1262092

Source / Discharge?

TABLE 5
Adit ~~Sediment~~ Sample Results

Field Sample ID: ARSG ID: Location:	Superfund Chemical Data Matrix (SCDM) RDSC	Superfund Chemical Data Matrix (SCDM) CRSC	My notes only MCL/MCLG	UAAD001 American Tunnel discharge (at portal)	UAAD002 Upper Gold King 7 Level Mine adit discharge	UAAD003 Red and Bonita Mine adit discharge	UAAD004 Mogul Mine adit discharge	UAAD001 American Tunnel discharge (at portal)	UAAD002 Upper Gold King 7 Level Mine adit discharge	UAAD003 Red and Bonita Mine adit discharge	UAAD004 Mogul Mine adit discharge
				Total Metals	Total Metals	Total Metals	Total Metals	Dissolved Metals	Dissolved Metals	Dissolved Metals	Dissolved Metals
Analytes	(µg/L)	(µg/L)	SW005 (µg/L) SW030	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Aluminum		87	720	5520	18500	4680	3330	4990	18300	4620	3300
Antimony	15		ND 6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.5 U
Arsenic	11	~~[illegible]~~ 150	ND 10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.72 JD
Barium	2,600		ND 2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	25 U
Beryllium	73		ND 4.0	4.18 D	7.03 D	8.4 D	4.82 D	3.7 D	5.98 D	6.45 D	4.49 D
Cadmium	18	0.25	6730 5.0	1.97 JD	54.9 D	53.1 D	55 D	2.02 D	53 D	48.7 D	50.9 D
Calcium			[illegible]	457000	398000	441000	212000	434000	395000	442000	211000
Chromium	110		250 100 250	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.5 U
Cobalt			9.91	133 D	79.1 D	97.4 D	22.3 D	136 D	84.4 D	102 D	22.5 D
Copper		9	8250 1,300	5 U	4030 D	5 U	15.3 D	5 U	4210 D	5 U	20.9 D
Iron		1000	3280 1000	144000	73700	102000	31900	133000	71600	101000	27200
Lead		2.5	64730 15	3.7 D	6.82 D	107 D	271 D	1.12 JD	5.66 D	98:7 D	255 D
Magnesium			8230	31600	22800	28700	13200	29900	22600	28600	13200
Manganese	5,100		1840	44000	28000	30700	28700	41700	27800	30500	29100
Molybdenum	11		5350 2.0	1 U	1 U	1 U	1 U	UJ	1 UJ	1.54 JD	1.99 JD
Nickel	730	52	250	46.3 D	31.2 D	38.2 D	6.74 JD	47.8 D	35.4 D	42.6 D	8.3 D
Potassium			7475	1790	1810	1860	2040	1680	1790	1840	2000
Selenium	180	5	250 50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.5 U
Silver	180		0.50	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U
Sodium			3470	9610	5350	8730	6280	9080	5260	8530	6210
Thallium			2.50 0.50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.5 U
Vanadium	260		50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U
Zinc	11,000	120	6450	19100	18700	15500	31300	18100	18600	15400	32700

J	The associated numerical value is an estimated quantity because quality control c
U	The analyte was not detected at or above the CRDL.
UJ	The reported quantitation limt is estimated because Quality Control criteria were
J-	The associated numerical value is an estimated quantity but the result may be bias
D	The analyte was identified in a sample at a secondary dilution factor

Sources: EPA 2004 (SCDM)

not at AT

lower at AT & GK7

adit discharges contain elevated [ ]: Al, Be, Cd, Ca, Co, Cu, Fe, Pb,

GK7 level extremely elevated

Mg, Mn, Ni, Zn

higher at Mogul

not so much at Mogul

(K, Na too)

TABLE 6
Adit Sediment Results

Field Sample ID: / Location: / Analytes	Superfund Chemical Data Matrix (SCDM) RDSC (mg/kg)	Superfund Chemical Data Matrix (SCDM) CRSC (mg/kg)	MCL/MCLG (mg/kg)	UAAD001 American Tunnel discharge (at portal) (mg/kg)	UAAD002 Upper Gold King 7 Level Mine adit discharge (mg/kg)	UAAD003 Red and Bonita Mine adit discharge (mg/kg)	UAAD004 Mogul Mine adit discharge (mg/kg)
Aluminum	-	-	-	5480	3170	4960	2320
Antimony	-	-	-	3.2 UJ	2.9 UJ	5.6 J	3.1 UJ
Arsenic	-	-	-	19.1 J	43.9 J	126 J	49.1 J
Barium	-	-	-	17.4	3.5	21.4	41.3
Beryllium	-	-	-	1.6 U	1.5 UJ	1.7 UJ	1.5 UJ
Cadmium	-	-	-	1.6 U	1.5 UJ	1.7 UJ	1.5 UJ
Calcium	-	-	-	? 1580 U	1490	1820	? 1530 U
Chromium	-	-	-	3.2 U	2.9 UJ	7.4 J	2.2 J
Cobalt	-	-	-	1.6 UJ	2.9 UJ	3.4 U	16.6
Copper	-	-	-	20.2	11 J	369 J	32.8 J
Iron	-	-	-	359000	445000	519000	462000
Lead	-	-	-	115 J	1740	59.4	419
Magnesium	-	-	-	644	1460 U	1680 U	1530 U
Manganese	-	-	-	280	107 J	130 J	2110 J
Nickel	-	-	-	1.6 U	1.5 UJ	1.7 UJ	1.7 J
Potassium	-	-	-	146 J+	1460 U	1680 U	1530 U
Selenium	-	-	-	7.9 UJ	7.3 UJ	8.4 UJ	7.6 UJ
Silver	-	-	-	1.6 UJ	1.5 UJ	1.7 UJ	1.5 UJ
Sodium	-	-	-	31.2 J+	1460 U	1680 U	1530 U
Thallium	-	-	-	1.6 J+	1.5 UJ	1.7 UJ	1.5 UJ
Vanadium	-	-	-	45.9	12.4	88	12
Zinc	-	-	-	282 J	361 J-	63.3 J-	232 J-

J	The associated numerical value is an estimated quantity because quality control criteria were not met. Presence of the element is reliable.
U	The analyte was not detected at or above the CRDL.
UJ	The reported quantitation limt is estimated because Quality Control criteria were not met. Element may not be present the sample.
J-	The associated numerical value is an estimated quantity but the result may be biased low.
J+	The associated numerical value is an estimated quantity but the result may be biased high
[ ]	The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory).

mg/kg

define

adit sediment samples contained Al, As, Ba, Ca, Cr, Co, Cu, Fe, Pb, Mg (only AT), Mn, Ni (only Mogul), K, Na, Th, V, Zn (only AT)

unless homogenizing samples very well, why dups on solids?

TABLE 7
PRD Results

Analyte	UASW005 Surface Water: South Fork of Cement Creek	UASW098 Duplicate of UASW005	RPD	UASE005 Sediment: South Fork of Cement Creek	UASE098 Duplicate of UASE005	RPD
Aluminum	720	572	22.9	8370	5550	40.5
Antimony	2.5 U	2.5 U	NA	1.3 UJ	1.5 U	NA
Arsenic	2.5 U	2.5 U	NA	11.6 J	11.7 J+	0.9
Barium	25 U	25 U	NA	78.8	190 J+	82.7
Beryllium	0.5 U	0.5 U	NA	0.66 J+	0.76 UJ	14.1
Cadmium	2.73 D	2.41 D	12.5	0.64 UJ	0.76 UJ	17.1
Calcium	162000	163000	0.6	1230	1500	19.8
Chromium	2.5 U	2.5 U	NA	6.2 J	4.8	25.5
Cobalt	7.71 D	7.36 D	4.6	6.5	4.3	40.7
Copper	8.83 D	6.5 D	30.4	65 J	34.5 J+	61.3
Iron	3230	3090	4.4	34800	30000	14.8
Lead	0.643 JD	0.5 U	NA	145	72.5 J	66.7
Magnesium	8230	8340	1.3	1460	2560	54.7
Manganese	1840	1860	1.1	839 J	568	38.5
Molybdenum	0.535 JD	0.5 U	NA	--	--	--
Nickel	2.5 U	2.5 U	NA	4.2 J	3.9 J	7.4
Potassium	747 J	752 J	0.7	902 J+	934 J+	3.5
Selenium	2.5 U	2.5 U	NA	3.2 UJ	3.8 U	NA
Silver	0.5 U	0.5 U	NA	0.64 UJ	0.76 UJ	17.1
Sodium	3470	3520	1.4	640 U	761 UJ	NA
Thallium	2.5 U	2.5 U	NA	0.64 UJ	0.52	20.7
Vanadium	5 U	5 U	NA	52.2	45.2	14.4
Zinc	647	661	2.1	145 J-	99 J	37.7

Analyte	UASW019 Surface Water: Mogul Mine Drainage (in wetland)	UASW099 Duplicate of UASW019	RPD	UASE019 Sediment: South Fork of Cement Creek	UASE099 Duplicate of UASE019	RPD
Aluminum	10100	10200	1.0	5960	8140	30.9
Antimony	2.5 U	2.5 U	NA	1.6 UJ	2 UJ	22.2
Arsenic	2.5 U	2.5 U	NA	62.5 J	86.3 J	32.0
Barium	25 U	25 U	NA	121	168	32.5
Beryllium	3.8 D	3.96 D	4.1	0.8 U	1 U	NA
Cadmium	72.8 D	74.2 D	1.9	1.4	1.2	15.4
Calcium	174000	174000	0.0	804 U	1030 U	NA
Chromium	2.5 U	2.5 U	NA	8.5	9.8	14.2
Cobalt	22.6 D	22.6 D	0.0	5.4	6.1	12.2
Copper	820 D	848 D	3.4	177	251	34.6
Iron	4460	4570	2.4	116000	154000	28.1
Lead	75.6 D	76.6 D	1.3	546 J	656 J	18.3
Magnesium	13600	13700	0.7	3260	4670	35.6
Manganese	21900	22000	0.5	1130	1400	21.3
Molybdenum	0.5 U	0.5 U	NA	--	--	--
Nickel	13.6 D	13.7 D	0.7	4.5	4.8	6.5
Potassium	1420	1440	1.4	842 J+	1120 J+	28.3
Selenium	2.5 U	2.5 U	NA	4 UJ	5.1 UJ	24.2
Silver	0.5 U	0.5 U	NA	5.1 J+	7.5 J+	38.1
Sodium	5520	5560	0.7	65.3 J+	98.1 J+	40.1
Thallium	2.5 U	2.5 U	NA	0.3 J+	0.31 J+	3.3
Vanadium	5 U	5 U	NA	42.6	44.3	3.9
Zinc	27600	27700	0.4	444 J	464 J	4.4

Analyte	UASW035 Surface Water: Mineral Creek downstream of Kendrick-Gelder Smelter	UASW097 Duplicate of UASW035	RPD	UASE035 Sediment: South Fork of Cement Creek	UASE097 Duplicate of UASE035	RPD
Aluminum	7890	7870	0.3	5900	4750	21.6
Antimony	2.5 U	2.5 U	NA	1.6 UJ	1.6 UJ	0.0
Arsenic	2.5 U	2.5 U	NA	41.7 J	44.2 J	5.8
Barium	25 U	25 U	NA	424 J	443	4.4
Beryllium	1.14 D	1.3 D	13.1	0.78 U	0.79 UJ	NA
Cadmium	6.57 D	6.45 D	1.8	0.83 J	0.79 UJ	4.9
Calcium	177000	175000	1.1	934	854	8.9
Chromium	2.5 U	2.5 U	NA	5.2	4.6 J	12.2
Cobalt	22.3 D	21.6 D	3.2	3.8 J	3.5	8.2
Copper	147 D	135 D	8.5	42.7 J	35.8 J	17.6
Iron	12000	11700	2.5	71700	73000	1.8
Lead	17.4 D	19 D	8.8	394	372	5.7
Magnesium	10900	10900	0.0	2440	1890	25.4
Manganese	4580	4810	4.9	421	344 J	20.1
Molybdenum	0.5 U	0.5 U	NA	--	--	--
Nickel	11 D	9.52 D	14.4	3.1 J	2.7 J	13.8
Potassium	1840	1800	2.2	1300 J+	1150 J+	12.2
Selenium	2.5 U	2.5 U	NA	1.5 J	4 UJ	90.9
Silver	0.5 U	0.5 U	NA	2.4 J+	2.2 J	8.7
Sodium	4550	4580	0.7	781 U	795 U	NA
Thallium	2.5 U	2.5 U	NA	0.78 U	0.79 UJ	NA
Vanadium	5 U	5 U	NA	40.7	37.2	9.0
Zinc	2340	2500	6.6	197 J	179 J-	9.6

Average Surface Water RPD 4.3 Average Sediment RPD 22.5