100	0.77	1.025	0.98	1.37	*None*	UG/L
Zinc	4	4	100	1.1	1.2125	1.145	1.46	*None*	UG/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-20

Residential Wells at the Mine, Summary Statistics - Groundwater

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	2	7	29	2.2	6.06	3.85	20.8	*1,000*	UG/L
Antimony	4	7	57	0.02	0.37	0.19	1.53	*6*	UG/L
Arsenic	7	7	100	11.2	**154**	**55.1**	**528**	*50*	UG/L
Barium	7	7	100	54.3	273	346	537	*1,000*	UG/L
Beryllium	2	7	29	0.01	0.01	0.01	0.03	*4*	UG/L
Cadmium	2	7	29	0.01	0.02	0.01	0.06	*50*	UG/L
Calcium	7	7	100	20500	41214	38500	62800	*None*	UG/L
Chromium	2	7	29	0.04	0.77	0.55	1.66	*50*	UG/L
Cobalt	7	7	100	0.07	0.32	0.21	0.68	*None*	UG/L
Copper	7	7	100	1.08	7.61	2.6	27.1	*1,300*	UG/L
Cyanide	0	6	0	N/A	N/A	N/A	N/A	*200*	UG/L
Iron	6	7	86	12.6	304	112	916	*None*	UG/L
Lead	5	7	71	0.02	0.37	0.3	0.85	*15*	UG/L
Magnesium	7	7	100	4570	7201	6180	12700	*None*	UG/L
Manganese	7	7	100	9	129	33.3	435	*None*	UG/L
Mercury	1	6	17	0.35	2.98	1	14	*2,000*	NG/L
Nickel	7	7	100	0.93	2.38	2.7	3.15	*100*	UG/L
Potassium	3	7	43	500	1003	1000	1700	*None*	UG/L
Selenium	1	7	14	0.2	1.29	1	2.5	*50*	UG/L
Silver	0	7	0	N/A	N/A	N/A	N/A	*None*	UG/L
Sodium	7	7	100	4280	10244	10500	20200	*None*	UG/L
Thallium	0	7	0	N/A	N/A	N/A	N/A	*2*	UG/L
Vanadium	5	7	71	0.045	0.48	0.2	1.1	*None*	UG/L
Zinc	7	7	100	1.2	7.37	4.49	27	*None*	UG/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-22

Mine Area Ambient Air Results

Lava Cap Mine, Nevada County, California

Sample Location:	**No. 10C Near Rental Residence at Mine**				***EPA Region IX Air PRG [1]***	
Sample Collection:	**Round 1**		**Round 3**			
Sample Date:	**10/22/1999**		**5/2/2000**			
Analyte	**Result**	**Flag**	**Result**	**Flag**	***Value***	**Units****
ALUMINUM	2.3	U	5.8	U	*5.1*	UG/M^3
ANTIMONY	0.0040	U	0.014	J	*0.21*	UG/M^3
ARSENIC	**0.067**		0.28	U	*0.00045*	UG/M^3
BARIUM	1.4	U	5.8	U	*0.52*	UG/M^3
BERYLLIUM	0.0005	U	0.0070	U	*0.0008*	UG/M^3
CADMIUM	0.0005	U	0.0070	U	*0.0011*	UG/M^3
CALCIUM	2.0	U	6.5	U		UG/M^3
CHROMIUM, TOTAL	0.081	U	0.17	U	*0.00016*	UG/M^3
COBALT	0.0050	U	0.0070	U	*0.021*	UG/M^3
COPPER	0.018	U	0.12	U		UG/M^3
IRON	2.5	U	11	U		UG/M^3
LEAD	0.015	U	0.070	U		UG/M^3
MAGNESIUM	0.65	U	1.6	U		UG/M^3
MANGANESE	0.074	U	0.27	U	*0.051*	UG/M^3
NICKEL	0.040	U	0.014	U	*0.004*	UG/M^3
POTASSIUM	27	U	140	U		UG/M^3
SELENIUM	0.067	UJ	0.14	U		UG/M^3
SILVER	0.0054	U	0.014	U		UG/M^3
SODIUM	17	U	82	U		UG/M^3
THALLIUM	0.0003	U	0.0070	U		UG/M^3
VANADIUM	0.081	U	0.028	U		UG/M^3
ZINC	0.88	U	4.0	U		UG/M^3
MERCURY	0.0054	U	0.014	U	*0.31*	UG/M^3
CYANIDE	NA		NA		*3.1*	UG/M^3

Flags: U = non-detect, J = estimated

**UG/M3 is micrograms per cubic meter of air.

Bolded values indicate those analytes where detected concentrations exceed the ambient air PRG value.

NA - Indicates that the analyte was not analyzed in this sample.

[1] EPA Region IX PRG- Preliminary remediation goals (PRGs) are risk-based concentrations used as tools to guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

TABLE 4-23

Little Clipper Creek Below Mine Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	9	9	100	4640	14300	8520	45400	*60,000*	*76,000*	mg/kg
Antimony	9	9	100	0.37	5.4	4.5	11.4	*1.14*	*31*	mg/kg
Arsenic	9	9	100	**53.9**	**599**	**663**	**908**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	9	9	100	29	106	71.7	279	*437*	*5,400*	mg/kg
Beryllium	9	9	100	0.21	0.39	0.29	0.88	*1.25*	*150*	mg/kg
Cadmium	9	9	100	0.25	1.6	1.5	2.68	*0.30*	*9*	mg/kg
Chromium	9	9	100	7.89	14.3	13.1	29.6	*48.6*	*210*	mg/kg
Cobalt	9	9	100	4.9	9.4	8.8	20.3	*15.5*	*4,700*	mg/kg
Copper	9	9	100	22.9	34.5	34.3	54.3	*77.1*	*2,900*	mg/kg
Cyanide	2	9	22	0.1	0.3	0.3	0.9	*0.30*	*11*	mg/kg
Lead	9	9	100	17.9	36.4	34.5	51.7	*26.9*	*400*	mg/kg
Manganese	9	9	100	515	859	840	1420	*1,310*	*1,800*	mg/kg
Mercury	9	9	100	0.06	0.1	0.1	0.4	*0.13*	*23*	mg/kg
Nickel	9	9	100	11.6	18	16.9	30.6	*42.0*	*150*	mg/kg
Selenium	0	9	0	N/A	N/A	N/A	N/A	*0.42*	*390*	mg/kg
Silver	9	9	100	1.39	8.21	7.69	15.2	*0.25*	*390*	mg/kg
Thallium	9	9	100	0.03	0.10	0.05	0.31	*0.24*	*5.2*	mg/kg
Vanadium	9	9	100	14.3	39.3	24	138	*159*	*550*	mg/kg
Zinc	9	9	100	84.6	157	164	212	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-24

Little Clipper Creek Below Mine Summary Statistics - Sediment

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	5	5	100	10800	12660	12700	14300	*60,000*	*76,000*	mg/kg
Antimony	5	5	100	2.38	4.08	3.9	5.79	*1.14*	*31*	mg/kg
Arsenic	5	5	100	**328**	**669**	**561**	**1150**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	5	5	100	83.1	96.4	92.3	109	*437*	*5,400*	mg/kg
Beryllium	5	5	100	0.32	0.43	0.41	0.59	*1.25*	*150*	mg/kg
Cadmium	5	5	100	0.91	1	1	3	*0.30*	*9*	mg/kg
Chromium	5	5	100	15.2	21.4	17	40.9	*48.6*	*210*	mg/kg
Cobalt	5	5	100	6.38	8.52	8.11	11.8	*15.5*	*4,700*	mg/kg
Copper	5	5	100	27.8	40	39	54	*77.1*	*2,900*	mg/kg
Cyanide	2	5	40	0.2	0.3	0.25	0.7	*0.30*	*11*	mg/kg
Lead	5	5	100	22.9	33.8	28.7	60.2	*26.9*	*400*	mg/kg
Manganese	5	5	100	290	815	730	1340	*1,310*	*1,800*	mg/kg
Mercury	4	5	80	0.03	0.12	0.06	0.28	*0.13*	*23*	mg/kg
Nickel	5	5	100	15.4	25.0	26.4	35.8	*42.0*	*150*	mg/kg
Selenium	3	5	60	0.265	0.701	0.6	1.33	*0.42*	*390*	mg/kg
Silver	5	5	100	3.91	8.42	8.68	11.9	*0.25*	*390*	mg/kg
Thallium	5	5	100	0.06	0.08	0.08	0.09	*0.24*	*5.2*	mg/kg
Vanadium	5	5	100	30.5	49	42	88	*159*	*550*	mg/kg
Zinc	5	5	100	120	172	156	261	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-25

Little Clipper Creek Below Mine Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	10	15	67	2	142	31	598	*1,000*	ug/L
Antimony	10	15	67	0.22	0.89	0.79	1.95	*6*	ug/L
Arsenic	15	15	100	19	**132**	**128**	**285**	*50*	ug/L
Barium	15	15	100	36.2	48	41.1	69.7	*1,000*	ug/L
Beryllium	0	15	0	N/A	N/A	N/A	N/A	*4*	ug/L
Cadmium	9	15	60	0.01	0.03	0.03	0.07	*5*	ug/L
Chromium	0	15	0	N/A	N/A	N/A	N/A	*50*	ug/L
Cobalt	15	15	100	0.13	0.37	0.3	0.88	*None*	ug/L
Copper	13	15	87	0.175	0.92	0.51	2.64	*1300*	ug/L
Cyanide	1	15	7	1	3	1.5	33	*200*	ug/L
Lead	10	15	67	0.005	0.2	0.04	0.67	*15*	ug/L
Manganese	15	15	100	3.8	56	44	180	*None*	ug/L
Mercury	6	15	40	0.5	3	1	11	*2,000*	ng/L
Nickel	15	15	100	0.65	2	2.0	3	*100*	ug/L
Selenium	2	15	13	0.2	1	1	2	*50*	ug/L
Silver	5	15	33	0.0035	0.02	0.01	0.07	*None*	ug/L
Thallium	0	15	0	N/A	N/A	N/A	N/A	*2*	ug/L
Vanadium	11	15	73	0.1	0.7	0.4	1.85	*None*	ug/L
Zinc	15	15	100	0.6	4	3	9.08	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-27

Residential Wells Along Little Clipper Creek Below Mine, Summary Statistics - Groundwater

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	4	15	27	1.1	9.71	1.9	84.5	*1,000*	ug/L
Antimony	10	15	67	0.01	0.22	0.18	0.74	*6*	ug/L
Arsenic	12	15	80	0.1	9.68	1	46.3	*50*	ug/L
Barium	15	15	100	17.3	100	101	259	*1,000*	ug/L
Beryllium	6	15	40	0.01	0.01	0.01	0.03	*4*	ug/L
Cadmium	6	15	40	0.01	0.02	0.01	0.06	*50*	ug/L
Calcium	15	15	100	5510	29022	31000	49400	*None*	ug/L
Chromium	2	15	13	0.04	0.72	0.35	2.11	*50*	ug/L
Cobalt	15	15	100	0.05	0.47	0.26	1.07	*None*	ug/L
Copper	14	15	93	0.1	3.55	0.96	25.9	*1,300*	ug/L
Cyanide	0	14	0	N/A	N/A	N/A	N/A	*200*	ug/L
Iron	15	15	100	70.3	1018	966	2380	*None*	ug/L
Lead	14	15	93	0.02	0.89	0.22	4.46	*15*	ug/L
Magnesium	15	15	100	1610	6162	5900	13300	*None*	ug/L
Manganese	15	15	100	7.61	361	394	696	*None*	ug/L
Mercury	0	14	0	N/A	N/A	N/A	N/A	*2,000*	ng/L
Nickel	13	15	87	0.58	2.39	2.2	4.8	*100*	ug/L
Potassium	6	15	40	250	771	555	1480	*None*	ug/L
Selenium	1	15	7	0.2	0.65	1	1	*50*	ug/L
Silver	0	15	0	N/A	N/A	N/A	N/A	*None*	ug/L
Sodium	15	15	100	2500	6117	5960	11200	*None*	ug/L
Thallium	0	15	0	N/A	N/A	N/A	N/A	*2*	ug/L
Vanadium	8	15	53	0.05	0.66	0.33	2.09	*None*	ug/L
Zinc	14	15	93	0.55	14.17	4.7	79.5	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-29

Deposition Area and Lost Lake Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	45	45	100	2950	26900	27300	**85400**	*60,000*	*76,000*	mg/kg
Antimony	44	45	98	0.26	1.9	1.1	5.11	*1.14*	*31*	mg/kg
Arsenic	104	106	98	4.15	**339**	**339**	**913**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	45	45	100	22.7	205	184	605	*437*	*5,400*	mg/kg
Beryllium	45	45	100	0.18	0.61	0.59	2.37	*1.25*	*150*	mg/kg
Cadmium	45	45	100	0.07	1.3	0.51	**11.1**	*0.30*	*9*	mg/kg
Chromium	45	45	100	6.39	28.5	27.2	76.9	*48.6*	*210*	mg/kg
Cobalt	45	45	100	3.67	13.5	11.7	67.2	*15.5*	*4,700*	mg/kg
Copper	45	45	100	24.9	61.6	57	255	*77.1*	*2,900*	mg/kg
Cyanide	27	44	61	0.1	0.3	0.2	0.9	*0.30*	*11*	mg/kg
Lead	45	45	100	18.3	31	29.9	58.4	*26.9*	*400*	mg/kg
Manganese	45	45	100	300	1420	1370	**3280**	*1,310*	*1,800*	mg/kg
Mercury	45	45	100	0.05	0.11	0.1	0.25	*0.13*	*23*	mg/kg
Nickel	45	45	100	11.1	21.1	19.2	109	*42.0*	*150*	mg/kg
Selenium	8	45	18	0.2	0.4	0.3	2.52	*0.42*	*390*	mg/kg
Silver	45	45	100	0.11	2.6	0.57	9.81	*0.25*	*390*	mg/kg
Thallium	43	45	96	0.025	0.261	0.18	2.38	*0.24*	*5.2*	mg/kg
Vanadium	45	45	100	11.5	71.5	66	224	*159*	*550*	mg/kg
Zinc	45	45	100	42.2	154	110	1170	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-30

Deposition Area and Lost Lake Summary Statistics - Subsurface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	18	18	100	2860	5062	4555	11200	*60,000*	*76,000*	mg/kg
Antimony	18	18	100	3.5	7.5	7.3	14	*1.14*	*31*	mg/kg
Arsenic	18	18	100	**719**	**1434**	**1230**	**2480**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	18	18	100	20.3	58.4	41.9	224	*437*	*5,400*	mg/kg
Beryllium	18	18	100	0.2	0.32	0.3	0.67	*1.25*	*150*	mg/kg
Cadmium	18	18	100	2.3	3.9	4.0	6.51	*0.30*	*9*	mg/kg
Chromium	18	18	100	7.2	12.1	11.8	19.9	*48.6*	*210*	mg/kg
Cobalt	18	18	100	4.2	7.0	6.8	12	*15.5*	*4,700*	mg/kg
Copper	18	18	100	31.9	38.8	37.3	48.5	*77.1*	*2,900*	mg/kg
Cyanide	15	18	83	0.1	3.22	1.1	**18.9**	*0.30*	*11*	mg/kg
Iron	18	18	100	12000	19211	17750	35800	*55,400*	*23,000*	mg/kg
Lead	18	18	100	35.5	54.1	50.5	121	*26.9*	*400*	mg/kg
Manganese	18	18	100	484	627	594.5	900	*1,310*	*1,800*	mg/kg
Mercury	18	18	100	0.05	0.1	0.07	0.22	*0.13*	*23*	mg/kg
Nickel	18	18	100	11.6	19.4	18.8	33.3	*42.0*	*150*	mg/kg
Selenium	7	18	39	0.2	0.7	0.34	3.16	*0.42*	*390*	mg/kg
Silver	18	18	100	4.23	7.9	7.89	15.2	*0.25*	*390*	mg/kg
Thallium	13	18	72	0.02	0.05	0.04	0.22	*0.24*	*5.2*	mg/kg
Vanadium	18	18	100	9.32	18.2	17.25	34.3	*159*	*550*	mg/kg
Zinc	18	18	100	148	329	315	577	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-31

Deposition Area and Lost Lake Summary Statistics - Sediment

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	24	24	100	3380	16100	14750	40200	*60,000*	*76,000*	mg/kg
Antimony	24	24	100	1.49	3.9	3.65	7.8	*1.14*	*31*	mg/kg
Arsenic	24	24	100	**228**	**663**	**692**	**1140**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	24	24	100	28.7	111	110	223	*437*	*5,400*	mg/kg
Beryllium	24	24	100	0.213	0.515	0.48	1.03	*1.25*	*150*	mg/kg
Cadmium	24	24	100	0.37	2.4	2.3	3.77	*0.30*	*9*	mg/kg
Chromium	24	24	100	7.56	20.2	18.5	37.8	*48.6*	*210*	mg/kg
Cobalt	24	24	100	5.32	10.6	9.47	24.7	*15.5*	*4,700*	mg/kg
Copper	24	24	100	31.9	47	43	78	*77.1*	*2,900*	mg/kg
Cyanide	17	23	74	0.1	0.5	0.3	1.8	*0.30*	*11*	mg/kg
Lead	24	24	100	14.4	36.2	34.5	54.8	*26.9*	*400*	mg/kg
Manganese	24	24	100	178	695	682.5	1110	*1,310*	*1,800*	mg/kg
Mercury	24	24	100	0.02	0.15	0.15	0.31	*0.13*	*23*	mg/kg
Nickel	21	24	88	13.6	19.6	18.1	32.2	*42.0*	*150*	mg/kg
Selenium	12	24	50	0.2	0.8	0.5	3.19	*0.42*	*390*	mg/kg
Silver	24	24	100	2.27	5.69	5.70	8.98	*0.25*	*390*	mg/kg
Thallium	22	24	92	0.02	0.09	0.08	0.24	*0.24*	*5.2*	mg/kg
Vanadium	24	24	100	13.9	46.1	40.6	92.9	*159*	*550*	mg/kg
Zinc	24	24	100	74.8	278	221	1850	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-32

Deposition Area and Lost Lake Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	21	31	68	1.3	50	38	151	*1,000*	ug/L
Antimony	18	31	58	0.025	1.94	0.2	**16.1**	*6*	ug/L
Arsenic	31	31	100	5.8	**161**	40.9	**1160**	*50*	ug/L
Barium	31	31	100	15.1	32	31.8	50.5	*1,000*	ug/L
Beryllium	2	31	6	0.005	0.097	0.01	1.97	*4*	ug/L
Cadmium	12	31	39	0.01	0.14	0.01	2.01	*5*	ug/L
Chromium	6	31	19	0.05	0.95	0.35	4.08	*50*	ug/L
Cobalt	31	31	100	0.07	0.66	0.3	3.55	*None*	ug/L
Copper	26	31	84	0.105	0.789	0.46	2.75	*1300*	ug/L
Cyanide	1	29	3	1.5	2.8	1.5	39	*200*	ug/L
Lead	24	31	77	0.005	0.49	0.1	7.9	*15*	ug/L
Manganese	31	31	100	14.2	173	59.3	684	*None*	ug/L
Mercury	16	31	52	0.25	2	1	7	*2,000*	ng/L
Nickel	26	31	84	0.21	1.3	1.1	6.45	*100*	ug/L
Selenium	0	31	0	N/A	N/A	N/A	N/A	*50*	ug/L
Silver	6	31	19	0.0035	0.104	0.01	1.99	*None*	ug/L
Thallium	2	31	6	0.005	0.193	0.01	**4.08**	*2*	ug/L
Vanadium	27	31	87	0.1	0.9	0.5	10.3	*None*	ug/L
Zinc	31	31	100	0.61	6.4	2.1	42.2	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-33

Deposition Area Summary Statistics - Groundwater

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Drinking Water Standard*[1]	Units
Alkalinity	5	5	100	181	232	226	296	*None*	mg/L
Aluminum	4	7	57	2.25	**1028**	37.2	**4320**	*1,000*	ug/L
Antimony	7	7	100	0.29	**12.6**	0.94	**62**	*6*	ug/L
Arsenic	7	7	100	**235**	**1175**	**841**	**2410**	*50*	ug/L
Barium	7	7	100	39.6	67.7	58.8	102	*1,000*	ug/L
Beryllium	5	7	71	0.01	0.06	0.03	0.18	*4*	ug/L
Cadmium	7	7	100	0.02	0.28	0.18	0.99	*50*	ug/L
Calcium	7	7	100	66600	78300	70400	120000	*None*	ug/L
Chloride	3	5	60	0.2	1.38	1.5	3	*None*	mg/L
Chromium	6	7	86	0.4	2.28	1.64	5.47	*50*	ug/L
Cobalt	7	7	100	1.28	4.64	2.44	12.1	*None*	ug/L
Copper	7	7	100	0.34	4.34	0.92	14.7	*1,300*	ug/L
Cyanide	2	4	50	1.5	94.3	3.25	**369**	*200*	ug/L
Hardness	5	5	100	207	274	240	468	*None*	mg/L
Iron	7	7	100	51.2	7173	7100	15000	*None*	ug/L
Lead	5	7	71	0.02	3.83	0.1	13.6	*15*	ug/L
Magnesium	7	7	100	8190	13357	10400	32400	*None*	ug/L
Manganese	7	7	100	250	1262	1050	2310	*None*	ug/L
Mercury	4	4	100	2	12.5	15.5	17	*2,000*	ng/L
Nickel	7	7	100	3.46	8.94	6.5	22.5	*100*	ug/L
Orthophosphate	2	5	40	0.02	0.08	0.05	0.2	*None*	mg/L
Potassium	6	7	86	500	3871	4540	5510	*None*	ug/L
Selenium	0	7	0	N/A	N/A	N/A	N/A	*50*	ug/L
Silver	3	7	43	0	0.16	0.03	0.55	*None*	ug/L
Sodium	7	7	100	1860	4413	4430	6970	*None*	ug/L
Sulfate	5	5	100	0.4	34.6	7.3	152	*None*	mg/L
TDS	5	5	100	220	261	237	350	*None*	mg/L
Thallium	0	7	0	N/A	N/A	N/A	N/A	*2*	ug/L
Vanadium	5	7	71	0.03	2.62	0.8	8.65	*None*	ug/L
Zinc	7	7	100	1.8	22.2	15.8	71.5	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-34

Residential Wells in the Lost Lake Vicinity, Summary Statistics - Groundwater

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	9	24	38	1	44.34	5.58	527	*1,000*	ug/L
Antimony	1	24	4	0.01	0.05	0.03	0.43	*6*	ug/L
Arsenic	11	24	46	0.05	0.2	0.13	0.64	*50*	ug/L
Barium	24	24	100	2.11	51.61	44.95	132	*1,000*	ug/L
Beryllium	21	24	88	0.01	0.04	0.03	0.12	*4*	ug/L
Cadmium	4	24	17	0.01	0.02	0.01	0.13	*50*	ug/L
Calcium	24	24	100	1230	18088	16020	52300	*None*	ug/L
Chromium	4	24	17	0.04	1.08	1.5	3.6	*50*	ug/L
Cobalt	24	24	100	0.03	0.28	0.09	1.47	*None*	ug/L
Copper	23	24	96	0.19	24.22	3.4	354	*1,300*	ug/L
Cyanide	0	22	0	N/A	N/A	N/A	N/A	*200*	ug/L
Iron	18	24	75	4.5	2769	669	12600	*None*	ug/L
Lead	22	24	92	0.01	2.24	1.09	**21.7**	*15*	ug/L
Magnesium	24	24	100	859	4023	4220	10200	*None*	ug/L
Manganese	24	24	100	2.44	360	167	1270	*None*	ug/L
Mercury	4	24	17	0.1	1.23	1	6	*2,000*	ng/L
Nickel	24	24	100	0.54	1.92	1.41	6.19	*100*	ug/L
Potassium	4	24	17	250	996	500	8870	*None*	ug/L
Selenium	2	24	8	0.2	0.68	0.7	2.5	*50*	ug/L
Silver	2	24	8	0	0.03	0.01	0.43	*None*	ug/L
Sodium	24	24	100	1360	9001	5450	35100	*None*	ug/L
Thallium	2	24	8	0.01	0.01	0.01	0.02	*2*	ug/L
Vanadium	6	24	25	0.05	0.32	0.23	1.53	*None*	ug/L
Zinc	24	24	100	1.8	17.62	7.48	246	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.

TABLE 4-36

Deposition Area Ambient Air Results

Lava Cap Mine, Nevada County, California

Sample Location:	**No. 13G Near Confluence of Clipper Creek and Little Clipper Creek**				**No. 13H At South End of Deposition Area**				***EPA Region IX Air PRG*** [1]	
Sample Collection:	**Round 1**		**Round 3**		**Round 1**		**Round 3**			
Sample Date:	**11/3/1999**		**5/5/2000**		**11/4/1999**		**5/4/2000**			
Analyte	**Result**	**Flag**	**Result**	**Flag**	**Result**	**Flag**	**Result**	**Flag**	***Value***	**Units****
ALUMINUM	0.55	U	5.2	U	0.42	U	7.6	U	*5.1*	UG/M^3
ANTIMONY	0.0091	J	0.0041	U	0.0041	J	0.046	J	*0.21*	UG/M^3
ARSENIC	0.026	U	0.041	U	0.028	U	0.26	U	*0.00045*	UG/M^3
BARIUM	0.43	U	7.6	U	0.53	U	5.4	U	*0.52*	UG/M^3
BERYLLIUM	0.0026	U	0.0041	U	0.0028	U	0.0066	U	*0.0008*	UG/M^3
CADMIUM	0.0026	U	0.0041	U	0.0028	U	**0.0066**	**J**	*0.0011*	UG/M^3
CALCIUM	0.75	U	5.0	U	0.65	U	8.6	U		UG/M^3
CHROMIUM, TOTAL	0.039	U	0.069	U	0.041	U	0.20	U	*0.00016*	UG/M^3
COBALT	0.0078	U	0.0062		0.012	U	0.0066	U	*0.021*	UG/M^3
COPPER	0.016	U	0.067	U	0.018	U	0.07899934	U		UG/M^3
IRON	0.48	U	4.3	U	0.41	U	6.6	U		UG/M^3
LEAD	0.0039	U	0.016	U	0.0055	U	0.026	U		UG/M^3
MAGNESIUM	0.22	U	1.9	U	0.19	U	2.6	U		UG/M^3
MANGANESE	0.026	U	0.069	U	0.028	U	0.36	U	*0.051*	UG/M^3
NICKEL	0.0065	U	0.021	U	0.0069	U	**0.033**	**J**	*0.004*	UG/M^3
POTASSIUM	13	U	21	U	14	U	132	U		UG/M^3
SELENIUM	0.065	U	0.21	U	0.069	U	0.33	U		UG/M^3
SILVER	0.0016	U	0.0041	U	0.0014	U	0.0066	U		UG/M^3
SODIUM	4.8	U	151	U	5.8	U	68	U		UG/M^3
THALLIUM	0.0013	U	0.0021	U	0.0014	U	0.0066	U		UG/M^3
VANADIUM	0.039	U	0.017	U	0.041	U	0.033	U		UG/M^3
ZINC	0.22	U	7.0	U	0.32	U	4.1	U		UG/M^3
MERCURY	0.026	U	0.0041	U	0.028	U	0.013	U	*0.31*	UG/M^3
CYANIDE	NA		NA		NA		NA		*3.1*	UG/M^3

Flags: U = non-detect, J = estimated

**UG/M3 is micrograms per cubic meter of air.

Bolded values indicate those analytes where detected concentrations exceed the ambient air PRG value.

NA - Indicates that the analyte was not analyzed in this sample.

[1] EPA Region IX PRG- Preliminary remediation goals (PRGs) are risk-based concentrations used as tools to guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

TABLE 4-37

Downgradient of Lost Lake Ambient Air Results

Lava Cap Mine, Nevada County, California

Sample Location:	**No. 19D Lost Lake Dam**		***EPA Region IX Air PRG*** [1]	
Sample Collection:	**Round 1**			
Sample Date:	**10/20/1999**			
Analyte	**Result**	**Flag**	***Value***	**Units****
ALUMINUM	1.4	U	*5.1*	UG/M^3
ANTIMONY	0.0014	U	*0.21*	UG/M^3
ARSENIC	0.028	U	*0.00045*	UG/M^3
BARIUM	1.2	U	*0.52*	UG/M^3
BERYLLIUM	0.0028	U	*0.0008*	UG/M^3
CADMIUM	0.0028	U	*0.0011*	UG/M^3
CALCIUM	0.85	J		UG/M^3
CHROMIUM, TOTAL	0.084	U	*0.00016*	UG/M^3
COBALT	**0.046**		*0.021*	UG/M^3
COPPER	0.014	U		UG/M^3
IRON	1.7	U		UG/M^3
LEAD	0.0070	J		UG/M^3
MAGNESIUM	0.68	U		UG/M^3
MANGANESE	0.056	U	*0.051*	UG/M^3
NICKEL	**0.028**	**J**	*0.004*	UG/M^3
POTASSIUM	28	U		UG/M^3
SELENIUM	0.070	U		UG/M^3
SILVER	0.0028	U		UG/M^3
SODIUM	18	U		UG/M^3
THALLIUM	0.0028	U		UG/M^3
VANADIUM	0.084	U		UG/M^3
ZINC	0.80	U		UG/M^3
MERCURY	0.0028	U	*0.31*	UG/M^3
CYANIDE	NA		*3.1*	UG/M^3

Flags: U = non-detect, J = estimated

**UG/M3 is micrograms per cubic meter of air.

Bolded values indicate those analytes where detected concentrations exceed the ambient air PRG value.

NA - Indicates that the analyte was not analyzed in this sample.

[1] EPA Region IX PRG- Preliminary remediation goals (PRGs) are risk-based concentrations used as tools to guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

TABLE 4-38

Downgradient of Lost Lake Summary Statistics - Surface Soil

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	3	3	100	13500	27966	34700	35700	*60,000*	*76,000*	mg/kg
Antimony	3	3	100	1.28	1.71	1.29	2.57	*1.14*	*31*	mg/kg
Arsenic	3	3	100	**261**	**403**	**276**	**673**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	3	3	100	71	189	245	250	*437*	*5,400*	mg/kg
Beryllium	3	3	100	0.35	0.61	0.73	0.75	*1.25*	*150*	mg/kg
Cadmium	3	3	100	0.94	1.2	0.99	1.55	*0.30*	*9*	mg/kg
Chromium	3	3	100	15.2	23.6	27.2	28.4	*48.6*	*210*	mg/kg
Cobalt	3	3	100	6.56	10.3	12	12.3	*15.5*	*4,700*	mg/kg
Copper	3	3	100	39	45	48	48.2	*77.1*	*2,900*	mg/kg
Cyanide	3	3	100	0.5	0.5	0.5	0.5	*0.30*	*11*	mg/kg
Lead	3	3	100	32.5	33.1	33.3	33.4	*26.9*	*400*	mg/kg
Manganese	3	3	100	690	1070	1250	1270	*1,310*	*1,800*	mg/kg
Mercury	3	3	100	0.09	0.34	0.45	0.47	*0.13*	*23*	mg/kg
Nickel	3	3	100	14.3	15.5	15.9	16.4	*42.0*	*150*	mg/kg
Selenium	0	3	0	N/A	N/A	N/A	N/A	*0.42*	*390*	mg/kg
Silver	3	3	100	1.76	3.49	1.81	6.9	*0.25*	*390*	mg/kg
Thallium	3	3	100	0.06	0.16	0.21	0.22	*0.24*	*5.2*	mg/kg
Vanadium	3	3	100	29.1	57.4	71.3	71.7	*159*	*550*	mg/kg
Zinc	3	3	100	126	150	132	191	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-39

Downgradient of Lost Lake Summary Statistics - Sediment

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[4]	Mean[4]	Median[4]	Maximum[4]	*Reference Area UCL [1]*	*EPA Region IX PRG [2]*	Units
Aluminum	7	7	100	8930	16700	15500	27700	*60,000*	*76,000*	mg/kg
Antimony	7	7	100	0.79	2.3	2.8	3.47	*1.14*	*31*	mg/kg
Arsenic	7	7	100	**38.5**	**753**	**382**	**2110**	*23.8*	*0.39/22 [3]*	mg/kg
Barium	7	7	100	94.7	639	157	2360	*437*	*5,400*	mg/kg
Beryllium	7	7	100	0.34	0.50	0.53	0.58	*1.25*	*150*	mg/kg
Cadmium	7	7	100	0.28	0.99	0.85	2.13	*0.30*	*9*	mg/kg
Chromium	7	7	100	11.9	31	32.6	52.9	*48.6*	*210*	mg/kg
Cobalt	7	7	100	9.15	24	13	62	*15.5*	*4,700*	mg/kg
Copper	7	7	100	25.5	36	33.7	54.8	*77.1*	*2,900*	mg/kg
Cyanide	5	7	71	0.1	3	0.3	**14.4**	*0.30*	*11*	mg/kg
Lead	7	7	100	9.95	22.6	20.2	57.1	*26.9*	*400*	mg/kg
Manganese	7	7	100	840	**17700**	1110	**76400**	*1,310*	*1,800*	mg/kg
Mercury	7	7	100	0.04	0.07	0.07	0.12	*0.13*	*23*	mg/kg
Nickel	7	7	100	16.1	19.7	19.5	25.8	*42.0*	*150*	mg/kg
Selenium	5	7	71	0.66	2.0	1.1	3.55	*0.42*	*390*	mg/kg
Silver	7	7	100	0.644	2.93	3.07	5.84	*0.25*	*390*	mg/kg
Thallium	7	7	100	0.06	0.10	0.11	0.15	*0.24*	*5.2*	mg/kg
Vanadium	6	7	86	0.01	67	78	120	*159*	*550*	mg/kg
Zinc	7	7	100	79.1	134	121	200	*84.8*	*23,000*	mg/kg

Notes:

Bolded values exceed the reference area UCL and the PRG.

mg/kg = milligrams of analyte per kilogram of soil

N/A = not applicable because the analyte was not detected

[1] UCL = These concentrations represent the higher of the 95% upper confidence limit (UCL) values estimated from Reference Area 1 or Reference Area 2. Derivation of UCLs is presented in the HHRA (Appendix E).

[2] EPA Region IX PRG- Preliminary remediation goals (PRGs) are human health risk-based concentrations used as tools to help guide evaluation and cleanup of contaminated sites. EPA is using PRGs to streamline and standardize all stages of the risk decision-making process.

[3] Arsenic has two PRGs, the lower value is for cancer risks and the higher value is for non-cancer risks.

TABLE 4-40

Downgradient of Lost Lake Summary Statistics - Surface Water

Lava Cap Mine, Nevada County, California

Analyte	Number of Detects	Number of Samples	Frequency of Detection (%)	Minimum[2]	Mean[2]	Median[2]	Maximum[2]	*Drinking Water Standard*[1]	Units
Aluminum	9	14	64	1.5	77	23	521	*1,000*	ug/L
Antimony	4	14	29	0.01	0.13	0.09	0.48	*6*	ug/L
Arsenic	14	14	100	0.3	33	23	**72.3**	*50*	ug/L
Barium	14	14	100	19.9	48	28.2	95.8	*1,000*	ug/L
Beryllium	0	14	0	N/A	N/A	N/A	N/A	*4*	ug/L
Cadmium	2	14	14	0.01	0.02	0.01	0.045	*5*	ug/L
Chromium	1	14	7	0.05	0.84	0.72	1.835	*50*	ug/L
Cobalt	14	14	100	0.11	0.71	0.42	1.72	*None*	ug/L
Copper	8	14	57	0.07	0.38	0.2	1.17	*1300*	ug/L
Cyanide	1	14	7	1.5	2	1.5	6	*200*	ug/L
Lead	7	14	50	0.005	0.07	0.02	0.29	*15*	ug/L
Manganese	14	14	100	16.3	728	81.3	2410	*None*	ug/L
Mercury	3	15	20	0.15	1	1	5	*2,000*	ng/L
Nickel	6	14	43	0.175	0.53	0.31	1.2	*100*	ug/L
Selenium	0	14	0	N/A	N/A	N/A	N/A	*50*	ug/L
Silver	1	14	7	0.0035	0.009	0.01	0.021	*None*	ug/L
Thallium	1	14	7	0.005	0.01	0.005	0.07	*2*	ug/L
Vanadium	6	14	43	0.045	0.356	0.255	1.15	*None*	ug/L
Zinc	8	14	57	0.28	1.2	0.76	3.2	*None*	ug/L

Notes:

Bolded values exceed the drinking water standard.

ug/L = micrograms of analyte per liter of water

mg/L = milligrams of analyte per liter of water

ng/L = nanograms of analyte per liter of water

N/A = not applicable because the analyte was not detected

[1] These are the maximum contaminant levels (MCLs) permitted in drinking water. Either the EPA or the State of California MCL (whichever is lower) is shown.