Table 6.1. Human Health Screening Assessment - Surface Water
Morning Star Mine
Mojave National Preserve, California

Analyte (µg/L)	Open Pit Mine (Bottom of Pit) 12/98	Open Pit Mine (Bottom of Pit) 12/98 (Dup)	Open Pit Mine (Bottom of Pit) 3/2/00	Leach Pad No. 1 / Pregnant Pond: External Pregnant Pond 12/98	External Pregnant Pond 2/99	External Pregnant Pond 3/2/00	External Pregnant Pond 5/24/01	Bottom of Pregnant Pond 12/98	Bottom of Pregnant Pond 2/99	Bottom of Pregnant Pond 3/2/00	Bottom of Pregnant Pond 5/24/01	Pregnant Pond Leak Detection System 12/98	Pregnant Pond Leak Detection System 2/99	Pregnant Pond Leak Detection System 3/2/00	Leach Pad No. 2: Leachate Collection System 12/98	Leachate Collection System 2/99	Leachate Collection System 3/2/00	Leachate Collection System 5/24/01	Leak Detection System 12/98	Leak Detection System 2/99	Leak Detection System 3/2/00	Leach Pad No. 2 (cont.): Standing Water (South Side) Dec. 98	Standing Water (South Side) Feb. 99	Standing Water (South Side) 3/2/00	Standing Water (South Side) 3/2/00 (Dup)	Standing Water (East Side) 12/98	Standing Water (East Side) 2/99	Standing Water (East Side) 3/2/00	Standing Water (East Side) 5/24/01	Region 9 USEPA Tap Water PRG [a]	California MCL [b]	RWQCB [c]
Total Cyanide	ND	ND	<10	**2,200**	**7,000**	**7,290**	**8,900**	ND	NA	<10	<10	NA	NA	<10	NA	**220**	**117**	**140**	NA	**1,100**	**369**	**1,100**	**1,800**	**1,840**	**1,040**	**700**	**1,600**	**1,030**	**830**	6.2	200	1
WAD Cyanide	NA	NA	NA[d]	NA	**1,300**	**1,540**	**79**	NA	**1,000**	NA[d]	**480**	**1,900**	**2,100**	NA[d]	**340**	**250**	**189**	<10	**1,100**	**450**	**26.9**	NA	**880**	**1,000**	**527**	**700**	**880**	**569**	<10	6.2	na	0.2
Arsenic	ND	ND	<50	ND	NA	<50	<50	ND	NA	<50	<50	ND	NA	<50	ND	NA	<50	<50	ND	NA	<50	ND	NA	<50	<50	ND	NA	<50	<50	0.045	50	na
Antimony	ND	ND	<50	ND	NA	<50	<50	ND	NA	<50	<50	ND	NA	<50	ND	NA	<50	<50	ND	NA	<50	ND	NA	<50	<50	ND	NA	<50	<50	15	6	na
Barium	ND	ND	14.9	46	NA	26.6	39.0	73	NA	70.1	64.0	73	NA	91.7	20	NA	20.6	18.0	35	NA	35.2	35	NA	14.4	335	35	NA	29.3	41.0	2,600	1,000	na
Beryllium	ND	ND	<1.0	ND	NA	<1.0	<1.0	ND	NA	<1.0	<1.0	ND	NA	<1.0	ND	NA	<1.0	<1.0	ND	NA	<1.0	ND	NA	<1.0	<1.0	ND	NA	<1.0	<1.0	73	4	na
Cadmium	ND	ND	<5.0	ND	NA	<5.0	<5.0	ND	NA	<5.0	<5.0	ND	NA	<5.0	ND	NA	5.92	<5.0	5.8	NA	<5.0	ND	NA	<5.0	<5.0	ND	NA	<5.0	<5.0	18	5	na
Chromium	ND	ND	<10	ND	NA	28.9	17.0	ND	NA	<10	<10	ND	NA	<10	ND	NA	<10	<10	ND	NA	<10	ND	NA	<10	<10	ND	NA	<10	<10	0.16 [e]	50	na
Cobalt	ND	ND	<7.0	940	NA	681	770	2,300	NA	2,760	2,700	2,200	NA	3,510	1,400	NA	1,480	1,400	1,600	NA	1,570	2,300	NA	2,060	2,210	1,600	NA	1,240	1,600	2,200	na	na
Copper	<10	ND	<10	44	NA	37.4	19.0	78	NA	50.8	53.0	110	NA	84.4	ND	NA	21.8	16.0	290	NA	152	260	NA	244	226	72	NA	91.4	57.0	1,400	1300	na
Lead	5.7	ND	<15	7.2	NA	<15	<15	ND	NA	<15	<15	ND	NA	<15	5.0	NA	<15	<15	ND	NA	<15	5.0	NA	20.8	<15	ND	NA	<15	<15	na	15	na
Mercury	ND	ND	<0.2	ND	NA	1.02	1.02	ND	NA	<0.2	<0.2	ND	NA	<0.2	ND	NA	<0.2	<0.2	ND	NA	<0.2	ND	NA	<0.2	<0.2	ND	NA	<0.2	<0.2	11	2	na
Molybdenum	ND	ND	<20	100	NA	173	120	370	NA	382	400	360	NA	486	120	NA	84.8	78.0	1,200	NA	615	970	NA	540	568	330	NA	304	260	180	na	na
Nickel	ND	ND	<30	ND	NA	<30	<30	ND	NA	<30	<30	ND	NA	<30	ND	NA	<30	<30	ND	NA	<30	ND	NA	<30	<30	ND	NA	<30	<30	730	100	na
Selenium	ND	ND	<50	ND	NA	<50	<50	62	NA	<50	<50	60	NA	<50	10	NA	<50	<50	13	NA	<50	16	NA	<100	<100	14	NA	<50	<50	180	50	na
Silver	ND	ND	<7.0	ND	NA	<7.0	<7.0	ND	NA	<7.0	<7.0	ND	NA	<7.0	ND	NA	<7.0	<7.0	ND	NA	<7.0	ND	NA	7.6	7.1	ND	NA	<7.0	<7.0	180	100	na
Thallium	6.3	ND	<2.0	11	NA	<2.0	<2.0	14	NA	<2.0	<2.0	17	NA	<2.0	18	NA	3.18	<2.0	8.8	NA	<2.0	17	NA	<2.0	<2.0	13	NA	<2.0	<2.0	2.4	2	na
Vandium	ND	ND	<10	ND	NA	<10	<10	ND	NA	<10	<10	ND	NA	<10	ND	NA	<10	<10	ND	NA	<10	ND	NA	<10	<10	ND	NA	<10	<10	260	na	na
Zinc	61	20	<20	17	NA	<20	<20	ND	NA	<20	<20	23	NA	<20	13	NA	<20	<20	74	NA	<20	56	NA	<20	<20	13	NA	<20	<20	11,000	5,000	na
pH	7.22	7.22	8.45	7.38	7.68	8.10	7.94	8.08	8.30	6.62	8.42	7.38	7.62	6.62	8.07	8.09	7.50	7.92	8.20	8.18	7.89	8.78	8.81	8.56	8.47	8.60	8.82	7.87	7.92	na	6.5 - 8.5	na

µg/L Micrograms per liter (equivalent to parts per billion).
<1.0 Not detected at indicated reporting limit.
NA Not analyzed.
ND Not detected. No detection limit found.
na Not available.
Dup Duplicate sample.
USEPA U.S. Environmental Protection Agency.
PRG Preliminary Remediation Goal.
MCL Maximum Contaminant Level.
RWQCB Regional Water Quality Control Board, Lahontan Region.
WAD Weak acid dissociable.

Exceeds PRG.
Exceeds MCL or exceeds MCL and PRG.
Exceeds LRWQCB requirement.

[a] From: USEPA, 2000a.
[b] From: DHS, 2001. Primary MCLs listed. Secondary MCLs used for silver, zinc, and pH. Action levels used for lead and copper.
[c] Lahontan Regional Water Quality Control Board (LRWQCB) discharge requirements for Morning Star Mine.
[d] Total cyanide is non-detect, therefore WAD cyanide would also be non-detect
[e] PRG for chromium VI presented.

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