TABLE 1
SOW vs. DQO REPORT
Leviathan Mine Site
Alpine County, California

	SOW Components	Activities Proposed in Step 7 of the DQO Report— "Develop a Detailed Plan for Obtaining Data"							
		Characterize mine features (ACSA, PSA, LCSA)	Map topography of the site, identify structural geology based on surface expressions (ACSA, PSA, LCSA)	Collect site-specific inflow-outflow data to construct water balance (precipitation, evaporation, streamflow, temperature, wind speed, evaporation, evapotranspiration, identification of springs) (ACSA, PSA, LCSA, OSA)	Analyze COPC concentrations in soil, groundwater, surface water, and sediments to support risk assessment/remedial evaluation (all study areas)	Assess potential uptake models by fish and plants to support risk assessment (ACSA, PSA, LCSA, OSA)	Collect geotechnical data (grain size, soil properties, water levels) and evaluate the stability of existing and future structures (ACSA, PSA, LCSA)	Collect data to determine the hydrologic properties of the aquifer to support plume delineation and fate and transport (water levels, aquifer tests, surface water/groundwater interactions, grain size analyses) (ACSA, PSA, LCSA)	Conduct geophysical surveys to identify subsurface properties. May include electromagnetic induction and/or electrical resistivity (ACSA, PSA, LCSA)
Remedial Investigation	**A) Environmental Setting and Pathway Characterization**								
	A.1) Hydrogeology								
	A.1.a) Analyze the water balance			X	X			X	
	A.1.b) Describe the regional and local geologic and hydrogeologic characteristics affecting groundwater flow beneath and downgradient of the site			X				X	
	A.1.c) Collect field data to identify hydrogeologic properties of the subsurface and potential migration pathways							X	
	A.1.d) Identify structural geology and develop hydrogeologic cross sections and fence diagrams		X					X	X
	A.1.e) Analyze topographic features that might influence groundwater flow		X						
	A.1.f) Develop a representative description of water level flow from regular periodic monitoring of groundwater elevation data in monitoring wells at the site and upgradient of the site							X	
	A.1.g) Describe man-made influences that may affect the hydrogeology in the vicinity of the Site	X	X						
	A.2) Surface Water and Sediment			X	X				
	A.2.a) Describe the water bodies that exist (elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies)			X					
	A.2.b) Install, calibrate, and maintain stream gauges for monitoring surface water flow rates			X					
	A.2.c) Describe the chemistry of the natural surface water				X				
	A.2.d) Stormwater monitoring			X	X				
	A.2.e) Characterize eroded stream sediments				X			X	
	A.2.f) Evaluate sediments behind the Ruhenstroth Dam site				X			X	

TABLE 1
SOW vs. DQO REPORT
Leviathan Mine Site
Alpine County, California

	SOW Components	Activities Proposed in Step 7 of the DQO Report— "Develop a Detailed Plan for Obtaining Data"							
		Characterize mine features (ACSA, PSA, LCSA)	Map topography of the site, identify structural geology based on surface expressions (ACSA, PSA, LCSA)	Collect site-specific inflow-outflow data to construct water balance (precipitation, evaporation, streamflow, temperature, wind speed, evaporation, evapotranspiration, identification of springs) (ACSA, PSA, LCSA, OSA)	Analyze COPC concentrations in soil, groundwater, surface water, and sediments to support risk assessment/remedial evaluation (all study areas)	Assess potential uptake models by fish and plants to support risk assessment (ACSA, PSA, LCSA, OSA)	Collect geotechnical data (grain size, soil properties, water levels) and evaluate the stability of existing and future structures (ACSA, PSA, LCSA)	Collect data to determine the hydrologic properties of the aquifer to support plume delineation and fate and transport (water levels, aquifer tests, surface water/groundwater interactions, grain size analyses) (ACSA, PSA, LCSA)	Conduct geophysical surveys to identify subsurface properties. May include electromagnetic induction and/or electrical resistivity (ACSA, PSA, LCSA)
Remedial Investigation	**B) Source Characterization**								
	B.1) Quantify disposal or release area characteristics	X	X		X				X
	B.2) Quantify waste characteristics				X				
	B.2.a) Type, quantity, and chemical composition of wastes placed in the area, including degradation and reaction byproducts				X				
	B.2.b) Physical and chemical characteristics of the waste, including mine waste classification in accordance with federal and state regulations				X				
	B.2.c) Migration and dispersal characteristics of the waste, including erosion, sorption, biodegradability, acid generating potential, hydrolysis rates, and chemical transformations				X			X	
	B.2.d) Biological effects of the waste on revegetation efforts and contaminant uptake potential					X			
	C) Contamination Characterization								
	C.1) Groundwater Geochemistry				X				
	C.2) Soil Geochemistry				X				
	C.3) Surface Water Geochemistry				X				
	C.4) Stream Sediment Geochemistry				X				
	C.5) Seasonal and annual mass transport of COPCs			X	X			X	
	D) Receptor Identification and Risk Assessments								
	D.1) Human Health Risk Assessment				X	X			
	D.2) Ecological Risk Assessment				X	X			
	E) Geotechnical Engineering Evaluation								
	E.1) Review groundwater level data						X	X	
	E.2) Complete geophysical surveys to determine subsurface geologic properties								X
	E.3) Visual inspection and assessment of existing structures	X	X						
	E.4) Completion of subsurface explorations to characterize the native materials							X	
	E.5) Assess interaction and connection between subsurface structures							X	
	E.6) Geotechnical assessment of the existing building structures for integrity, potential expansion, or new systems						X		X
	E.7) Geotechnical assessment of mine waste slopes and high walls for stability and safety						X		
	E.8) Landslide evaluation						X		X

TABLE 1
SOW vs. DQO REPORT
Leviathan Mine Site
Alpine County, California

	SOW Components	Activities Proposed in Step 7 of the DQO Report— "Develop a Detailed Plan for Obtaining Data"							
		Characterize mine features (ACSA, PSA, LCSA)	Map topography of the site, identify structural geology based on surface expressions (ACSA, PSA, LCSA)	Collect site-specific inflow-outflow data to construct water balance (precipitation, evaporation, streamflow, temperature, wind speed, evaporation, evapotranspiration, identification of springs) (ACSA, PSA, LCSA, OSA)	Analyze COPC concentrations in soil, groundwater, surface water, and sediments to support risk assessment/remedial evaluation (all study areas)	Assess potential uptake models by fish and plants to support risk assessment (ACSA, PSA, LCSA, OSA)	Collect geotechnical data (grain size, soil properties, water levels) and evaluate the stability of existing and future structures (ACSA, PSA, LCSA)	Collect data to determine the hydrologic properties of the aquifer to support plume delineation and fate and transport (water levels, aquifer tests, surface water/groundwater interactions, grain size analyses) (ACSA, PSA, LCSA)	Conduct geophysical surveys to identify subsurface properties. May include electromagnetic induction and/or electrical resistivity (ACSA, PSA, LCSA)
Feasibility Study	**A.) Detailed identification of contamination to be remediated and physical hazards to be removed. Contamination type, location, and volume defined. Develop PRGs.**	X			X		X		X
	B.) Identify alternatives that will protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route.								
	B.1) Overall protection of human health and the environment				X	X			
	B.2) Compliance with all applicable and appropriate federal, state, and tribal laws and regulations				X				
	B.3) Long-term effectivenees and permanence	To be determined. Pending results of Remedial Investigation							
	B.4) Reduction of toxicity, mobility, or volume through treatment	To be determined. Pending results of Remedial Investigation							
	B.5) Short-term effectiveness	To be determined. Pending results of Remedial Investigation							
	B.6) Implementability	To be determined. Pending results of Remedial Investigation							
	B.7) Cost	To be determined. Pending results of Remedial Investigation							
	B.8) State acceptance	To be determined. Pending results of Remedial Investigation							
	B.9) Community acceptance	To be determined. Pending results of Remedial Investigation							
	C.) An evaluation of alternatives based on the nine criteria stated above	To be determined. Pending results of Remedial Investigation							
	D.) Recommendation of a preferred remedial action plan for EPA approval	To be determined. Pending results of Remedial Investigation							
	E.) Schedule for implementation of a preferred remedial action plan.	To be determined. Pending results of Remedial Investigation							

TABLE 2
OWNERSHIP OF THE LEVIATHAN MINE PATENTED MINERAL CLAIMS
Leviathan Mine Site
Alpine County, California

Parcel Number/Name	Owner
Leviathan No. 5	State of California (CA)
Leviathan No. 6	CA
Leviathan No. 7	CA
Leviathan No. 8	CA
Leviathan No. 9	CA
Leviathan No. 10	CA
Leviathan No. 11	CA
Leviathan No. 12	CA
Leviathan No. 13	CA
Leviathan No. 14	Private
Leviathan No. 15	Private
Leviathan No. 16	Private
Leviathan No. 17	CA
Leviathan No. 18	CA
Leviathan No. 19	Private
Leviathan No. 20	Private
Leviathan No. 21	Private
Leviathan No. 22	Private
Leviathan No. 23	CA
Leviathan No. 24	CA
Leviathan No. 26	CA
Leviathan No. 27	CA
Leviathan No. 28	CA
Leviathan No. 29	CA
Leviathan No. 30	Private
Leviathan No. 31	CA
Leviathan No. 32	CA
Leviathan No. 43	CA
Copper Bar Claim	Private
Jenny Claim	CA
Nutty Henry Claim	CA
Pioneer Claim	CA

TABLE 3
MEDIAN CLIMATIC VALUES
Leviathan Mine Site
Alpine County, California

Variables	May-October	November-April
Temperature (degrees Fahrenheit)[a]	52.9	32.4
	(28.0-78.6)	(11.5-56.3)
Wind Speed (miles per hour)[a]	4	4
	(0.5-11.0)	(0-12.0)
Precipitation (inches)	12.3	8.5
	(0.2-3.0)	(0.95-11.0)
Evaporation (inches)[b]	1.4	3.1
	(9.2-19.1)	(6.2-8.5)

Notes
[a] Ranges (shown in parentheses) represent 95% of the measured data distribution.
[b] No measured data is available for summer or winter months for 2005, 2006, and 2007.

TABLE 4
STRATIGRAPHY OF COMMON ROCK TYPES FOUND IN ALPINE COUNTY
Leviathan Mine Site
Alpine County, California

Geologic Age			Rock Units	Rock Types	Mineral Deposits
Cenozoic	Quaternary	Holocene	Alluvium	Silt, sand, gravel	Sand and gravel, placer gold
		Pleistocene	Glacial moraines	Sand and gravel	Sand and gravel, placer gold
	Tertiary (primarily Miocene)		Volcanic rocks	Andesite tuff, breccia and flows; rhyolite, dacite	Sulfur, gold silver, copper, lead, zinc, mercury, antimony, arsenic, mineral specimens, stone
Mesozoic	Cretaceous		Granitic rocks	Granite, quartz monzonite, granodiorite, quartz diorite	Stone, gold, silver
	Pre-Cretaceous		Metamorphic rocks	Mica schist, quartzite, hornfels, tactite, crystalline limestone	Tungsten, gold, silver, mineral specimens, limestone

Source: William B. Clark, *Mines and Mineral Resources of Alpine County, California, California Division of Mines and Geology, County Report 8, 1977.*

TABLE 5
SITE STRATIGRAPHY
Leviathan Mine
Alpine County, California

Prior to Open-Pit Mining (Clark, 1977)[a]	After Open-Pit Mining (Based on surface mapping) (Herbst and Sciacca, 1982)[b]								After Open-Pit Mining (Based on boring logs) (USGS, 1985)[c]	After Open-Pit Mining (Based on boring logs) (SRK, 1999)[d]	
	Artificial Fill (Qaf)	Talus from mining activities (Qtm)	Debris Flows (Qdf)	Landslides (Qls)	Ponded Sediment (Qps)	Alluvium (Qal)			Mine Waste or Artificial Fill. Various colors. Mix of altered volcanic tuff, breccia, and agglomerate. Clay with cobble, gravel and sand. (Qaf-Qal) Maximum 115 feet thick observed in PZ-1B	Mine Waste or Artificial Fill. Various colors. Mix of acid leach tuff, conglomerate, andesite, agglomerate. Sandy to gravelly clay. (Qaf-Qal) Maximum 82 feet thick observed in MW-8	
		Talus (Qt)									
Silicified Cap Rock (maximum 160 feet thick)	Upper Sedimentary Sequence (Trs)	Quartz latite porphery (Tqlp)	Silicified iron-stained breccia (Tsib)	Silicified breccia (Tsb)				Ore Rock with Relict Breccia Texture (Tsob)	Upper Sedimentary Sequence. Grey, brown, green, blue. Agglomerate, altered volcanic tuff, breccia, lahar, sandstone, siltstone, and andesite. Gravelly to sandy clay. (Trs) Maximum of 161 feet observed in PZ-7	Upper Sedimentary Sequence (Trs) maximum of 70 feet observed in MW-2D	Sulfur Ore in Andesite (Tso) Maximum of 23 feet thick observed in MW-5D
Tuff - Massive (maximum 100 feet thick)			Chloritized Breccia (Trsb)		Argillated Altered Lahar (Trsab)	Lahar (Trsl)	Ore rock (Tso)				Interbedded grey, green, purple andesite, white, yellow, orange acid-leached tuff, and agglomerate. Clay with cobbles and angular gravel, sands, and silt.
Agglomerate (maximum 120 feet thick)			Argillated Altered Sandstone (Trsa)	Sandstone (Trss)							
Tuff - Massive, locally bedded (unknown thickness)											
Sulfur Ore (maximum 90 feet thick, 2400 feet wide)											Sulfur Ore in agglomerate (Tso) Maximum of 11 feet thick observed in MW-10D
			Basalt (Trb)								Interbedded grey, green, purple andesite, white, yellow, orange acid-leached tuff, and agglomerate. Clay with cobbles and angular gravel, sands, and silt.
			Autobrecciated Basalt (Trba)								
	Lower Sedimentary Sequence (Trc)		Sandstone Sequence (Trcs)								
			Lahar (Trcl)								
Andesite Bedrock (unknown thickness)		Hornblende pyroxene andesite (Tra)	Biotite Pyroxene Hornblende Andesite (Ta)	Leviathan Peak Andesite (Tlpa)	Altered Leviathan Peak Andesite (Tlpaa)						

Notes

[a] From accounts by Anaconda Mining Company geologists in *Mines and Mineral Resources of Alpine County, California, California Division of Mines and Geology, County Report 8* 1977.

[b] Interpreted from surface mapping information in Herbst, C.M., and Sciacca, J.E., 1982 *Geology of the Leviathan Sulfur Mine and Vicinity, California.*

[c] Interpreted from selected boring logs in Hammermeister, D.P., and Walmsley, S.J. (USGS), 1985 *Hydrologic Data for Leviathan Mine and Vicinity, Alpine County, California.* Selected boring logs include information from piezometers PZ-1A, PZ-1B, PZ-1C, PZ-2A, PZ-3A, clustered PZ-3B1 and PZ-3B2, PZ-3C, PZ-7, PZ-9A, PZ-10A, PZ-17A, clustered PZ-19A and PZ-19B, and PZ-33. Other borings not included due to lack of information or poor legibility.

[d] Interpreted from all boring logs MW-1 to MW-12 in *1998-1999 Data Summary Report, Administrative Order on Consent, Leviathan Mine, Alpine County, California.* Prepared by SRK Consulting for ARCO. December 1999.

TABLE 6
WELL CONSTRUCTION
Leviathan Mine Site
Alpine County, California

Monitoring Well or Piezometer ID	Install Date	Well Diameter (inches)	Northing	Easting	Well Total Depth (ft bgs)	Casing Top Elevation (ft above msl	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Screened Lithology	Study Area
MW-1	1998	4	385684.277	2668848.497	71.1	7085.27	51	70.2	Trs	LCSA
MW-2D	1998	4	386459.405	2668627.719	84.6	7043.84	69.7	83.8	Trs	PSA
MW-2S	1998	4	386456.261	2668628.319	48	7043.92	28.1	47.2	Trs	PSA
MW-3	1998	4	387129.332	2668741.993	41	7076.39	26.1	40.2	Trs	PSA
MW-4	1998	4	387505.225	2669358.217	33	7160.02	18.1	32.2	Trs	PSA
MW-5D	1998	4	386528.475	2669272.112	79	7105.14	64.1	78.2	Trs	PSA
MW-5S	1998	4	386530.531	2669270.875	46	7104.02	26.1	45.2	Trs	PSA
MW-6	1998	4	386285.423	2668236.238	91.5	7041.82	71.6	90.7	Trs	LCSA
MW-7	1998	4	385629.949	2667410.495	34	7044.97	19.1	33.2	Q-Trs	LCSA
MW-8	1998	4	386474.242	2667588.109	150	7043.38	130.1	149.2	Trs	LCSA
MW-9	1998	4	386808.441	2667741.76	27	6990.64	12.1	26.2	Trs	LCSA
MW-10D	1998	4	386889.175	2667419.168	75	6921.38	55.1	74.2	Trs	LCSA
MW-10S	1998	4	386890.624	2667417.734	39	6919.23	19.1	38.2	Trs	LCSA
MW-11	1998	4	386689.181	2666950.411	18	6924.43	8.1	17.2	Q-Trs	LCSA
MW-12	1998	4	387656.426	2667189.258	69.1	6898.74	49.2	68.3	Trs	LCSA
PZ-1A	1980	2	386114.081	2667387.667	200.5	7106.98	116	156	Q-Trs	LCSA
PZ-1B	1982	2	386366.66	2667433.713	136	7054.95	96	136	Q-Trs	LCSA
PZ-1C	1982	2	386285.048	2667722.547	131	7055.69	111	131	Q-Trs	LCSA
PZ-2A1	1982	2	386997.285	2668883.175	21	7057.61	15	21	Q	PSA
PZ-2A2	1982	2	387000.317	2668883.933	10	7058.08	7	10	Q	PSA
PZ-2B1	1982	2	387202.853	2668758.878	22	7067.37	17.5	22	Trs	PSA
PZ-2C1	1982	2	386878.052	2669364.226	31	7065.63	26	31	Trs	PSA
PZ-2C2	1982	2	386880.61	2669364.891	15	7065.08	10	15	Q	PSA
PZ-3A	1982	2	389303.166	2669345.127	118.5	7062.55	108.5	118.5	Trs	ACSA
PZ-3B1	1982	2	388691.265	2669720.916	82	7105.11	72	82	Trs	ACSA
PZ-3B2	1982	2	388686.649	2669719.28	25	7105.43	15	25	Q	ACSA
PZ-3C	1982	2	389131.196	2669636.062	90	7121.86	80	90	Trs	ACSA

TABLE 6
WELL CONSTRUCTION
Leviathan Mine Site
Alpine County, California

Monitoring Well or Piezometer ID	Install Date	Well Diameter (inches)	Northing	Easting	Well Total Depth (ft bgs)	Casing Top Elevation (ft above msl	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Screened Lithology	Study Area
PZ-4	1982	2	390339.338	2667990.891	100	6794.03	80	100	?	ACSA
PZ-5	1982	2	390201.274	2668583.482	103	6853.9	93	103	?	ACSA
PZ-5A	1982	2	390197.165	2668579.687	31	6854.3	21	31	?	ACSA
PZ-6	1982	2	390105.792	2668753.565	32	6897.1	12	32	?	ACSA
PZ-7	1982	2	389546.829	2668260.202	163	6857.77	143	163	Trs	ACSA
PZ-8	1982	2	390676.355	2668797.613	135	6799.05	125	135	?	ACSA
PZ-8A	1982	2	390670.91	2668800.116	49	6799.2	39	49	?	ACSA
PZ-9A	1982	2	386796.279	2667454.105	52	6901.33	47	52	Trs	LCSA
PZ-9B	1982	2	386796.457	2667459.366	25	6900.35	20	25	Q	LCSA
PZ-9C	1982	2	386796.789	2667464.368	15	6900.55	10	15	Q	LCSA
PZ-10A	1982	2	386989.599	2667351.441	50	6893.33	45	50	Trs	LCSA
PZ-10B	1982	2	386985.898	2667351.819	25	6894.51	20	25	Q	LCSA
PZ-10C	1982	2	386981.791	2667352.803	15	6893.66	10	15	Q	LCSA
PZ-11A	1982	2	387112.655	2667248.603	55	6889.51	50	55	Trs	LCSA
PZ-11B	1982	2	387117.887	2667248.052	30	6889.07	25	30	Q	LCSA
PZ-11C	1982	2	387117.205	2667212.145	15	6889.48	10	15	Q	LCSA
PZ-14	1982	2	386440.36	2668472.652	91	7037.77	71	91	Q-Trs	LCSA
PZ-15	1982	2	386598.262	2668007.534	31.5	6992	19	31.5	Q-Trs	LCSA
PZ-16	1982	2	386621.402	2667792.16	62	6990.76	42	62	Q-Trs	LCSA
PZ-17A	1982	2	386491.65	2669326.669	65	7100	55	65	Trs (Tunnel?)	PSA
PZ-17B	1982	2	386484.686	2669441.493	70	7102.84	54.5	64.5	Trs	PSA
PZ-17C	1982	2	386477.488	2669547.423	95	7128.42	80	90	Trs	PSA
PZ-18A	1982	2	386878.16	2667321.35	47	6895	42	47	Q	LCSA
PZ-18B	1982	2	386874.842	2667319.501	25	6894.11	20	25	Q	LCSA
PZ-18C	1982	2	386871.91	2667317.647	15	6895.03	10	15	Q	LCSA
PZ-19A	1982	2	389140.055	2669962.863	82	7079.12	72	82	Trs	ACSA

TABLE 6
WELL CONSTRUCTION
Leviathan Mine Site
Alpine County, California

Monitoring Well or Piezometer ID	Install Date	Well Diameter (inches)	Northing	Easting	Well Total Depth (ft bgs)	Casing Top Elevation (ft above msl	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Screened Lithology	Study Area
PZ-19B	1982	2	389138.399	2669992.24	40	7080.35	30	40	Q	ACSA
PZ-20	1982	2	390783.581	2667975.097	32	6710.68	22	32	?	ACSA
PZ-20A	1982	2	390794.487	2667985.325	92	6710.02	82	92	?	ACSA
PZ-21	1982	2	389704.135	2668814.63	45	6941.97	35	45	?	ACSA
PZ-22	1982	2	385726	2669197.07	91.5	7151.2	77.5	87.5	?	LCSA
PZ-23A	1982	2	387894.963	2670701.382	68.5	7322.71	58.5	68.5	?	ACSA
PZ-24	1982	2	386875.208	2670928.497	65	7434.68	55	65	?	ACSA
PZ-25	1982	2	387220.009	2671002.31	115.5	7382.4	105	115	?	ACSA
PZ-26	1982	2	387220.009	2671002.31	60	7107	50	60	?	ACSA
PZ-27	1982	2	387220.009	2671002.31	73	7097	NA	NA	?	ACSA
PZ-31	1982	2	385609.787	2670196.177	157	7314.43	NA	NA	?	PSA
PZ-32	1982	2	385683.916	2670312.205	129	7333.25	113.5	128.5	?	PSA
PZ-33	1982	2	385931.611	2669994.926	122	7298.65	80.5	120.5	Trs	PSA

Notes

Northing and easting data based on California State Plane Coordinates.

Piezometer (PZ) construction data source from Hammermeister, D.P., and Walmsley, S.J., 1985, *Hydrologic Data for Leviathan Mine and Vicinity, Alpine County, California, 1981-1983*, U.S. Geological Survey Open-File Report 85-160, 161 pp.

Monitoring well (MW) construction data source from SRK Consulting, 1999, *1998-1999 Data Summary Report, Administrative Order on Consent, Leviathan Mine, Alpine County, California*, December.

Coordinates and well construction details were provided for borings B-1 through B-9. Screened lithology in all borings within "Q."

Abbreviations

ACSA = Aspen Creek study area
LCSA = Leviathan Creek study area
PSA = Pit study area
ft bgs = feet below ground surface
msl = mean sea level
NA = not applicable
Q = Quaternary-age geologic units
Trs = Tertiary-age upper sedimentary sequence
? = unknown or insufficient data

TABLE 7
PAST GROUNDWATER ELEVATIONS
Leviathan Mine Site
Alpine County, California

Monitoring Well or Piezometer ID	Elevation TOC (ft above msl)	Screened Lithology	Study Area	Depth To Water (ft below TOC)										Groundwater Elevation (ft above msl)									
				USGS				SRK	Kleinfelder					USGS				SRK	Kleinfelder				
				Oct-82	Nov-82	Dec-82	Apr-83	Nov-98	9/24/01	10/5/01	10/17/01	10/24/01	11/20/01	Oct-82	Nov-82	Dec-82	Apr-83	Nov-98	9/24/01	10/5/01	10/17/01	10/24/01	11/20/01
Open-Pit Area																							
PZ-2A1	7057.61	Q	PSA		1.51		0.31								7056.10		7057.30						
PZ-2A2	7058.08	Q	PSA		1.68		0.45								7056.40		7057.63						
PZ-2C2	7065.08	Q	PSA		6.80		4.20								7058.28	7056.93	7060.88	7058.60					
PZ-2B	7067.37	Trs	PSA		10.91		8.95								7056.46		7058.42						
PZ-2C1	7065.63	Trs	PSA		10.91		9.00								7054.72		7056.63						
PZ-17B	7102.84	Trs	PSA		45.95										7056.89								
PZ-17C	7128.42	Trs	PSA		72.53										7055.89								
MW-2D	7043.84	Trs	PSA					27.78										7016.06					
MW-2S	7043.92	Trs	PSA					27.52										7016.40					
MW-3	7076.39	Trs	PSA					21.43										7054.96					
MW-4	7160.02	Trs	PSA					24.85										7135.17					
MW-5D	7105.14	Trs	PSA					76.91										7028.23					
MW-5S	7104.02	Trs	PSA					Dry										Dry					
PZ-17A	7100	Trs/Tunnel?	PSA		50.59										7049.41								
Upper Landslide Area																							
PZ-3B2	7105.43	Q	ACSA		21.92		19.30								7083.51		7086.13						
PZ-19B	7080.35	Q	ACSA		18.90	19.00									7061.45	7061.35							
PZ-3A	7062.55	Trs	ACSA		100.50		102.50								6962.05		6960.05						
PZ-3B1	7105.11	Trs	ACSA		25.00		24.50								7080.11		7080.61						
PZ-3C	7121.86	Trs	ACSA		47.86		56.00								7074.00		7065.86						
PZ-19A	7079.12	Trs	ACSA		24.90	26.25									7054.22	7052.87							
Lower Landslide Area																							
PZ-4	6794.03	?	ACSA		51.23	51.50	45.10								6742.80	6742.53	6748.93						
PZ-5	6853.9	?	ACSA		58.30										6795.60								
PZ-5A	6854.3	?	ACSA		21.25	22.17									6833.05	6832.13							
PZ-6	6897.1	?	ACSA		6.77	6.83									6890.33	6890.27							
PZ-8	6799.05	?	ACSA		68.32		62.80								6730.73		6736.25						
PZ-8A	6799.2	?	ACSA		21.74		21.80								6777.46		6777.40						
PZ-20	6710.68	?	ACSA		2.91	2.80	2.40								6707.77	6707.88	6708.28						
PZ-20A	6710.02	?	ACSA		45.31	45.00	40.60								6664.71	6665.02	6669.42						
PZ-21	6941.97	?	ACSA		39.10	39.21	39.10								6902.87	6902.76	6902.87						
PZ-7	6857.77	Trs	ACSA		45.67		45.90								6812.10		6811.87						
Delta Area																							
PZ-9B	6900.35	Q	LCSA		2.00										6898.35								
PZ-9C	6900.55	Q	LCSA		1.51										6899.04								
PZ-10B	6894.51	Q	LCSA		Flowing										Flowing								
PZ-10C	6893.66	Q	LCSA		0.45										6893.21								
PZ-11B	6889.07	Q	LCSA		2.29										6886.78								
PZ-11C	6889.48	Q	LCSA		1.13										6888.35								
PZ-18A	6895	Q	LCSA		0.23										6894.77								
PZ-18B	6894.11	Q	LCSA		0.83										6893.28								
PZ-18C	6895.03	Q	LCSA		1.65										6893.38								
PZ-9A	6901.33	Trs	LCSA		5.90										6895.43								
PZ-10A	6893.33	Trs	LCSA		0.50										6892.83								
PZ-11A	6889.51	Trs	LCSA		3.55										6885.96								
MW-10D	6921.38	Trs	LCSA					19.79										6901.59					
MW-10S	6919.23	Trs	LCSA					15.90										6903.33					
MW-12	6898.74	Trs	LCSA					43.38					47.92					6855.36					
B-1	?	Q	LCSA						33.6	33.9	33.7	33.7	33.86						?	?	?	?	?
B-2	?	Q	LCSA						45.6	50	50.1	50.6	50.8						?	?	?	?	?
B-3	?	Q	LCSA						36		36.2	36.2	36.29						?	?	?	?	?
B-4	?	Q	LCSA							27.5	25.4	24.1	20.45						?	?	?	?	?
B-5	?	Q	LCSA						34.7	35	26.9	27.1	29.51						?	?	?	?	?
B-6	?	Q	LCSA						22.3	21	21.9	22	22.42						?	?	?	?	?
B-7	?	Q	LCSA						25	24.1	24.2	24.15	24.23						?	?	?	?	?
B-8	?	Q	LCSA						10.2	9.8	10.5	10.6	11.17						?	?	?	?	?
B-9	?	Q	LCSA						23.1	22.2	22.8	22.8	23.33						?	?	?	?	?

TABLE 7
PAST GROUNDWATER ELEVATIONS
Leviathan Mine Site
Alpine County, California

Monitoring Well or Piezometer ID	Elevation TOC (ft above msl)	Screened Lithology	Study Area	Depth To Water (ft below TOC)										Groundwater Elevation (ft above msl)									
				USGS				SRK	Kleinfelder					USGS				SRK	Kleinfelder				
				Oct-82	Nov-82	Dec-82	Apr-83	Nov-98	9/24/01	10/5/01	10/17/01	10/24/01	11/20/01	Oct-82	Nov-82	Dec-82	Apr-83	Nov-98	9/24/01	10/5/01	10/17/01	10/24/01	11/20/01
Waste Dump																							
PZ-1A	7106.98	Q-Trs	LCSA		126.53										6980.45								
PZ-1B	7054.95	Q-Trs	LCSA		85.20		63.70								6969.75		6991.25						
PZ-1C	7055.69	Q-Trs	LCSA		73.20		66.60								6982.49		6989.09						
MW-7	7044.97	Q-Trs	LCSA					25.35										7019.62					
MW-11	6924.43	Q-Trs	LCSA					11.19										6913.24					
MW-8	7043.38	Trs	LCSA					87.60					43.10					6955.78					
Between the Open-Pit Area and Waste Dump																							
PZ-14	7037.77	Q-Trs	LCSA	32.13			27.70							7005.64			7010.07						
PZ-15	6992	Q-Trs	LCSA		17.54										6974.46								
PZ-16	6990.76	Q-Trs	LCSA		51.24		49.73								6939.52		6941.03						
MW-6	7041.82	Trs	LCSA					67.49										6974.33					
MW-9	6990.64	Trs	LCSA					29.26										6961.38					
South of the Pit																							
PZ-22	7151.2	?	LCSA		67.57		66.50								7083.63		7084.70						
PZ-23A	7322.71	?	ACSA		50.49	50.92									7272.22	7271.79							
PZ-24	7434.68	?	ACSA		50.54	51.17									7384.14	7383.51							
PZ-25	7382.4	?	ACSA		98.03	97.90									7284.37	7284.50							
PZ-26	7107	?	ACSA		84.42										7022.58								
PZ-27	7097	?	ACSA																				
PZ-31	7314.43	?	PSA	122.05										7192.38									
PZ-32	7333.25	?	PSA	40.37			39.40							7292.88			7293.85						
PZ-33	7298.65	Trs	PSA	27.31										7271.34									
MW-1	7085.27	Trs	LCSA					55.47										7029.80					

Abbreviations

ACSA = Aspen Creek Study Area
LCSA = Leviathan Creek Study Area
PSA = Pit Study Area
B = geotechnical well (Kleinfelder, 2001)
ft above msl = feet above mean sea level
ft below TOC = feet below top of casing
MW = monitoring well (SRK, 1999)
PZ = piezometer (Hammermeister and Walmsley, 1985)
Q = Quaternary-age units
SRK = SRK Consulting
TOC = top of casing
Trs = Tertiary-age upper sedimentary sequence
USGS = U.S. Geological Survey
? = Unknown or insufficient data

TABLE 8
CURRENT GROUNDWATER ELEVATIONS
Leviathan Mine Site
Alpine County, California

Date	MW-1	MW-2D	MW-2S	MW-3	MW-4	MW-5D	MW-5S	MW-6	MW-7	MW-8	MW-9	MW-10D	MW-10S	MW-11	PZ-25	PZ-31	PZ-33	Measured By:
	Depth to Water (feet below TOC)																	
7/7/2006	76.18	85.83	50.33	42.39	35.39	84.38	47.68	98.4	35.35	159.4	29.34	76.98	40.31	20.37	106.6	1623	112.1	Tetra Tech
8/16/2006	73.3	85.81	50.24	42.37	35.19	80.33	Dry	92.83	35.28	151.4	29.27	76.9	40.24	20.3	107.56	109.14	112.5	Tetra Tech
7/7/2006	55.81	24.7	24.76	26.8	24.82	53.71	Dry	60.36	23.3	80.46	Dry	6.08	3.78	7.72				Tetra Tech
7/26/2006	57.84	27.64	27.71	22.72	26.65	56.65	Dry	64.39	25.25	83.39	29.15	10.77	8.26	11.4	99.52	Dry	50.2	Tetra Tech
8/8/2006	56.2	26.5	26.55	20.99	24.85	54.6	Dry	63.68	23.49	82.48	Dry	11.26	8.59	10.81	98.98	Dry	35.1	Tetra Tech
8/16/2006	56.26	26.83	26.9	21.03	24.85	54.75	Dry	64.3	23.45	83.06	29.1	12.58	9.82	11.44	98.26	109.13	71.6	Tetra Tech
8/23/2006	56.4	27.12	27.2	21.04	24.83	54.91	Dry	64.78	23.52	83.64	29.3	13.75	10.84	11.84	98.28	Dry	35.5	Tetra Tech
8/30/2006	56.57	27.32	27.38	21.1	24.84	54.99	Dry	65.21	23.54	84.18	29.13	14.77	11.7	12.16	98.3		36.16	Tetra Tech
9/8/2006	56.74	27.58	27.65	21.13	24.88	55.14	Dry	65.75	23.56	84.85	29.12	15.96	12.73	12.52	98.32		36.16	Tetra Tech
9/27/2006	56.69	28.28	28.33	21.29	24.9	55.41	Dry	66.74	23.59	86.28	29.15	18	14.58	12.92	98.98		37.24	Tetra Tech
10/5/2006	56.72	28.37	28.46	21.31	24.91	55.51	Dry	66.97	23.7	86.68	29.11	18.64	15.13	13.02	98.41		37.54	Tetra Tech
10/12/2006	56.53	28.51	28.59	21.32	24.92	55.6	Dry	67.22	23.62	87.09	29.14	19.26	15.64	13.02	98.43		37.84	Tetra Tech
10/18/2006	56.48	28.73	28.81	21.39	24.9	55.64	Dry	67.39	23.71	87.42	29.15	19.73	16.05	13.07	98.43		38.07	Tetra Tech
10/25/2006	56.45	28.86	28.95	21.46	24.93	55.73	Dry	67.51	23.69	87.75	29.11	20.16	16.48	13.01	98.46		38.36	Tetra Tech
11/16/2006	56.51	29.1	29.17	21.49	24.92	55.88	Dry	67.95	23.69	88.58	29.14	21.26	17.41	12.8	98.51		38.97	Tetra Tech
6/7/2007	56.37	30.26	30.32	22.4	24.95	56.55	Dry	68.8	23.78	89.94	29.23	22.61	18.97	12.38			36.06	USACE
7/5/2007	57.77	30.35	30.4		24.99	56.57	Dry	69.36	24.21	90.63	Dry	23.63	19.84	12.93	98.74		37.75	USACE
8/9/2007	60.31	30.52	30.58	22.75	24.98	56.69	Dry	70.52	24.49	91.63	Dry	24.33	20.51	13.38	98.78		40.53	USACE
9/13/2007	60.62	30.66	30.73	22.94	25.04	56.76	Dry	71.43	24.68	91.63	Dry	24.79	20.94	13.93	98.87		44.13	USACE
10/11/2007	57.9	30.83	30.88	23.11	25.04	56.81	Dry	71.69	24.69	92.97	Dry	24.97	21.15	14.22	98.92		47.42	USACE
6/10/2008	55.21	29.41	29.49	21.80	24.87	56.07	Dry	66.61	23.07	88.44	29.23	16.96	14.09	11.11	98.25		46.95	Burleson
6/19/2008	55.89	29.59	29.63	21.88	24.93	56.12	Dry	66.97	23.22	88.47	29.23	17.83	14.84	11.52	98.29		46.93	Burleson
7/3/2008	56.70	29.72	29.66	21.98	24.93	56.14	Dry	67.60	23.28	88.62	29.20	19.28	16.00	12.05	98.32		47.28	Burleson
7/10/2008	57.16	29.75	29.80	21.96	24.92	56.15	Dry	67.94	23.28	88.88		19.99	16.65	12.34	98.43		47.73	Burleson
7/24/2008	58.19	29.90	30.00	22.01	24.95	56.14	Dry	67.75	23.80	89.52		21.40	17.91	12.75	98.38		48.54	Burleson
8/14/2008	60.10	30.24	30.30	22.24	24.95	56.29	Dry	69.89	23.89	90.56		23.15	19.48	13.14	98.49		50.59	Burleson
8/28/2008	60.82	30.42	30.49	23.57	24.96	56.29	Dry	70.58	24.00	91.17		23.86	20.15	13.36	98.58		51.64	Burleson
10/16/2008	60.55	30.95	29.99	22.79	25.00	56.56	Dry	71.93	24.25	99.90		24.75	20.99	14.15	98.91		54.70	Burleson

Date	Groundwater Elevation[1] (feet above msl)																	Measured By:
	MW-1	MW-2D	MW-2S	MW-3	MW-4	MW-5D	MW-5S	MW-6	MW-7	MW-8	MW-9	MW-10D	MW-10S	MW-11	PZ-25	PZ-31	PZ-33	
	TOC Elevation (feet above msl)																	
	7085.27	**7043.84**	**7043.92**	**7076.39**	**7160.02**	**7105.14**	**7104.02**	**7041.82**	**7044.97**	**7043.38**	**6990.64**	**6921.38**	**6919.23**	**6924.43**	**7382.40**	**7314.43**	**7298.65**	
7/7/2006	7009.09	6958.01	6993.59	7034.00	7124.63	7020.76	7056.34	6943.42	7009.62	6883.98	6961.30	6844.40	6878.92	6904.06	7275.80	5691.43	7186.55	Tetra Tech
8/16/2006	7011.97	6958.03	6993.68	7034.02	7124.83	7024.81	Dry	6948.99	7009.69	6891.98	6961.37	6844.48	6878.99	6904.13	7274.84	7205.29	7186.15	Tetra Tech
7/7/2006	7029.46	7019.14	7019.16	7049.59	7135.20	7051.43	Dry	6981.46	7021.67	6962.92	Dry	6915.30	6915.45	6916.71	7382.40		7298.65	Tetra Tech
7/26/2006	7027.43	7016.20	7016.21	7053.67	7133.37	7048.49	Dry	6977.43	7019.72	6959.99	6961.49	6910.61	6910.97	6913.03	7282.88	Dry	7248.45	Tetra Tech
8/8/2006	7029.07	7017.34	7017.37	7055.40	7135.17	7050.54	Dry	6978.14	7021.48	6960.90	Dry	6910.12	6910.64	6913.62	7283.42	Dry	7263.55	Tetra Tech
8/16/2006	7029.01	7017.01	7017.02	7055.36	7135.17	7050.39	Dry	6977.52	7021.52	6960.32	6961.54	6908.80	6909.41	6912.99	7284.14	7205.30	7227.05	Tetra Tech
8/23/2006	7028.87	7016.72	7016.72	7055.35	7135.19	7050.23	Dry	6977.04	7021.45	6959.74	6961.34	6907.63	6908.39	6912.59	7284.12	Dry	7263.15	Tetra Tech
8/30/2006	7028.70	7016.52	7016.54	7055.29	7135.18	7050.15	Dry	6976.61	7021.43	6959.20	6961.51	6906.61	6907.53	6912.27	7284.10		7262.49	Tetra Tech
9/8/2006	7028.53	7016.26	7016.27	7055.26	7135.14	7050.00	Dry	6976.07	7021.41	6958.53	6961.52	6905.42	6906.50	6911.91	7284.08		7262.49	Tetra Tech
9/27/2006	7028.58	7015.56	7015.59	7055.10	7135.12	7049.73	Dry	6975.08	7021.38	6957.10	6961.49	6903.38	6904.65	6911.51	7283.42		7261.41	Tetra Tech
10/5/2006	7028.55	7015.47	7015.46	7055.08	7135.11	7049.63	Dry	6974.85	7021.27	6956.70	6961.53	6902.74	6904.10	6911.41	7283.99		7261.11	Tetra Tech
10/12/2006	7028.74	7015.33	7015.33	7055.07	7135.10	7049.54	Dry	6974.60	7021.35	6956.29	6961.50	6902.12	6903.59	6911.41	7283.97		7260.81	Tetra Tech
10/18/2006	7028.79	7015.11	7015.11	7055.00	7135.12	7049.50	Dry	6974.43	7021.26	6955.96	6961.49	6901.65	6903.18	6911.36	7283.97		7260.58	Tetra Tech
10/25/2006	7028.82	7014.98	7014.97	7054.93	7135.09	7049.41	Dry	6974.31	7021.28	6955.63	6961.53	6901.22	6902.75	6911.42	7283.94		7260.29	Tetra Tech
11/16/2006	7028.76	7014.74	7014.75	7054.90	7135.10	7049.26	Dry	6973.87	7021.28	6954.80	6961.50	6900.12	6901.82	6911.63	7283.89		7259.68	Tetra Tech
6/7/2007	7028.90	7013.58	7013.60	7053.99	7135.07	7048.59	Dry	6973.02	7021.19	6953.44	6961.41	6898.77	6900.26	6912.05			7262.59	USACE
7/5/2007	7027.50	7013.49	7013.52		7135.03	7048.57	Dry	6972.46	7020.76	6952.75	Dry	6897.75	6899.39	6911.50	7283.66		7260.90	USACE
8/9/2007	7024.96	7013.32	7013.34	7053.64	7135.04	7048.45	Dry	6971.30	7020.48	6951.75	Dry	6897.05	6898.72	6911.05	7283.62		7258.12	USACE
9/13/2007	7024.65	7013.18	7013.19	7053.45	7134.98	7048.38	Dry	6970.39	7020.29	6951.75	Dry	6896.59	6898.29	6910.50	7283.53		7254.52	USACE
10/11/2007	7027.37	7013.01	7013.04	7053.28	7134.98	7048.33	Dry	6970.13	7020.28	6950.41	Dry	6896.41	6898.08	6910.21	7283.48		7251.23	USACE
6/10/2008	7030.06	7014.43	7014.43	7054.59	7135.15	7049.07	Dry	6975.21	7021.90	6954.94	6961.41	6904.42	6905.14	6913.32	7284.15		7251.70	Burleson
6/19/2008	7029.38	7014.25	7014.29	7054.51	7135.09	7049.02	Dry	6974.85	7021.75	6954.91	6961.41	6903.55	6904.39	6912.91	7284.11		7251.72	Burleson
7/3/2008	7028.57	7014.12	7014.26	7054.41	7135.09	7049.00	Dry	6974.22	7021.69	6954.76	6961.44	6902.10	6903.23	6912.38	7284.08		7251.37	Burleson
7/10/2008	7028.11	7014.09	7014.12	7054.43	7135.10	7048.99	Dry	6973.88	7021.69	6954.50		6901.39	6902.58	6912.09	7283.97		7250.92	Burleson
7/24/2008	7027.08	7013.94	7013.92	7054.38	7135.07	7049.00	Dry	6974.07	7021.17	6953.86		6899.98	6901.32	6911.68	7284.02		7250.11	Burleson
8/14/2008	7025.17	7013.60	7013.62	7054.15	7135.07	7048.85	Dry	6971.93	7021.08	6952.82		6898.23	6899.75	6911.29	7283.91		7248.06	Burleson
8/28/2008	7024.45	7013.42	7013.43	7052.82	7135.06	7048.85	Dry	6971.24	7020.97	6952.21		6897.52	6899.08	6911.07	7283.82		7247.01	Burleson
10/16/2008	7024.72	7012.89	7013.93	7053.60	7135.02	7048.58	Dry	6969.89	7020.72	6943.48		6896.63	6898.24	6910.28	7283.49		7243.95	Burleson

1. Groundwater elevation is the depth to water subtracted from the TOC elevation.

Abbreviations
msl = mean sea level TOC = top of casing USACE = U.S. Army Corps of Engineers

TABLE 9
PRISM ESTIMATED PRECIPITATION
Leviathan Mine Site
Alpine County, California

Month	Mean Precipitation 1971 – 2000 (inches)	Minimum Precipitation 1971 – 2000 (inches)	Maximum Precipitation 1971 – 2000 (inches)
January	5.21	0.39	13.31
February	5.18	0.34	20.6
March	4.52	0.32	16.96
April	1.83	0.19	5.42
May	1.57	0.06	5.13
June	0.81	0.02	2.76
July	0.56	0	2.05
August	0.67	0	4.16
September	1.04	0	3.83
October	1.99	0.04	7.17
November	3.89	0.22	14.01
December	4.22	0.12	15.63
Annual Total	31.49	1.7	111.03

TABLE 10
MONTHLY AVERAGE STREAMFLOW FOR GAUGED STATIONS NEAR LEVIATHAN MINE
Leviathan Mine Site
Alpine County, California

Month	1999 – 2008 (cfs)			2004 – 2008 (cfs)	
	Station 1	Station 15	Station 23	4L Creek	Station 22
January	0.18	0.36	1.06	0.07	0.19
February	0.19	0.51	1.13	0.08	0.19
March	0.54	1.31	2.73	0.29	0.22
April	1.93	3.32	5.49	0.72	0.27
May	2.18	3.63	3.62	1.13	0.22
June	0.34	0.71	0.77	0.12	0.18
July	0.10	0.27	0.38	0.02	0.19
August	0.05	0.16	0.27	0.01	0.18
September	0.05	0.16	0.24	0.01	0.19
October	0.08	0.17	0.34	0.01	0.15
November	0.11	0.22	0.52	0.03	0.17
December	0.13	0.34	1.13	0.09	0.16
Annual	0.49	0.93	1.47	0.21	0.19
Peak Daily	17	27	102	8.2	0.77

Abbreviations
cfs = cubic feet per second

TABLE 11
SUMMARY OF ESTIMATED PEAK DISCHARGE RETURN FLOWS
Leviathan Mine Site
Alpine County, California

Estimated Return Flows Based on Regressions (cfs)						
Station	**2 Year**	**5 Year**	**10 Year**	**25 Year**	**50 Year**	**100 Year**
Rural California						
1	26.4	84.5	137	247.2	344.5	497.7
15	44.2	137.5	221.9	401.8	558.5	802.8
23	62.2	189.7	304.3	549.9	762.3	1093.4
4L	8.7	30.2	50.7	93.7	132.9	194.9
22	4.5	16.5	28.1	52.3	74.7	110.4
Southwestern U.S.						
1	25.6	61.9	94.9	154.8	213.1	282.2
15	44.4	110.1	173.7	288.9	400.2	530.6
23	71	162.5	246.5	389.9	523.9	676.9
4L	10.5	25.7	38.8	63.3	87.7	117.5
22	5.6	14	21.1	34.8	48.7	66

Abbreviations
cfs = cubic feet per second

TABLE 12
MEASURED PEAK DISCHARGES
Leviathan Mine Site
Alpine County, California

Peak Discharges (cfs)			
Water Year	**Station 1**	**Station 15**	**Station 23**
1999	21	24	N/A
2000	2.4	7.2	N/A
2001	1.9	9.8	14
2002	6	7.5	10
2003	6	13	11
2004	7	13	13
2005	16	17	52
2006	40	68	250
2007	0.92	2.7	3.9
2008	1.7	6.5	13

Abbreviations
cfs = cubic feet per second
N/A = not applicable

TABLE 13
ESTIMATED PROBABLE MAXIMUM 24-HOUR FLOOD FLOWS (cfs)
Leviathan Mine Site
Alpine County, California

Station	24-hour PMF (cfs)
1	1169.2
15	2399.1
23	3664.8
4L	386.8
22	186.6

Abbreviations
cfs = cubic feet per second
PMF = probable maximum flood

TABLE 14
AVERAGE MONTHLY DISCHARGES
Leviathan Mine Site
Alpine County, California

Average Monthly Discharge in cfs (1999 – 2008)				
Month	**Mine Adit**	**Channel Underdrain**	**Aspen Seep**	**Pit Underdrain**
January	0.031	0.046	0.023	0.003
February	0.031	0.048	0.022	0.003
March	0.032	0.055	0.026	0.005
April	0.039	0.068	0.032	0.014
May	0.049	0.071	0.029	0.015
June	0.041	0.055	0.025	0.008
July	0.036	0.041	0.022	0.004
August	0.033	0.026	0.021	0.003
September	0.032	0.017	0.019	0.001
October	0.032	0.034	0.021	0.001
November	0.030	0.038	0.027	0.001
December	0.030	0.038	0.025	0.001
Annual	0.035	0.045	0.024	0.005
Peak Daily Flow	0.094	0.351	0.160	0.085

Abbreviations
cfs = cubic feet per second

TABLE 15
MONTHLY PRISM ESTIMATED PRECIPITATION COMPARED TO MONTHLY CIMIS POTENTIAL ESTIMATED EVAPOTRANSPIRATION
Leviathan Mine Site
Alpine County, CA

Month	Mean Precipitation PRISM Estimates (inches)	Potential Evapotranspiration CIMIS Estimates (inches)	Net Available Water (inches)
January	5.21	1.55	3.66
February	5.18	2.24	2.94
March	4.52	3.10	1.42
April	1.83	4.50	-2.67
May	1.57	5.89	-4.32
June	0.81	7.20	-6.40
July	0.56	8.06	-7.50
August	0.67	7.44	-6.77
September	1.04	5.70	-4.66
October	1.99	3.72	-1.74
November	3.89	2.10	1.79
December	4.22	1.55	2.67
Annual Total	31.48	53.05	-21.58

Abbreviations
CIMIS = California Irrigation Management Information System
PRISM = Parameter-Elevation Regressions on Independent Slopes Model

TABLE 16
PRELIMINARY SURFACE WATER BALANCE SUMMARY
Leviathan Mine Site
Alpine County, California

Preliminary Surface Water Balance Summary			
Surface Water Inflows	**Average Annual Flows (cfs)**	**Average Annual Flows (gpm)**	**Source**
Leviathan Creek			
Station 1	0.490	220	Measured average flows
Upper tributary	0.051	23	Estimated assuming 1.3 inches of runoff, no base flow
Lower tributary	0.032	15	Estimated assuming 1.3 inches of runoff, no base flow
4L Creek	0.214	96	Measured average flows
Other small unnamed tributaries	0.069	31	Estimated assuming 1.3 inches of runoff, no base flow
Aspen Creek			
Station 22	0.191	86	Measured average flows
Unnamed tributary	0.019	9	Estimated assuming 1.3 inches of runoff, no base flow
Other			
Runoff from overland flow of precipitation	0.089	40	Estimated assuming 1.3 inches of runoff, no base flow
Groundwater discharges to streams onsite	0.138	62	Total measured flows at groundwater discharge locations
Average Annual Total Inflows	**1.293**	**580**	
Surface Water Outflows			
Leviathan Creek below confluence with Aspen Creek (Station 17)	1.186	532	Estimated from measured and predicted flows upstream of station
Surface water losses from creeks and pond to groundwater	Unknown		Limited data set
Evaporation and Evapotranspiration	0.040	18	Estimated from pond inflows, assuming all flows evaporate
Average Annual Total Outflows	**1.225**	**550**	

Abbreviations
cfs = cubic feet per second
gpm = gallons per minute

TABLE 17
PRELIMINARY GROUNDWATER BALANCE SUMMARY
Leviathan Mine Site
Alpine County, California

Preliminary Groundwater Balance Summary			
Groundwater Inflows	**Average Annual Flows (cfs)**	**Average Annual Flows (gpm)**	**Source**
Groundwater inflows from upgradient of the site	Unknown		Limited available data and analysis
Groundwater inflows from infiltration on site	0.042	19	Estimated based on 2.4 inches of infiltration
Groundwater inflows from creek and pond losses	Unknown		Limited available data and analysis
Average Annual Total Inflows	**0.042**	**19**	
Groundwater Outflows			
Groundwater outflows to downgradient areas of the site	Unknown		Limited available data and analysis
Groundwater discharges to surface water on site			
Mine Adit	0.035	16	Measured average flows
PUD	0.005	2	Measured average flows
CUD	0.045	20	Measured average flows
DS	0.029	13	Estimated from limited one-time measurements
OS	0.024	11	Measured average flows
Average Annual Total Outflows	**0.138**	**62**	

Abbreviations
cfs = cubic feet per second
gpm = gallons per minute
AS = Aspen Seep
CUD = Channel Underdrain
DS = Delta Seep
PUD = Pit Underdrain

TABLE 18
RECENT SURFACE WATER QUALITY STATION 1
Leviathan Mine Site
Alpine County, California

SW	Sample	Total												Dissolved														Field Parameters		
		Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 1	9/27/2005	0.41	0.0028	13	0.0001	0.01	0.0001	0.0039	0.43	4.6	0.013	0.0006	0.008	0.15	0.0028	12.5	0.0001	0.01	0.0002	0.0018	0.16	4.5	0.009	0.0006	5.3	--	0.003	7.5	115.1	5.7
Sta 1	10/25/2005	0.36	0.0027	13.5	0.0005	0.05	0.0007	0.0016	0.4	4.8	0.011	0.0008	0.0045	0.15	0.0033	14.6	0.0001	0.01	0.0008	0.0013	0.18	5.3	0.015	0.0017	6.5	--	0.0085	7.6	123.5	5.2
Sta 1	11/30/2005	0.22	0.0023	11.8	0.0005	0.05	0.0003	0.0005	0.26	4.2	0.009	0.003	0.004	0.09	0.0021	11.7	0.0005	0.05	0.0003	0.003	0.12	4.2	0.012	0.0006	6.4	--	0.004	6.9	5035.5	0.2
Sta 1	12/27/2005	0.44	0.0022	13.2	0.0001	0.01	0.0006	0.0008	0.56	4.4	0.03	0.0006	0.006	0.13	0.0018	11.9	0.0001	0.01	0.0002	0.0005	0.14	4.3	0.013	0.0008	8	150	0.007	6.7	5036.5	0.3
Sta 1	1/24/2006	0.90	0.0027	13	0.000023	0.00026	0.0008	0.0015	0.79	4.6	0.015	0.0013	0.0037	0.7	0.0022	12	0.000023	0.0026	0.00078	0.0013	0.52	4.3	0.012	0.0012	12.4	140	0.0038	6.5	5036.6	1.1
Sta 1	2/22/2006	0.64	0.0023	13	0.000023	0.00021	0.00063	0.00099	0.59	4.2	0.015	0.0011	0.003	0.47	0.0023	13	0.000023	0.0011	0.00044	0.00075	0.4	4.1	0.011	0.0011	--	--	0.0034	7	5036	0.2
Sta 1	3/22/2006	1.20	0.0018	12	0.0001	0.0002	0.00046	0.00089	0.52	4.2	0.017	0.0011	0.0026	0.53	0.0019	12	0.0001	0.0043	0.00073	0.0025	0.41	4	0.019	0.0021	12	120	0.01	7.5	5020	1.3
Sta 1	4/25/2006	0.81	0.0020	9.9	0.0001	0.00065	0.00066	0.0024	0.76	2.9	0.045	0.0019	0.0056	0.21	0.0012	9.4	0.0001	0.0053	0.00036	0.0014	0.15	2.7	0.016	0.0019	4.6	68	0.0096	7.3	74.5	3.5
Sta 1	5/30/2006	0.40	0.0012	10	0.000023	0.0002	0.0004	0.00076	0.39	3	0.019	0.00096	0.0026	0.24	0.0012	9	0.000023	0.0024	0.00023	0.00052	0.21	2.7	0.017	0.0008	3.6	130	0.0027	7.4	81.5	5.6
Sta 1	6/26/2006	0.18	0.0041	13	0.000023	0.00018	0.00023	0.00056	0.34	4.2	0.019	0.0011	0.0028	0.077	0.0028	13	0.000023	0.0028	0.00016	0.00047	0.15	4.1	0.017	0.0012	5.2	130	0.0039	7.2	114	10.6
Sta 1	7/25/2006	0.11	0.0037	15	0.000023	0.00015	0.00025	0.0006	0.32	5	0.015	0.00077	0.0035	0.053	0.0031	16	0.000023	0.00038	0.00016	0.00048	0.18	5.2	0.009	0.00068	6	160	0.0043	7.2	141	13.8
Sta 1	8/29/2006	0.23	0.0036	17	0.000023	0.00016	0.00049	0.00058	0.37	6.2	0.01	0.0012	0.003	0.038	0.0034	15	0.000023	0.00017	0.00017	0.00055	0.14	5.2	0.0053	0.00071	6.6	110	0.0019	7.2	133.5	9.4
Sta 1	9/27/2006	0.06	0.0030	13	0.000023	0.00011	0.00028	0.00045	0.2	4.8	0.0073	0.00049	0.0031	0.034	0.0033	13	0.000026	0.00013	0.00027	0.00046	0.14	5	0.0076	0.00048	7.4	110	0.005	7.1	118.5	3.6
Sta 1	11/29/2006	0.09	0.0023	15	0.000023	0.000077	0.00041	0.00033	0.16	5.5	0.0065	0.00039	0.0028	0.048	0.0022	15	0.000023	0.00026	0.00028	0.00028	0.085	5.6	0.0054	0.00048	1.4	130	0.003	--	--	--
Sta 1	12/19/2006	0.19	0.0001	13	0.000047	0.000027	0.00069	0.00017	0.27	4.7	0.0026	0.00097	0.0045	0.12	0.00076	13	0.000047	0.000027	0.00042	0.00017	0.16	4.6	0.005	0.0016	9.3	130	0.0044	--	--	--
Sta 1	1/24/2007	0.16	0.0019	13	0.000023	0.00006	0.0004	0.000085	0.22	4.6	0.0078	0.00032	0.0024	0.091	0.0019	13	0.000023	0.00009	0.00028	0.000085	0.12	4.5	0.0044	0.00026	9	140	0.0018	--	--	--
Sta 1	3/6/2007	0.33	0.0020	12	0.00012	0.000068	0.0004	0.0008	0.42	4.1	0.0083	0.0007	0.0058	0.12	0.0018	12	0.00012	0.000068	0.00025	0.00042	0.17	4.2	0.0051	0.0007	9.9	110	0.0048	--	--	--
Sta 1	3/28/2007	0.54	0.0026	12	0.00025	0.0005	0.0005	0.0011	0.402	4	0.0101	0.001	0.0023	--	--	--	--	--	--	--	--	--	--	--	10	120	--	--	--	--
Sta 1	4/25/2007	0.17	0.0012	16	0.00025	0.0005	0.0005	0.0007	0.14	5	0.0099	0.001	0.002	0.0947	0.0044	15	0.00025	0.0009	0.0005	0.0007	0.098	5	0.0059	0.001	11	120	0.0028	--	--	--
Sta 1	5/29/2007	0.09	0.0029	17	0.00025	0.0005	0.0005	0.0007	0.18	5	0.0127	0.001	0.002	0.0376	0.003	17	0.00005	0.0002	0.0003	0.0004	0.146	5	0.0057	0.0004	9.1	140	0.0012	--	--	--
Sta 1	6/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.28	147	13.11
Sta 1	6/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.29	148	
Sta 1	6/30/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			12.79
Sta 1	7/12/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.39	136	14.61
Sta 1	7/23/2007	0.08	0.0048	17	0.00025	0.0005	0.0005	0.0008		6	0.0175	0.001	0.002	0.0379	0.0044	18	0.00005	0.0033	0.0005	0.0006	0.18	6	0.0152	0.0011	9.69	155	0.0027	--	--	--
Sta 1	8/2/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.72	150.4	14.5
Sta 1	8/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.93	172.1	12.2
Sta 1	8/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.77	181.5	13.8
Sta 1	8/23/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.12	178.7	11.4
Sta 1	8/29/2007	0.10	0.0035	16	0.00025	0.0005	0.0006	0.0009	0.252	5	0.0159	0.001	0.002	0.0705	0.0037	16	0.00025	0.0005	0.0005	0.0007	0.159	5	0.01	0.001	8.03	137	0.002	7.94	171.8	12.5
Sta 1	9/6/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.91	165.6	10.2
Sta 1	9/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.95	156	8.9
Sta 1	9/21/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.09	176.5	6.9
Sta 1	9/25/2007	0.06	0.0027	15	0.00025	0.0005	0.0005	0.0006	0.086	5	0.0074	0.001	0.002	0.0316	0.0027	13	0.00025	0.0005	0.0007	0.0005	0.036	5	0.0057	0.001	7.62	134	0.002	--	--	--
Sta 1	9/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.18	156.7	6.9
Sta 1	10/4/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.04	151.3	6.2
Sta 1	10/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.34	147.6	3.9
Count		23	23	23	23	23	23	23	22	23	23	23	23	22	22	22	22	22	22	22	22	22	22	22	22	19	22	27	27	27
Median		0.22	0.0026	13	0.0001	0.00026	0.0005	0.00076	0.355	4.6	0.0127	0.001	0.003	0.09285	0.0025	13	0.00005	0.001	0.0003	0.000535	0.1545	4.55	0.0095	0.0009	7.81	130	0.0036	7.6	151.3	6.9

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 19
RECENT SURFACE WATER QUALITY STATION 15
Leviathan Mine Site
Alpine County, California

SW	Sample	Total												Dissolved														Field Parameters		
		Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 15	9/27/2005	1.63	0.0063	727	0.0005	0.04	0.0002	0.0077	2.2	44.7	2.08	0.101	0.017	0.03	0.004	657	0.0005	0.04	0.0002	0.002	0.96	41.8	2.05	0.1	1680		0.022	6.62	2460.5	11.2
Sta 15	10/25/2005	8.68	0.0236	208	0.0005	0.18	0.0021	0.0154	28.6	40.1	5.92	0.394	0.086	9.63	0.0156	228	0.0004	0.21	0.0011	0.0122	31.2	45.5	6.63	0.356	932		0.082	3.8	1219.5	10.5
Sta 15	11/30/2005	6.4	0.0212	159	0.0003	0.16	0.0016	0.0096	23.4	34.8	5.05	0.293	0.064	5.34	0.0163	158	0.0003	0.15	0.0012	0.0099	23.2	35.1	5.15	0.309	809		0.067	4.1	926	2.4
Sta 15	12/27/2005	8.4	0.0426	150	0.0008	0.14	0.0035	0.0556	36	36.8	5.1	0.28	0.082	0.78	0.0298	150	0.0008	0.15	0.0004	0.0273	32	37.3	4.9	0.28	640	930	0.079	5.9	877.5	2.6
Sta 15	1/24/2006	9	0.044	110	0.00064	0.11	0.0051	0.035	32	28	4	0.27	0.069	0.2	0.024	99	0.00066	0.12	0.00024	0.0064	29	27	3.8	0.25	444	700	0.066	6.3	5243	1.9
Sta 15	2/22/2006	8	0.043	80	0.00082	0.094	0.0061	0.031	27	22	3	0.22	0.059	0.11	0.022	79	0.00085	0.095	0.000075	0.0059	23	21	2.9	0.22			0.059	6.2	571.5	3.2
Sta 15	3/22/2006	5.9	0.035	81	0.00052	0.089	0.0029	0.021	25	21	2.6	0.18	0.048	0.02	0.014	73	0.00053	0.083	0.00012	0.0017	21	20	2.6	0.18	320	470	0.042	6.6	540.5	6
Sta 15	4/25/2006	2.8	0.014	30	0.00029	0.019	0.0022	0.04	5.6	8.2	0.7	0.046	0.024	0.14	0.0046	29	0.00022	0.018	0.0002	0.0073	1.5	7.8	0.67	0.041	90	160	0.014	6.9	220.5	7
Sta 15	5/30/2006	3.9	0.04	40	0.00031	0.055	0.003	0.0081	16	11	1.2	0.12	0.029	0.071	0.0095	37	0.00025	0.053	0.00018	0.0012	9.1	10	1.1	0.11	170	350	0.018	6.6	351	13.4
Sta 15	6/26/2006	8	0.083	94	0.00049	0.15	0.0054	0.018	41	25	3.5	0.32	0.077	1.6	0.025	93	0.0005	0.15	0.00031	0.013	38	26	3.6	0.31	450	770	0.075	4.4	792	17
Sta 15	7/25/2006	1.9	0.0062	460	0.00043	0.037	0.0022	0.01	3.6	28	1.9	0.077	0.022	0.047	0.0037	500	0.00041	0.038	0.000072	0.0012	0.9	31	2	0.079	1300	2100	0.016	7	2114.5	22
Sta 15	8/29/2006	16	0.054	240	0.00056	0.33	0.0061	0.02	100	54	9.5	0.68	0.17	10	0.041	250	0.00053	0.32	0.0011	0.017	95	55	9.2	0.66	1100	1700	0.17	4.4	1575.5	16
Sta 15	9/27/2006	2.5	0.0078	140	0.00029	0.065	0.00062	0.0097	3.5	34	3.6	0.13	0.033	0.042	0.0044	140	0.00027	0.067	0.0002	0.00069	0.93	37	3	0.14	500	800	0.025	7.1	857.5	9.2
Sta 15	11/29/2006	16	0.034	190	0.00028	0.21	0.0031	0.0095	50	46	10	0.45	0.095	14	0.026	180	0.00027	0.21	0.00092	0.0083	46	44	10	0.44	800	1200	0.091	--	--	--
Sta 15	12/19/2006	11	0.021	180	0.00038	0.18	0.0021	0.013	27	43	6	0.42	0.082	10	0.013	170	0.0003	0.17	0.00066	0.01	24	41	5.8	0.4	300	1100	0.078	--	--	--
Sta 15	1/24/2007	6.7	0.026	130	0.00018	0.17	0.0024	0.0078	30	33	4.9	0.35	0.061	2.9	0.018	130	0.00018	0.17	0.00065	0.0066	28	33	4.8	0.35	560	830	0.062	--	--	--
Sta 15	3/6/2007	5.9	0.028	100	0.0002	0.11	0.0029	0.036	23	25	3.6	0.25	0.061	0.58	0.017	100	0.0002	0.12	0.00035	0.021	22	26	3.6	0.25	490	680	0.068	--	--	--
Sta 15	3/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	0.0479	0.0145	81	0.00125	0.0745	0.0005	0.001	16.3	20	2.47	0.153	330	520	0.0386	--	--	--
Sta 15	4/25/2007	4.92	0.0342	98	0.00025	0.101	0.001	0.0069	27.2	24	3.12	0.214	0.0524	0.103	0.0263	99	0.00018	0.0988	0.0001	0.0006	26.2	25	3.25	0.213	410	630	0.0464	--	--	--
Sta 15	5/29/2007	9.1	0.0414	156	0.00025	0.178	0.0019	0.0081	44.1	39	5.61	0.372	0.0852	4.83	0.0337	160	0.00028	0.171	0.0009	0.0067	45.2	40	5.85	0.358	710	1000	0.0855	--	--	--
Sta 15	6/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.15	1470	19.55
Sta 15	6/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.54	1243	--
Sta 15	7/8/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	14.44
Sta 15	7/12/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.78	2520	17.03
Sta 15	7/23/2007	2.72	0.0027	551	0.00031	0.0369	0.0006	0.0066	1.44	59	1.89	0.107	0.0214	1.51	0.0029	581	0.0004	0.0353	0.0005	0.005	1.18	62	1.84	0.0841	1740	2500	0.0243	--	--	--
Sta 15	8/2/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.46	1236	17.8
Sta 15	8/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.97	1056	16.7
Sta 15	8/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.16	882	19.1
Sta 15	8/23/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.95	1406	18.6
Sta 15	8/29/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.76	703	17.9
Sta 15	9/6/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.11	655	18.5
Sta 15	9/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.89	1169	15.3
Sta 15	9/21/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.55	1038	10.5
Sta 15	9/25/2007	3.87	0.0005	443	0.00118	0.105	0.0005	0.0175	0.034	55	4	0.219	0.0552	3.9	0.0005	406	0.00107	0.109	0.0005	0.018	0.023	52	4.2	0.233	1190	1770	0.0508	--	--	--
Sta 15	9/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.34	1082	10.5
Sta 15	10/4/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.33	881	10.2
Sta 15	10/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.78	805	7.5
Count		21	21	21	21	21	21	21	21	21	21	21	21	22	22	22	22	22	22	22	22	22	22	22	21	18	22	27	27	27
Median		6.40	0.0280	150	0.00038	0.11	0.0022	0.013	27	34	3.6	0.25	0.061	0.68	0.01595	145	0.0004	0.1145	0.000375	0.00665	23.1	34.05	3.6	0.2415	560	815	0.0605	4.89	1038	13.4

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 20
RECENT SURFACE WATER QUALITY STATION 16
Leviathan Mine Site
Alpine County, California

		Total												Dissolved														Field Parameters		
SW	Sample	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 16	9/27/2005	0.39	0.0499	71	0.0001	0.01	0.0002	0.0063	0.43	17.6	0.516	0.0117	0.005	0.05	0.055	69.4	0.0001	0.01	0.0002	0.0024	0.03	17.4	0.456	0.0096	196	--	0.005	8.1	492.5	12.2
Sta 16	10/25/2005	0.34	0.0422	80.4	0.0005	0.01	0.0004	0.0073	0.45	20.3	0.641	0.0156	0.008	0.2	0.0385	84.9	0.0005	0.01	0.0005	0.0032	0.05	21.5	0.625	0.0126	245	--	0.006	7.9	577	10.6
Sta 16	11/30/2005	0.24	0.0228	75.3	0.0005	0.05	0.0003	0.0036	0.5	19.2	0.672	0.0133	0.009	0.2	0.0195	75.5	0.0005	0.05	0.0002	0.0019	0.09	19.5	0.627	0.0143	227	--	0.007	7.8	5173.35	1.5
Sta 16	12/27/2005	0.28	0.0189	79.2	0.0001	0.01	0.0004	0.0027	0.34	20.3	0.982	0.0173	0.008	0.07	0.0166	78.2	0.0001	0.01	0.0002	0.0019	0.09	20	0.942	0.0175	215	450	0.009	7.2	5174	1
Sta 16	1/24/2006	0.45	0.012	91	0.000093	0.012	0.00036	0.0064	1.1	23	1.5	0.036	0.016	0.043	0.0056	87	0.000061	0.015	0.00024	0.0011	0.48	22	1.5	0.036	306	500	0.016	6.9	5163	0.3
Sta 16	2/22/2006	0.34	0.023	80	0.00006	0.0076	0.00035	0.0049	0.5	20	1.1	0.025	0.0086	0.033	0.017	79	0.000051	0.0082	0.00003	0.0016	0.073	19	1	0.025	--	--	0.0081	7.2	5176	0.2
Sta 16	3/22/2006	0.32	0.017	85	0.0001	0.0067	0.00031	0.0048	0.49	21	1.1	0.022	0.0088	0.041	0.016	84	0.0001	0.0065	0.00012	0.002	0.042	21	1.1	0.024	310	470	0.0063	7.6	572	4.9
Sta 16	4/25/2006	2.8	0.035	96	0.00036	0.014	0.0019	0.084	3.5	23	1.4	0.057	0.058	0.095	0.0075	89	0.00024	0.013	0.0002	0.0045	0.12	22	1.2	0.044	300	460	0.024	7.4	592	11
Sta 16	5/30/2006	0.49	0.016	120	0.00026	0.016	0.00026	0.023	1.5	32	2.9	0.05	0.033	0.033	0.0055	110	0.00015	0.014	0.00011	0.0015	0.15	28	2.6	0.046	480	810	0.021	7.5	65	15.7
Sta 16	6/26/2006	0.26	0.021	110	0.0001	0.004	0.00023	0.012	0.65	28	1.4	0.021	0.011	0.019	0.016	110	0.000068	0.0041	0.00006	0.0022	0.02	28	1.3	0.018	420	720	0.0049	7.7	892	17.8
Sta 16	7/25/2006	0.2	0.02	83	0.000046	0.0031	0.00019	0.008	0.47	20	0.76	0.0084	0.0051	0.029	0.017	84	0.000026	0.0023	0.000087	0.0021	0.025	21	0.63	0.0063	290	550	0.0011	7.6	689	21.3
Sta 16	8/29/2006	0.17	0.015	68	0.000032	0.0035	0.00036	0.0049	0.37	18	0.87	0.0088	0.004	0.013	0.013	73	0.000023	0.0031	0.00016	0.0015	0.05	19	0.75	0.0078	220	430	0.002	7.7	377.5	16.9
Sta 16	9/27/2006	0.11	0.01	70	0.000027	0.0048	0.00028	0.0062	0.42	18	1.3	0.011	0.0057	0.0097	0.0078	75	0.000023	0.0046	0.00017	0.0015	0.038	20	0.58	0.011	230	440	0.0032	7.7	535.5	10.9
Sta 16	11/29/2006	0.19	0.0085	72	0.000029	0.0088	0.0004	0.0033	0.95	18	2.2	0.018	0.0066	0.021	0.0047	73	0.000023	0.0085	0.00022	0.00083	0.24	18	2.2	0.019	240	430	0.0048	--	--	--
Sta 16	12/19/2006	0.16	0.008	82	0.000023	0.01	0.00028	0.0034	0.68	21	1.1	0.025	0.0073	0.026	0.0054	79	0.000023	0.0092	0.0007	0.00088	0.18	20	1	0.022	320	490	0.005	--	--	--
Sta 16	1/24/2007	0.17	0.0086	68	0.000023	0.0099	0.00033	0.003	0.73	18	1.1	0.02	0.0053	0.015	0.0049	69	0.000023	0.0092	0.00018	0.00032	0.15	18	1.1	0.019	220	430	0.0038	--	--	--
Sta 16	3/6/2007	1.2	0.019	65	0.00012	0.01	0.001	0.0086	1.7	16	0.95	0.021	0.011	0.061	0.0074	67	0.00012	0.0088	0.00015	0.0015	0.089	17	0.73	0.018	240	400	0.0082	--	--	--
Sta 16	3/28/2007	4.29	0.0375	63	0.00025	0.0091	0.002	0.0236	4.16	16	1.21	0.0168	0.0204	0.0227	0.0089	80	0.00125	0.0039	0.0005	0.0018	0.018	19	0.445	0.0086	180	340	0.002	--	--	--
Sta 16	4/25/2007	0.226	0.0183	63	0.00025	0.006	0.0005	0.0067	0.386	15	0.678	0.0134	0.0053	0.0159	0.0127	64	0.00005	0.0053	0.0002	0.0017	0.048	16	0.546	0.0121	180	350	0.002	--	--	--
Sta 16	5/29/2007	0.158	0.0204	58	0.00025	0.0049	0.0005	0.0047	0.272	14	0.631	0.0102	0.0034	0.0121	0.0159	60	0.00005	0.0044	0.0004	0.0014	0.034	15	0.572	0.0095	160	320	0.0014	--	--	--
Sta 16	6/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.34	428	18.86
Sta 16	6/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.44	428	
Sta 16	7/2/2007	0.115	0.018	53	0.00025	0.0049	0.0005	0.0041	0.274	12	0.631	0.0091	0.0038	0.0111	0.0142	50	0.00025	0.0044	0.0005	0.002	0.02	12	0.467	0.0069	24	270	0.002	--	--	--
Sta 16	7/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			18.78
Sta 16	7/12/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.48	496	18.32
Sta 16	7/23/2007	0.213	0.0218	50	0.00025	0.0043	0.0005	0.0043	0.276	11	0.598	0.0119	0.002	0.0757	0.018	53	0.00005	0.0041	0.0008	0.0021	0.054	12	0.467	0.0094	119	277	0.0017	--	--	--
Sta 16	8/2/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.89	252	20.4
Sta 16	8/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.01	250	16.7
Sta 16	8/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.28	242	20
Sta 16	8/23/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.13	257	17.7
Sta 16	8/29/2007	0.164	0.0202	47	0.00025	0.004	0.0007	0.0076	0.449	11	0.655	0.0075	0.0044	0.0073	0.0146	48	0.00025	0.003	0.0005	0.0028	0.016	11	0.443	0.0058	119	259	0.0025	8.2	253	16.6
Sta 16	9/6/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.32	266	15.5
Sta 16	9/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.86	388	14
Sta 16	9/21/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.14	307	11.1
Sta 16	9/25/2007	0.135	0.0179	50	0.00025	0.0018	0.0005	0.0063	0.295	12	0.278	0.0043	0.004	0.0064	0.0142	45	0.00025	0.001	0.0012	0.0025	0.003	11	0.127	0.0024	115	269	0.002	--	--	--
Sta 16	9/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.32	322	9.9
Sta 16	10/4/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.38	277	10.5
Sta 16	10/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.21	276	7.6
Count		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	20	24	27	27	27
Median		0.23	0.0190	71.5	0.00011	0.0082	0.00038	0.00625	0.48	18	0.966	0.0162	0.00695	0.0275	0.0142	75.25	0.000084	0.00735	0.0002	0.00185	0.05	19	0.68	0.01345	227	430	0.00485	7.9	428	14

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 21
RECENT SURFACE WATER QUALITY
STATION 17
FIELD PARAMETERS

Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters		
		pH	SC	Temp
		su	µS/cm	C
Sta 17	6/19/2007	6.94	690	18.5
Sta 17	6/28/2007	8.34	433	--
Sta 17	7/10/2007	--	--	18.46
Sta 17	7/12/2007	7.75	1590	17.45
Sta 17	8/2/2007	7.67	261	19.9
Sta 17	8/9/2007	7.71	256	16.7
Sta 17	8/14/2007	7.94	245	19.7
Sta 17	8/23/2007	7.64	393	17.5
Sta 17	8/29/2007	7.94	255	16.1
Sta 17	9/6/2007	8.01	266	15.3
Sta 17	9/13/2007	7.83	380	13.8
Sta 17	9/21/2007	7.55	542	10.8
Sta 17	9/28/2007	8.03	342	9.7
Sta 17	10/4/2007	7.82	343	10.5
Sta 17	10/16/2007	7.39	508	7.5
Count		14	14	14
Median		7.79	362	16.4

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 22
RECENT SURFACE WATER QUALITY STATION 22
Leviathan Mine Site
Alpine County, California

		Total												Dissolved														Field Parameters		
SW	Sample	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 22	9/27/2005	0.38	0.0033	24.8	0.0001	0.01	0.0002	0.001	0.7	5.3	0.009	0.0006	0.003	0.03	0.0006	22.7	0.0001	0.01	0.0002	0.0005	0.02	4.9	0.005	0.0006	1.1	--	0.003	8.45	165.1	11.2
Sta 22	10/25/2005	0.36	0.0006	24.3	0.0005	0.05	0.0007	0.003	0.34	5.2	0.005	0.0007	0.003	0.2	0.0006	26.3	0.0005	0.01	0.0005	0.0007	0.05	5.8	0.03	0.003	1.1	--	0.003	8.4	171	12.2
Sta 22	11/30/2005	0.12	0.0006	23.6	0.0005	0.05	0.002	0.003	0.12	5.1	0.03	0.003	0.003	0.2	0.003	24	0.0005	0.05	0.0003	0.003	0.05	5.3	0.005	0.003	1.2	--	0.01	8	152.3	5
Sta 22	12/27/2005	0.72	0.0009	26	0.0001	0.01	0.0006	0.0005	0.52	5.7	0.006	0.0006	0.002	0.03	0.0008	24.3	0.0001	0.01	0.0003	0.0005	0.13	5.4	0.005	0.0006	5	120	0.002	8.03	148.5	4
Sta 22	1/24/2006	0.077	0.00068	24	0.000023	0.000084	0.00024	0.00019	0.076	5.6	0.0028	0.00092	0.00073	0.037	0.0006	22	0.000023	0.000084	0.00024	0.00017	0.007	5.3	0.00095	0.00085	2.6	130	0.001	7.9	5052.5	1.9
Sta 22	2/22/2006	0.085	0.00057	23	0.000023	0.000093	0.00027	0.00017	0.097	5.3	0.0033	0.0011	0.0011	0.0082	0.00046	23	0.000023	0.000055	0.000062	0.000099	0.022	5.3	0.0015	0.0012	--	--	0.00093	8	158	7.3
Sta 22	3/22/2006	0.057	0.00062	22	0.0001	0.0001	0.0002	0.0005	0.1	5.7	0.01	0.00091	0.002	0.022	0.00058	22	0.0001	0.0001	0.00012	0.0005	0.046	5.4	0.01	0.00091	1.6	110	0.005	8.2	156	6.8
Sta 22	4/25/2006	0.13	0.0026	22	0.0001	0.0002	0.00022	0.00079	0.13	5.6	0.01	0.0016	0.0025	0.025	0.0012	22	0.0001	0.00012	0.0002	0.00079	0.02	5.5	0.01	0.0014	1.5	97	0.005	7.7	114	10.6
Sta 22	5/30/2006	0.1	0.00061	24	0.000023	0.00014	0.00019	0.00017	0.25	5.5	0.0072	0.0009	0.0019	0.0082	0.00048	21	0.000023	0.00014	0.00013	0.000085	0.025	4.9	0.0024	0.0007	1.2	140	0.0011	8	178	15.2
Sta 22	6/26/2006	0.0645	0.000635	23.5	0.000023	9.35E-05	0.00016	0.00015	0.105	5.2	0.0045	0.00099	0.00105	0.0048	0.00072	23	0.000023	0.000381	0.000105	0.00016	0.00855	5.2	0.00165	0.0011	1.3	130	0.00073	8.1	177.75	18.1
Sta 22	7/25/2006	0.054	0.00077	24	0.000023	0.00013	0.00023	0.00023	0.18	5.3	0.0066	0.00028	0.0019	0.0024	0.00074	23	0.000023	0.000055	0.00013	0.00038	0.0064	5.2	0.0012	0.00014	1.2	150	0.0027	7.8	180	19.4
Sta 22	8/29/2006	0.29	0.0007	23	0.000023	0.00017	0.00052	0.00029	0.24	5	0.0092	0.00054	0.0027	0.0051	0.00057	23	0.000023	0.00061	0.00018	0.000092	0.0066	5	0.0019	0.00068	1.3	110	0.0037	8	173.5	16.3
Sta 22	9/27/2006	0.084	0.00058	22	0.000023	0.00012	0.00031	0.0002	0.14	4.9	0.0061	0.00033	0.0023	0.0053	0.00072	23	0.000023	0.000081	0.0003	0.00049	0.0048	5.4	0.00076	0.00025	1.1	110	0.0017	8.2	168.5	13.8
Sta 22	11/29/2006	0.045	0.00041	24	0.000023	0.000058	0.00037	0.00011	0.054	5.4	0.0096	0.00021	0.0016	0.0047	0.00049	24	0.000023	0.000058	0.00028	0.000089	0.0074	5.4	0.00067	0.00027	0.14	230	0.0016	--	--	--
Sta 22	12/19/2006	0.21	0.00013	24	0.000047	0.000027	0.0011	0.00029	0.1	5.7	0.0019	0.00068	0.0042	0.013	0.00013	23	0.000047	0.000027	0.00094	0.00017	0.017	5.2	0.00088	0.001	1.8	130	0.002	--	--	--
Sta 22	1/24/2007	0.14	0.00059	24	0.000023	0.00004	0.00033	0.000085	0.13	5.5	0.0034	0.00014	0.0012	0.0073	0.00052	24	0.000023	0.00002	0.00023	0.000085	0.011	5.3	0.00068	0.00014	1.6	120	0.00089	--	--	--
Sta 22	3/6/2007	0.18	0.00075	24	0.00012	0.000068	0.0004	0.00042	0.19	5.6	0.0069	0.0007	0.005	0.017	0.00055	23	0.00012	0.000068	0.0002	0.00042	0.044	5.3	0.0047	0.0007	2	120	0.0042	--	--	--
Sta 22	3/28/2007	0.16	0.0011	25	0.00025	0.0005	0.0005	0.0005	0.066	6	0.0078	0.001	0.0031	0.0082	0.001	26	0.00125	0.0005	0.0005	0.0005	0.007	6	0.0036	0.001	1.9	130	0.002	--	--	--
Sta 22	4/25/2007	0.108	0.0005	26	0.00025	0.0005	0.0005	0.0005	0.128	5	0.0092	0.001	0.002	0.0061	0.0005	27	0.00005	0.0001	0.0003	0.0001	0.005	6	0.0008	0.0002	1.3	100	0.0006	--	--	--
Sta 22	5/29/2007	0.103	0.0005	25	0.00025	0.0005	0.0005	0.0005	0.088	5	0.0071	0.001	0.0089	0.0021	0.0006	26	0.00005	0.0002	0.0005	0.0001	0.003	5	0.0008	0.0002	1.1	130	0.0004	--	--	--
Sta 22	7/23/2007	0.0597	0.0005	25	0.00025	0.0005	0.0005	0.0005	0.003	5	0.0055	0.001	0.0022	0.002	0.0007	26	0.00005	0.0004	0.001	0.0002	0.004	6	0.0018	0.0003	1.08	123	0.0005	--	--	--
Sta 22	8/29/2007	0.047	0.0005	25	0.00005	0.0001	0.0008	0.0002	0.081	5	0.0043	0.0003	0.0004	0.0044	0.0004	25	0.00005	0.0002	0.0009	0.0008	0.025	5	0.0016	0.0003	1.12	132	0.0004	--	--	--
Sta 22	9/25/2007	0.0256	0.0005	26	0.00005	0.0001	0.0011	0.0002	0.054	5	0.0028	0.0002	0.0004	0.0016	0.0005	23	0.00005	0.0001	0.0012	0.0001	0.005	5	0.0004	0.0002	3.52	146	0.0004	--	--	--
Count		23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	19	23	13	13	13
Median		0.10	0.0006	24	0.00005	0.00013	0.0004	0.00029	0.12	5.3	0.0066	0.0007	0.002	0.0082	0.0006	23	0.00005	0.00012	0.00028	0.0002	0.011	5.3	0.00165	0.00068	1.3	130	0.0017	8	168.5	11.2

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 23
RECENT SURFACE WATER QUALITY STATION 23
Leviathan Mine Site
Alpine County, California

SW	Sample	Total												Dissolved														Field Parameters		
		Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 23	9/27/2005	0.53	0.0103	468	0.0002	0.02	0.0001	0.0048	1.11	36.9	1.33	0.0594	0.009	0.09	0.0034	435	0.0002	0.02	0.0001	0.0015	0.02	34.2	1.3	0.0602	1190	--	0.011	7.9	1753.5	10.5
Sta 23	10/25/2005	1.83	0.0166	142	0.0002	0.07	0.0006	0.0063	5.51	29.3	2.33	0.137	0.031	0.06	0.0018	147	0.0001	0.07	0.0005	0.0042	0.93	30.9	2.43	0.121	481	--	0.02	7.3	813	9.7
Sta 23	11/30/2005	1.15	0.0088	112	0.0001	0.05	0.0004	0.0025	4.19	25.2	1.94	0.0958	0.021	0.2	0.0014	116	0.0001	0.05	0.0001	0.0007	1.99	26.1	2.03	0.109	404	--	0.02	7.4	5224.45	0.4
Sta 23	12/27/2005	3.37	0.0183	112	0.0003	0.05	0.0015	0.0253	--	26.4	2.13	0.105	0.072	0.03	0.0019	108	0.0002	0.05	0.0001	0.0013	3.75	25.2	2	0.101	337	600	0.022	7.1	628.5	2.2
Sta 23	1/24/2006	5.4	0.024	91	0.00035	0.055	0.003	0.022	14	23	2.3	0.13	0.036	0.03	0.0046	85	0.00029	0.051	0.00027	0.0015	8.2	22	2.1	0.13	328	510	0.027	7.1	5184.5	0
Sta 23	2/22/2006	5.1	0.027	78	0.00052	0.055	0.004	0.02	12	20	2	0.13	0.036	0.015	0.0059	80	0.00046	0.054	0.000023	0.00098	7.6	20	2	0.13	--	--	0.029	7.1	5178	0
Sta 23	3/22/2006	2.4	0.014	62	0.00021	0.034	0.0013	0.0093	6.9	18	1.3	0.078	0.021	0.02	0.0026	62	0.00016	0.033	0.0001	0.0009	1.9	17	1.3	0.074	240	370	0.012	7.3	436	5.4
Sta 23	4/25/2006	2.3	0.015	33	0.00022	0.014	0.0019	0.034	4.5	9.1	0.6	0.036	0.021	0.17	0.0039	32	0.0001	0.013	0.00027	0.006	0.32	8.8	0.55	0.03	94	170	0.0079	7.5	240	8.4
Sta 23	5/30/2006	2.5	0.026	55	0.00024	0.039	0.0019	0.0099	8.1	14	1.2	0.088	0.024	0.038	0.0032	50	0.00011	0.035	0.00014	0.00059	0.46	13	1.1	0.08	210	380	0.0072	7.1	430.5	13.5
Sta 23	6/26/2006	3.2	0.033	88	0.00025	0.069	0.0021	0.0097	13	23	1.9	0.16	0.038	0.0077	0.0024	86	0.00022	0.069	0.000065	0.00047	4.3	23	1.9	0.15	350	570	0.028	6.4	668	18.4
Sta 23	7/25/2006	0.92	0.011	290	0.00022	0.016	0.00085	0.0071	3	28	1.1	0.057	0.012	0.03	0.0026	290	0.00016	0.016	0.000085	0.0013	0.0048	30	1.2	0.053	800	1300	0.0041	7.8	1491.5	22.3
Sta 23	8/29/2006	3.3	0.021	130	0.00019	0.063	0.0014	0.0074	15	28	2.6	0.14	0.033	0.0052	0.0012	130	0.000099	0.057	0.00012	0.00068	1.1	29	2.6	0.13	480	720	0.015	6.6	868.5	16.8
Sta 23	9/27/2006	0.092	0.0041	90	0.000036	0.0068	0.00025	0.0016	0.53	21	0.93	0.024	0.0044	0.01	0.0026	93	0.000024	0.0064	0.00024	0.0012	0.0048	23	0.49	0.024	310	510	0.0027	7.7	611	8.6
Sta 23	11/29/2006	1.7	0.0058	130	0.00013	0.054	0.00055	0.002	8.6	30	4.4	0.13	0.028	0.017	0.0031	120	0.00011	0.052	0.00023	0.00051	7.2	29	1.9	0.12	480	710	0.024	--	--	--
Sta 23	12/19/2006	0.42	0.0025	110	0.00017	0.034	0.00027	0.0012	2.6	27	1.4	0.12	0.02	0.024	0.0015	110	0.000034	0.033	0.00024	0.00041	2.1	27	1.4	0.12	--	--	0.02	--	--	--
Sta 23	1/24/2007	1.2	0.0051	98	0.00008	0.052	0.00049	0.0017	4.5	25	1.9	0.12	0.022	0.027	0.0028	97	0.00008	0.051	0.00023	0.000085	3.5	25	1.9	0.12	370	560	0.02	--	--	--
Sta 23	3/6/2007	2	0.009	80	0.00012	0.035	0.0011	0.014	4.8	20	1.3	0.087	0.023	0.024	0.0016	85	0.00012	0.035	0.0001	0.00095	1.7	21	1.3	0.086	340	490	0.018	--	--	--
Sta 23	3/28/2007	3.59	0.0203	79	0.00025	0.0389	0.0005	0.0167	11.4	19	1.53	0.0924	0.0277	0.0199	0.0022	83	0.00125	0.0386	0.0005	0.0009	3.28	20	1.53	0.0848	300	450	0.018	--	--	--
Sta 23	4/25/2007	1.55	0.0106	83	0.00025	0.0367	0.0005	0.0037	5.8	20	1.32	0.0854	0.0197	0.0156	0.0023	84	0.00005	0.0372	0.0001	0.0005	2.26	21	1.4	0.0866	310	460	0.013	--	--	--
Sta 23	5/29/2007	2.13	0.0131	100	0.00025	0.0419	0.0005	0.0041	6.45	24	1.55	0.096	0.0237	0.0109	0.001	104	0.00008	0.0407	0.0004	0.0005	0.852	25	1.65	0.0979	370	550	0.0137	--	--	--
Sta 23	6/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.17	554	16.37
Sta 23	6/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.14	449	--
Sta 23	7/2/2007	0.334	0.0057	57	0.00025	0.0007	0.0005	0.0021	1.41	13	0.0278	0.007	0.0037	0.0393	0.0024	53	0.00025	0.0005	0.0005	0.0014	0.022	13	0.0161	0.0056	170	300	0.002	--	--	--
Sta 23	7/11/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.01
Sta 23	7/12/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.28	1213	16.12
Sta 23	7/23/2007	0.842	0.0064	308	0.00025	0.0099	0.0005	0.0031	1.55	42	0.689	0.0471	0.0065	0.039	0.0016	297	0.00008	0.0094	0.0005	0.0012	0.007	44	0.669	0.0363	872	1330	0.0038	--	--	--
Sta 23	8/2/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.5	384	19.3
Sta 23	8/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.76	360	15.3
Sta 23	8/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.92	315	18.4
Sta 23	8/23/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.62	1225	16
Sta 23	8/29/2007	0.0578	0.0024	71	0.00025	0.0005	0.0006	0.0017	0.185	14	0.0104	0.0047	0.002	0.0241	0.0018	71	0.00025	0.0005	0.0006	0.0016	0.021	14	0.0067	0.0048	213	371	0.002	7.97	351	15.8
Sta 23	9/6/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.97	305	13.8
Sta 23	9/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.86	445	12.6
Sta 23	9/21/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.02	523	9.1
Sta 23	9/25/2007	0.0381	0.0031	103	0.00025	0.0005	0.0005	0.0016	0.066	20	0.0332	0.009	0.002	0.0197	0.0026	88	0.00025	0.0006	0.001	0.0016	0.003	18	0.0341	0.009	272	492	0.002	--	--	--
Sta 23	9/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.36	356	8
Sta 23	10/4/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.4	414	9.3
Sta 23	10/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.24	506	6.5
Count		24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	22	19	24	27	27	27
Median		1.77	0.0108	94.5	0.00023	0.0378	0.000575	0.00555	4.8	23	1.365	0.0902	0.0215	0.02405	0.0024	90.5	0.000115	0.0361	0.00023	0.000965	1.4	23	1.4	0.0863	338.5	510	0.01435	7.76	523	12.6

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 24
RECENT SURFACE WATER QUALITY STATION 24
Leviathan Mine Site
Alpine County, California

SW	Sample	Total												Dissolved														Field Parameters		
		Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 24	9/27/2005	0.6	0.0009	19	0.0001	0.1	0.0003	0.0019	0.3	6	0.05	0.0006	0.003	0.1	0.001	16.2	0.0001	0.01	0.0002	0.0006	0.04	5.5	0.009	0.0006	1	--	0.003	8.2	135	9.2
Sta 24	10/25/2005	0.17	0.0012	17.3	0.0005	0.05	0.0003	0.0016	0.18	6	0.012	0.0006	0.004	0.03	0.0012	17.8	0.0005	0.05	0.0005	0.0012	0.02	6.2	0.007	0.003	1.1	--	0.003	7.9	139.5	8.9
Sta 24	11/30/2005	0.08	0.0011	17	0.0005	0.05	0.0003	0.003	0.13	5.8	0.012	0.003	0.003	0.2	0.0009	16.7	0.0005	0.05	0.0002	0.003	0.05	5.9	0.006	0.003	1.2	--	0.003	8.1	127.65	2.2
Sta 24	12/27/2005	0.33	0.0015	18.2	0.0001	0.01	0.0006	0.0005	--	6.5	--	0.0006	0.005	0.08	0.0011	16.8	0.0001	0.01	0.0002	0.0005	0.08	6.1	0.009	0.0006	1.7	120	0.004	8.1	130	2.9
Sta 24	1/24/2006	0.13	0.0018	19	0.000023	0.00015	0.00043	0.0011	0.17	7.4	0.011	0.00084	0.0017	0.099	0.0017	18	0.000023	0.0025	0.00036	0.00072	0.086	7.1	0.0097	0.0013	2	120	0.0015	7.8	5046.65	0.4
Sta 24	2/22/2006	0.12	0.0016	18	0.000023	0.00011	0.00035	0.00041	0.14	6.7	0.0071	0.00098	0.0011	0.039	0.0015	18	0.000023	0.00067	0.00011	0.00026	0.053	6.9	0.0049	0.00089	--	--	0.0016	8	5047.5	0.9
Sta 24	3/22/2006	0.12	0.0015	18	0.0001	0.00012	0.00021	0.0005	0.16	7.5	0.01	0.00084	0.002	0.054	0.0016	18	0.0001	0.0043	0.00022	0.00055	0.11	7.1	0.1	0.0016	1.9	120	0.005	8.1	144.5	4.6
Sta 24	4/25/2006	0.54	0.0027	17	0.0001	0.00056	0.0005	0.0018	0.63	6.2	0.035	0.0016	0.0028	0.088	0.0019	16	0.0001	0.00023	0.00023	0.00093	0.098	5.9	0.01	0.0012	1.9	98	0.005	7.6	128.5	8.2
Sta 24	5/30/2006	0.43	0.0014	15	0.000023	0.00038	0.00039	0.00063	0.4	5.5	0.026	0.00089	0.0036	0.035	0.0013	14	0.000023	0.0045	0.0002	0.00039	0.052	5.2	0.014	0.0014	1.3	120	0.0039	7.6	129.5	12.1
Sta 24	6/26/2006	0.15	0.0016	17	0.000023	0.00025	0.00018	0.00039	0.24	6.4	0.024	0.001	0.0015	0.012	0.0016	17	0.000023	0.00011	0.000083	0.00025	0.032	6.4	0.0067	0.00079	1.1	130	0.001	7.9	148.5	16.1
Sta 24	7/25/2006	0.1	0.0018	17	0.000023	0.00019	0.00018	0.00033	0.16	6.4	0.02	0.00045	0.002	0.012	0.0016	18	0.000023	0.000095	0.00011	0.0002	0.034	6.7	0.0056	0.0002	0.86	140	0.00073	7.7	155.5	18.8
Sta 24	8/29/2006	0.11	0.0013	17	0.000023	0.00017	0.00025	0.00032	0.16	6.4	0.016	0.00054	0.0021	0.0086	0.0014	17	0.000023	0.0018	0.0002	0.00022	0.024	6.3	0.0049	0.00077	1.1	110	0.0013	7.5	153	14.6
Sta 24	9/27/2006	0.043	0.0012	16	0.000023	0.00014	0.00026	0.00023	0.093	5.9	0.011	0.00032	0.002	0.0071	0.0012	17	0.000023	0.000099	0.00022	0.00028	0.014	6.4	0.0024	0.00037	1.1	99	0.0017	7.6	135	8.3
Sta 24	11/29/2006	0.08	0.001	20	0.000023	0.00012	0.00032	0.00033	0.13	7.3	0.0098	0.0003	0.0017	0.024	0.0012	20	0.00012	0.00016	0.00019	0.00043	0.057	7.2	0.0043	0.0007	0.14	140	0.0039	--	--	--
Sta 24	12/19/2006	0.074	0.00049	19	0.000023	0.000014	0.00033	0.000085	0.12	7.1	0.0065	0.00042	0.0023	0.029	0.0012	18	0.000023	0.000029	0.00037	0.00073	0.022	6.4	0.0036	0.0005	2.3	120	0.0025	--	--	--
Sta 24	12/27/2006	--	--	--	--	--	--	--	0.8	--	0.05	--	--	0.0079	0.0011	17	0.000023	0.00012	0.00022	0.000085	0.019	6.2	0.0024	0.00014	1.5	66	0.0011	--	--	--
Sta 24	1/24/2007	0.1	0.0012	17	0.000023	0.0001	0.00037	0.000085	0.14	6.3	0.014	0.00014	0.001	0.044	0.0012	17	0.00012	0.00015	0.00035	0.00042	0.066	6.4	0.0042	0.0007	2.1	99	0.0048	--	--	--
Sta 24	3/6/2007	0.24	0.0013	18	0.00012	0.0001	0.0004	0.0005	0.38	6.6	0.021	0.0007	0.0087	0.0271	0.0012	18	0.00125	0.0005	0.0005	0.0005	0.041	6	0.0051	0.001	1.7	100	0.002	--	--	--
Sta 24	4/25/2007	0.0842	0.0005	19	0.00025	0.0005	0.0005	0.0008	0.114	7	0.0176	0.001	0.0022	0.0065	0.0013	19	0.00005	0.0004	0.0001	0.0002	0.005	7	0.0026	0.0003	1.5	93	0.0005	--	--	--
Sta 24	5/29/2007	0.128	0.0005	19	0.00025	0.0005	0.0005	0.0008	0.083	7	0.0232	0.001	0.002	0.0081	0.0014	20	0.00005	0.0002	0.0003	0.0002	0.016	7	0.0031	0.0002	1.2	110	0.0004	--	--	--
Sta 24	6/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.61	140	14.41
Sta 24	6/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.61	139	--
Sta 24	7/2/2007	0.0399	0.0014	18	0.00005	0.0001	0.0006	0.0003	0.075	6	0.0132	0.0002	0.0004	0.0042	0.0014	18	0.00005	0.0004	0.0006	0.0002	0.017	5	0.0035	0.0002	1	110	0.0004	--	--	--
Sta 24	7/12/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.71	134	14.58
Sta 24	7/23/2007	0.0617	0.0008	18	0.00025	0.0005	0.0005	0.0005	0.003	6	0.0165	0.001	0.002	0.0064	0.0016	18	0.00005	0.0021	0.0006	0.0003	0.007	6	0.0071	0.0005	0.99	115	0.0016	--	--	--
Sta 24	8/2/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.89	169.6	16.8
Sta 24	8/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.08	169.2	13.8
Sta 24	8/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.31	169.6	16.4
Sta 24	8/23/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.38	168.1	14.5
Sta 24	8/29/2007	0.0343	0.0012	17	0.00005	0.0001	0.0005	0.0006	0.075	6	0.0134	0.0003	0.0018	0.0038	0.0013	17	0.00005	0.0001	0.0007	0.0004	0.022	6	0.0038	0.0002	0.87	116	0.001	8.24	167.4	14.6
Sta 24	9/6/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.25	164.4	13.8
Sta 24	9/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.94	154	11.7
Sta 24	9/21/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.46	161.6	8.5
Sta 24	9/25/2007	0.0183	0.0011	18	0.00005	0.0001	0.0009	0.0002	0.037	6	0.0068	0.0002	0.0004	0.0024	0.0011	17	0.00005	0.0001	0.0009	0.0001	0.014	6	0.0024	0.0002	1.41	130	0.0004	--	--	--
Sta 24	9/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.67	165.1	7.9
Sta 24	10/4/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.62	155.4	8.6
Sta 24	10/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.66	159.9	6.3
Count		23	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24	24	24	24	24	24	24	23	20	24	27	27	26
Median		0.11	0.0012	18	0.00005	0.00017	0.00037	0.0005	0.14	6.4	0.014	0.0006	0.002	0.02555	0.0013	17.4	0.00005	0.0004	0.00022	0.000395	0.033	6.25	0.005	0.00065	1.2	115.5	0.00165	8.1	154	10.45

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 25
RECENT SURFACE WATER QUALITY STATION 25
Leviathan Mine Site
Alpine County, California

		Total												Dissolved														Field Parameters		
SW	Sample	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 25	9/27/2005	0.28	0.0044	201	0.0001	0.01	0.0001	0.0019	0.51	18.5	0.524	0.0236	0.005	0.14	0.0022	192	0.0001	0.01	0.0001	0.001	0.02	18	0.498	0.0242	481		0.007	8.1	886	9.6
Sta 25	10/25/2005	0.63	0.0053	56.1	0.0005	0.02	0.0004	0.0021	1.76	13.5	0.678	0.0403	0.01	0.03	0.0012	54.3	0.0005	0.03	0.0005	0.0016	0.14	13.1	0.652	0.0332	140		0.006	7.8	328.5	9.2
Sta 25	11/30/2005	0.36	0.0033	45	0.0005	0.02	0.0003	0.0011	1.05	11.6	0.541	0.0281	0.008	0.2	0.0008	46	0.0005	0.01	0.0001	0.003	0.28	12	0.558	0.0296	125		0.007	7.8	307.75	2
Sta 25	12/27/2005	1.35	0.0076	51.9	0.0001	0.02	0.0009	0.0079	3.51	13.7	0.765	0.0387	0.014	0.03	0.0009	51.3	0.0001	0.02	0.0001	0.0009	0.76	13.5	0.733	0.0368	134	300	0.01	7.8	340	2.7
Sta 25	1/24/2006	2.4	0.01	53	0.00017	0.024	0.0016	0.011	6.3	15	1.1	0.067	0.019	0.016	0.0024	50	0.00011	0.024	0.00031	0.00097	2.9	14	1	0.058	157	300	0.0094	7.4	5118*	0.4
Sta 25	2/22/2006	2.2	0.012	47	0.00021	0.024	0.0019	0.0088	5.3	13	0.9	0.06	0.016	0.015	0.0025	46	0.0002	0.023	0.000022	0.00071	2.4	13	0.89	0.058			0.01	7.4	5114*	0.8
Sta 25	3/22/2006	1.2	0.0071	45	0.0001	0.016	0.00072	0.0049	3.2	12	0.69	0.038	0.01	0.02	0.0017	41	0.0001	0.015	0.0001	0.0005	0.47	12	0.64	0.033	120	250	0.005	7.7	294.5	5
Sta 25	4/25/2006	1.6	0.011	29	0.00014	0.009	0.0013	0.022	3.1	8.3	0.42	0.024	0.014	0.16	0.0039	26	0.0001	0.0084	0.00027	0.005	0.26	7.7	0.35	0.019	62	140	0.005	7.8	203	8.7
Sta 25	5/30/2006	1.3	0.013	34	0.00011	0.018	0.0011	0.005	4	9.5	0.59	0.041	0.012	0.032	0.0021	31	0.000035	0.015	0.00014	0.00058	0.06	9.1	0.5	0.035	99	240	0.0026	7.7	280.5	13.2
Sta 25	6/26/2006	1.1	0.013	43	0.000087	0.023	0.00084	0.0036	4.7	12	0.64	0.053	0.014	0.011	0.001	42	0.000034	0.021	0.000079	0.00042	0.084	12	0.64	0.048	120	280	0.004	7.5	345.4	17.5
Sta 25	7/25/2006	0.34	0.0049	110	0.000077	0.0054	0.00042	0.0026	1.3	14	0.39	0.019	0.0051	0.012	0.0021	110	0.000038	0.0047	0.00015	0.00078	0.023	15	0.37	0.017	260	560	0.0017	7.9	665.5	20.7
Sta 25	8/29/2006	0.79	0.0059	43	0.000045	0.013	0.00058	0.002	3.2	11	0.55	0.03	0.009	0.0096	0.0013	45	0.000023	0.011	0.00017	0.00043	0.005	12	0.51	0.026	110	240	0.0016	7.7	342.5	16
Sta 25	9/27/2006	0.049	0.0017	33	0.000023	0.0014	0.00025	0.00051	0.13	9.3	0.11	0.0051	0.0027	0.0047	0.0015	34	0.000023	0.0012	0.00022	0.00054	0.0048	10	0.1	0.0049	63	180	0.0015	7.7	256	9.5
Sta 25	11/29/2006	0.33	0.0024	45	0.000037	0.011	0.00042	0.00085	1.9	12	0.69	0.029	0.0081	0.022	0.0013	45	0.000023	0.011	0.0002	0.00027	1.1	13	0.75	0.026	100	280	0.006	--	--	--
Sta 25	12/19/2006	0.18	0.0012	38	0.000059	0.0059	0.00035	0.00034	0.78	11	0.26	0.023	0.0056	0.019	0.0012	37	0.000023	0.0055	0.0004	0.0001	0.25	11	0.25	0.023	93	230	0.0052	--	--	--
Sta 25	1/24/2007	0.31	0.002	40	0.000023	0.013	0.00035	0.00011	1	11	0.49	0.031	0.0054	0.015	0.0013	40	0.000023	0.013	0.00023	0.000085	0.58	12	0.48	0.031	94	180	0.0054	--	--	--
Sta 25	3/6/2007	0.73	0.0034	40	0.00012	0.0099	0.0006	0.0042	1.7	11	0.4	0.025	0.0096	0.025	0.001	40	0.00012	0.0098	0.00025	0.00055	0.25	11	0.4	0.024	110	220	0.0054	--	--	--
Sta 25	3/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	0.0156	0.001	45	0.00125	0.0136	0.0005	0.0005	0.456	12	0.581	0.0313	130	300	0.0029	--	--	--
Sta 25	4/25/2007	0.469	0.0029	42	0.00025	0.011	0.0005	0.0015	1.58	11	0.416	0.0255	0.0072	0.0075	0.0013	42	0.00005	0.011	0.0003	0.0003	0.171	11	0.438	0.026	100	220	0.0022	--	--	--
Sta 25	5/29/2007	0.626	0.0045	40	0.00025	0.009	0.0005	0.0014	1.6	11	0.354	0.022	0.0054	0.0146	0.001	42	0.00005	0.0078	0.0004	0.0003	0.027	12	0.335	0.0191	92	230	0.0013	--	--	--
Sta 25	6/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.84	235	14.42	--	--	--
Sta 25	6/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.32	191	--	--	--	--
Sta 25	7/12/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.25	501	14.94	--	--	--
Sta 25	7/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			14.56	--	--	--
Sta 25	7/2/2007	0.132	0.0023	26	0.00025	0.0012	0.0005	0.0009	0.407	8	0.0449	0.0023	0.0033	0.0062	0.0018	24	0.00025	0.0005	0.0006	0.0006	0.016	7	0.0055	0.001	26	140	0.002	--	--	--
Sta 25	7/23/2007	0.246	0.0024	97	0.00025	0.0024	0.0005	0.0011	0.41	16	0.163	0.0118	0.002	0.0115	0.0018	99	0.00005	0.0018	0.0008	0.0006	0.003	17	0.139	0.0088	248	464	0.0008	--	--	--
Sta 25	8/2/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.68	155	16.9
Sta 25	8/9/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.81	148	13.8
Sta 25	8/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.05	139	16.5
Sta 25	8/23/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.82	598	14.8
Sta 25	8/29/2007	0.0399	0.0018	72	0.00025	0.0005	0.0007	0.0008	0.087	14	0.0129	0.0011	0.002	0.0057	0.0009	26	0.00025	0.0005	0.0006	0.0007	0.006	7	0.0031	0.001	28	160	0.0031	8.05	143	14.7
Sta 25	9/6/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.94	198.3	12.5
Sta 25	9/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.81	201	11.6
Sta 25	9/21/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.13	231	8.5
Sta 25	9/25/2007	0.0292	0.0015	33	0.00025	0.0005	0.0005	0.0007	0.051	8	0.009	0.0014	0.0052	0.0031	0.0018	30	0.00025	0.0005	0.001	0.0006	0.005	8	0.0047	0.001	44.1	189	0.002	--	--	--
Sta 25	9/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.48	158	7.8
Sta 25	10/4/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.55	167	8.7
Sta 25	10/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.24	239	6.3
Count		23	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24	24	24	24	24	24	24	26	23	27	24	22	24
Median		0.47	0.0044	43	0.00012	0.011	0.0005	0.0019	1.6	11.6	0.49	0.0255	0.008	0.0153	0.0013	42	0.0001	0.0105	0.00024	0.00059	0.1555	12	0.489	0.026	100	235	0.005	7.805	247.5	9.55

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 26
RECENT SURFACE WATER QUALITY STATION 26
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Total												Dissolved														Field Parameters		
		Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Sta 26	10/26/2005	0.07	0.004	44.3	0.0005	0.05	0.0005	0.003	0.18	13.6	0.029	0.0043	0.003	0.2	0.004	43.6	0.0005	0.05	0.0004	0.003	0.03	13.2	0.025	0.0044	89.7	--	0.004	7.85	314	10.5
Sta 26	5/31/2006	0.97	0.0099	29	0.000023	0.0089	0.00091	0.0035	2.9	9.1	0.33	0.026	0.0084	0.088	0.0029	27	0.000023	0.0065	0.00022	0.00074	0.14	8.5	0.27	0.02	71	210	0.0022	--	--	--
Sta 26	5/30/2007	0.0134	0.0058	34	0.00025	0.0005	0.0005	0.0005	0.236	12	0.0454	0.001	0.002	0.0067	0.0052	33	0.00005	0.0002	0.0006	0.0006	0.017	12	0.018	0.0022	52	200	0.0007	--	--	--
Count		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	1	1	1
Median		0.07	0.0058	34	0.00025	0.0089	0.0005	0.003	0.236	12	0.0454	0.0043	0.003	0.088	0.004	33	0.00005	0.0065	0.0004	0.00074	0.03	12	0.025	0.0044	71	205	0.0022	7.85	314	10.5

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 27
RECENT SURFACE WATER QUALITY STATION 4L
Leviathan Mine Site
Alpine County, Californina

SW	Sample	Total												Dissolved														Field Parameters		
		Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
4L	10/9/2003	0.055	0.0059	51	0.00024	0.00013	0.0014	0.0024	0.032	13	0.00073	0.0024	0.012	0.045	0.0029	50	0.000081	0.000034	0.0012	0.00011	0.015	13	0.00074	0.00098	130	300	0.00084	--	--	--
4L	5/11/2004	1.02	0.002	33	0.0001	0.00071	0.0003	0.0006	0.25	8.7	0.0623	0.0029	0.006	0.041	0.0013	34	0.0001	0.00028	0.0001	0.0005	0.02	8.8	0.0566	0.0023	110	--	0.005	7.2	255	6.2
4L	11/9/2004	0.036	0.0032	53.1	0.0001	0.0001	0.0001	0.0005	0.03	14.1	0.001	0.0015	0.002	0.028	0.0031	58	0.0001	0.00054	0.0001	0.0116	0.01	15.3	0.0009	0.0012	170	--	0.005	7.1	238	3.3
4L	6/1/2005	1.53	0.0033	18.1	0.0001	0.00045	0.0011	0.0015	0.82	4.7	0.03	0.0019	0.004	0.5	0.0026	19.3	0.0001	0.00409	0.0001	0.0005	0.16	5	0.032	0.0024	38.8	--	0.002	7.6	151.5	11.8
4L	10/26/2005	0.05	0.0032	56.8	0.0005	0.05	0.0003	0.003	0.03	15	0.03	0.0007	0.003	0.2	0.0033	53.1	0.0005	0.05	0.0002	0.0006	0.05	13.7	0.03	0.001	144	--	0.004	7	364	6.9
4L	5/31/2006	0.99	0.0036	21	0.000023	0.00036	0.00068	0.0013	0.57	5.8	0.031	0.0022	0.0041	--	0.0026	20	0.000023	0.00028	0.00021	0.00082	0.014	5.6	0.024	0.002	40	170	0.0027	--	--	--
4L	5/30/2007	0.0932	0.0054	54	0.00025	0.0007	0.0005	0.0011	0.161	14	0.0479	0.0032	0.002	0.0101	0.003	54	0.00005	0.0001	0.0005	0.0008	0.012	14	0.0027	0.0009	140	310	0.0019	--	--	--
Count		7	7	7	7	7	7	7	7	7	7	7	7	6	7	7	7	7	7	7	7	7	7	7	7	3	7	4	4	4
Median		0.09	0.0033	51	0.0001	0.00045	0.0005	0.0013	0.161	13	0.03	0.0022	0.004	0.043	0.0029	50	0.0001	0.00028	0.0002	0.0006	0.015	13	0.024	0.0012	130	300	0.0027	7.15	246.5	6.55

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 28
RECENT SURFACE WATER QUALITY ADIT
Leviathan Mine Site
Alpine County, California

		Total												Dissolved														Field Parameters		
SW	Sample	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
Adit	9/27/2005	301	15.1	135	0.056	2.25	1.13	1.57	774	40	8.39	5.83	0.84	300	14.6	128	0.0552	2.33	1.13	1.39	792	40	8.68	5.4	4460		0.79	1.93	4759	11.9
Adit	10/25/2005	311	12.1	138	0.0728	2.29	0.918	1.63	783	41	8.37	4.51	1.02	293	14.3	127	0.0499	2.17	1.1	1.19	745	38	7.84	5.48	4540		0.75	2.3	4551	12
Adit	11/30/2005	301	13.2	125	0.0425	2.17	1.06	1.13	770	37	7.7	5.32	0.642	303	14.3	125	0.0468	2.03	1.18	1.17	810	38.4	7.87	5.72	4210		0.758	2.5	4375	11.9
Adit	12/27/2005	322	14.3	131	0.046	2.21	1.09	1.14	786	39	8.29	5.01	0.87	300	13.2	122	0.0424	2.07	0.99	1.05	760	37	7.74	4.93	4120	5740	0.9	2.4	4306.5	11.9
Adit	1/24/2006	360	14	130	0.051	1.6	1	1.4	840	41	8.6	4.9	0.8	360	13	130	0.049	1.6	1	1.4	860	41	8.6	4.9	3990	6310	0.78	2.4	4695	11.8
Adit	2/22/2006	320	14	120	0.048	1.4	1.2	1.5	740	38	7.8	5.6	0.75	330	12	120	0.049	1.3	1.2	1.4	730	38	7.9	5.3			0.59	2.3	4585	11.9
Adit	3/22/2006	330	12	120	0.048	1.3	1.2	1	740	40	8.1	4	0.58	330	11	120	0.044	1.2	1	0.96	740	39	8	4	5600	6200	0.56	2.3	5012.5	11.9
Adit	4/25/2006	410	15	130	0.094	1.6	1.5	2.3	990	45	9.4	6.5	0.95	400	15	130	0.093	1.6	1.4	2.3	990	44	9.3	6.3	5200	8000	0.93	1.7	7430	11.8
Adit	5/30/2006	340	15	140	0.068	1.4	1.3	3.2	830	46	11	5.8	0.99	310	16	130	0.069	1.3	1.2	3.2	790	42	9.9	5.9	4900	5200	1	1.9	7175	11.8
Adit	6/26/2006	310	19	140	0.092	2.7	1.4	1.9	880	42	9.2	6.8	0.91	280	20	130	0.086	2.8	1.4	2	900	42	9.5	7	4700	7000	0.85	1.8	6345	11.8
Adit	7/25/2006	320	20	135	0.0795	2.5	1.35	1.7	820	41	8.8	6.6	0.88	335	18.5	130	0.0795	2.5	1.3	1.55	825	41	8.9	6.15	4200	6200	0.8	2	5565	11.9
Adit	8/29/2006	360	15	130	0.061	2.3	0.82	1.4	700	38	7.5	4	0.54	310	14	130	0.059	2.1	0.8	0.93	700	38	6.7	3.8	3900	5500	0.53	2.3	4810.5	11.9
Adit	9/28/2006	450	11	110	0.046	2.1	1.1	0.94	610	39	7.9	5.3	0.58	250	12	120	0.045	1.8	0.95	1	540	38	5.5	4.5	3900	5100	0.64	2.1	4410.5	11.9
Adit	11/29/2006	480	11	120	0.036	2.4	0.97	0.93	660	34	5.4	4.6	0.59	510	10	120	0.035	2.4	0.93	0.85	720	35	5.6	0.22	3800	4800	0.56	--	--	--
Adit	12/19/2006	460	13	110	0.035	1.7	0.98	0.9	680	35	5.8	5.2	0.62	480	12	110	0.036	1.7	0.94	0.83	620	32	6.3	5.1	3700	4800	0.62	--	--	--
Adit	1/24/2007	310	11	110	0.036	1.6	0.83	0.75	620	33	5.1	5	0.56	330	11	110	0.037	1.6	0.85	0.74	680	34	5.2	5.1	3600	5000	0.58	--	--	--
Adit	3/6/2007	250	13	98	0.039	1.9	1	0.8	650	31	6.1	4.9	0.73	240	12	95	0.037	1.8	0.95	0.74	650	30	5.9	4.7	3800	4800	0.71	--	--	--
Adit	3/28/2007	284	11.9	105	0.0525	1.76	0.977	0.89	738	31	6.27	4.7	0.832	276	11.5	109	0.0472	1.7	0.928	0.83	706	32	5.99	4.6	3700	5000	0.797	--	--	--
Adit	4/25/2007	294	12.7	106	0.0657	2.01	1.1	1.17	773	32	7.04	5.22	0.952	315	12.8	108	0.066	1.97	1.06	1.12	787	33	6.82	5.3	3800	5400	0.955	--	--	--
Adit	5/29/2007	285	12	112	0.0625	1.88	1.02	0.989	729	34	6.77	4.88	0.908	302	12.3	117	0.0642	1.9	1.02	0.955	761	35	6.7	5.09	4100	5300	0.943	--	--	--
Adit	8/29/2007	277	11.9	107	0.0534	1.86	1.05	0.967	725	31	6.78	4.98	0.909	282	11.3	104	0.052	1.76	0.965	0.778	719	31	6.45	4.79	3520	5110	0.859	--	--	--
Adit	9/25/2007	284	11.6	114	0.0565	1.83	0.973	0.852	715	34	6.68	4.69	0.895	271	10.9	95	0.0499	1.7	0.915	0.736	675	29	6.17	4.62	3570	4520	0.844	--	--	--
Count		22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	18	22	13	13	13
Median		316	13	120	0.053	1.89	1.1	1.14	740	38	7.8	5.0	0.84	307	13	120	0.04945	1.8	1.00	1.025	743	38	7.3	5.095	3990	5250	0.785	2.3	4759	11.9

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligrams per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 29
RECENT SURFACE WATER QUALITY PIT UNDERDRAIN (PUD)
Leviathan Mine Site
Alpine County, California

		Total												Dissolved														Field Parameters		
SW	Sample	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	SO4	TDS	Zn	pH	SC	Temp
Station	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su	µS/cm	C
PUD	9/27/2005	289	1.12	287	0.016	1	0.519	0.276	870	97	29.8	2.36	1.55	275	1.21	263	0.0149	1	0.557	0.27	856	93.3	29.7	2.41	5050	--	1.49	2.21	4576.5	10.5
PUD	10/25/2005	302	1.08	310	0.0251	1.27	0.551	0.466	1020	114	42.2	2.34	2.59	290	0.754	295	0.0158	1.26	0.391	0.329	991	109	40.7	2.48	6750	--	1.8	2.7	4800	10.1
PUD	11/30/2005	309	1.03	268	0.016	1.47	0.388	0.358	1080	123	51.2	3.46	2.36	305	0.95	314	0.0172	1.4	0.364	0.4	1120	124	51.9	3.19	7250	--	2.4	2.9	4779	8.2
PUD	12/27/2005	351	1.15	337	0.018	1.49	0.452	0.87	1030	118	49.6	3.37	2.5	349	0.955	335	0.0169	1.46	0.413	0.73	1020	117	48.8	2.79	6730	8300	2.42	2.6	4917.5	7.8
PUD	1/24/2006	230	1.5	210	0.011	0.38	0.51	0.1	510	73	11	1.5	0.66	200	1.5	180	0.011	0.38	0.51	0.1	470	67	9.8	1.5	2910	4320	0.66	3.1	2962	9
PUD	2/22/2006	300	3.1	200	0.022	0.46	0.78	0.11	620	72	10	2.2	0.75	290	2.9	200	0.022	0.46	0.62	0.089	630	70	10	2.2	--	--	0.64	2.5	3861.5	8.9
PUD	3/22/2006	370	4.3	200	0.038	0.54	1.1	0.084	800	76	9.6	2.9	0.91	370	4.4	200	0.03	0.56	0.99	0.065	800	71	9.2	2.3	4900	6800	0.64	2.6	4400.5	8.9
PUD	4/25/2006	610	11	210	0.076	1.2	1.6	6.7	1300	75	12	4.7	1.3	590	10	210	0.075	1.2	1.5	6.5	1300	74	12	4.6	7400	11000	1.3	1.8	7810	9.1
PUD	5/30/2006	650	16	250	0.094	1.5	1.9	1.2	1600	84	14	7.2	1.5	640	16	230	0.091	1.3	1.6	1.1	1500	81	13	7.2	8600	6000	1.5	2.1	7665	9.5
PUD	6/26/2006	440	12	250	0.073	2	1.6	0.2	1200	85	13	5.6	1.6	400	12	250	0.064	2	1.5	0.17	1200	85	14	5.6	6400	9800	1.5	1.9	6465	9.7
PUD	7/25/2006	420	8.1	270	0.047	1.5	1.2	0.22	1100	85	15	4.7	1.4	430	8.9	260	0.048	1.5	1.3	0.14	1100	86	17	4.6	5400	7800	1.5	2.08	5690	9.7
PUD	8/29/2006	390	4.5	270	0.022	1	0.86	0.088	840	83	23	3.2	1.4	350	4.5	270	0.021	0.99	0.84	0.085	790	86	16	3.2	5400	6700	1.3	2.4	4873	10.7
PUD	8/29/2006	390	4.6	260	0.025	1	0.87	0.15	820	82	23	3.2	1	360	4.3	260	0.025	0.99	0.85	0.16	780	82	16	3.2	5300	6700	1	--	--	--
PUD	9/28/2006	460	3.3	240	0.017	0.91	0.56	0.25	690	86	35	2.8	1.1	240	3.2	170	0.017	0.92	0.61	0.26	710	93	18	2.8	4700	6100	1.2	2.3	2253.5	10.7
PUD	11/29/2006	490	0.91	290	0.015	1.9	0.41	0.31	880	100	60	2.8	1.8	500	0.78	290	0.014	0.9	0.38	0.29	920	100	59	5.1	5400	6000	1.6	--	--	--
PUD	12/19/2006	520	0.71	300	0.015	15	0.44	0.49	990	110	54	3.7	2.8	490	0.71	280	0.014	1.3	0.35	0.36	810	100	45	3.2	5300	6700	1.6	--	--	--
PUD	1/24/2007	380	0.31	320	0.016	1.3	0.26	0.38	990	120	49	3.4	1.9	340	0.31	320	0.016	1.4	0.26	0.38	950	120	50	3.4	5600	6900	1.9	--	--	--
PUD	3/6/2007	270	0.3	330	0.017	1.6	0.26	0.46	930	120	48	3.5	2.6	270	0.31	340	0.018	1.7	0.27	0.49	1000	130	53	3.7	5900	5100	2.8	--	--	--
PUD	3/28/2007	375	2.72	336	0.0453	1.13	0.45	1.11	1040	102	43.5	2.7	2.08	377	2.8	345	0.0428	1.14	0.447	1.16	1010	104	42.8	2.77	6200	7700	2.1	--	--	--
PUD	4/25/2007	327	1.87	346	0.0545	1.45	0.4	0.633	1030	116	50.8	3.37	2.75	352	1.93	373	0.0529	1.45	0.396	0.65	1060	128	49.9	3.48	6000	8000	2.81	--	--	--
PUD	5/29/2007	335	0.537	377	0.0579	1.62	0.347	0.533	1160	137	57.7	3.77	3.1	341	0.536	399	0.0608	1.55	0.333	0.51	1150	145	54.3	3.71	6200	8700	3.06	--	--	--
PUD	7/2/2007	338	0.492	384	0.0553	1.7	0.324	0.529	1150	141	60.5	3.81	3.2	--	--	368	--	--	--	--	--	138	--	--	6400	8600	3.09	--	--	--
PUD	8/29/2007	347	0.188	406	0.0629	1.93	0.328	0.547	1320	152	70.6	4.54	3.71	349	0.18	407	0.0586	1.85	0.251	0.532	1320	153	67.5	4.39	7290	9510	3.65	--	--	--
PUD	8/29/2007	350	0.202	394	0.0624	1.98	0.325	0.56	1350	152	72	4.65	3.82	358	0.194	407	0.0564	1.89	0.256	0.54	1350	159	69.3	4.53	7230	9580	3.72	--	--	--
PUD	9/25/2007	358	0.157	440	0.0722	2.11	0.242	0.567	1410	168	76.2	4.66	4.08	337	0.129	393	0.0626	1.89	0.217	0.522	1280	156	67.9	4.38	6810	9290	3.7	--	--	--
Count		25	25	25	25	25	25	25	25	25	25	25	25	24	24	25	24	24	24	24	24	25	24	24	24	21	25	13	13	13
Median		358	1.15	290	0.025	1.47	0.5	0.46	1030	102	43.5	3.4	1.90	350	1	290	0.0235	1.3	0.43	0.37	1005	100	41.8	3.3	6100	7700	1.6	2.4	4800	9.5

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
mg/L = milligram per liter
SC = specific conductance
su = standard units
µS/cm = microsiemens per centimeter

TABLE 30
RECENT SURFACE WATER QUALITY LABORATORY RESULTS ASPEN SEEP BIOREACTOR EFFLUENT (ASB EFF)
Leviathan Mine Site
Alpine County, California

		Total																		Dissolved														
SW Station	Sample Date	Acidity mg/L	Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Cl mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TSS mg/L	Zn mg/L	Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Hardness mg/L	Mg mg/L	Ni mg/L	Pb mg/L	Se mg/L	TDS mg/L	Zn mg/L
ASB EFF	10/6/2005	10	0.201	--	360	--	--	--	--	--	5.9	96.2	--	--	--	--	1730	--	--	0.0812	0.0014	374	0.0001	0.0385	0.019	0.0119	0.943	--	97.5	0.122	0.0001	0.0016	--	0.0227
ASB EFF	11/4/2005	10	0.0812	--	349	--	--	--	--	--	1.86	83.3	--	--	--	--	988	--	--	0.0812	0.0015	349	0.0002	0.0394	0.019	0.0054	0.214	--	85.1	0.0829	0.0002	0.0031	--	0.0132
ASB EFF	12/13/2005	10	0.0812	--	325	--	--	--	--	--	3.65	84.7	--	--	--	--	1560	--	--	0.0812	0.001	362	0.0002	0.0626	0.019	0.00453	3.48	--	85.9	0.168	0.0002	0.00182	--	0.0489
ASB EFF	2/4/2006	10	0.069	--	290	--	--	--	--	--	7.5	--	21	--	--	--	1400	--	--	0.041	0.001	300	0.00005	0.071	0.0011	0.0028	7.2	1000	67	0.12	0.00008	0.0013	--	0.034
ASB EFF	3/13/2006	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	--	--	0.04	0.001	290	0.00005	0.013	0.0011	0.0029	0.052	1000	63	0.033	0.00008	0.0014	--	0.0088
ASB EFF	4/6/2006	10	0.14	--	290	--	--	--	--	--	6.8	--	17	--	--	--	1400	--	--	0.08	0.001	300	0.00005	0.11	0.0011	0.0027	5.5	1100	74	0.18	0.00008	0.0012	--	0.054
ASB EFF	4/28/2006	300	18	--	340	--	--	--	--	--	49	--	21	--	--	--	1800	--	--	18	0.001	360	0.0017	0.28	0.0011	0.26	51	1300	89	0.38	0.00039	0.0051	--	0.42
ASB EFF	5/1/2006	280	17	--	340	--	--	--	--	--	52	--	21	--	--	--	1800	--	--	17	0.0016	360	0.0011	0.26	0.0011	0.22	54	1300	88	0.37	0.00008	0.0048	--	0.36
ASB EFF	5/16/2006	10	1.9	--	390	--	--	--	--	--	20	--	20	--	--	--	1800	--	--	0.08	0.0013	390	0.00005	0.12	0.0011	0.0027	16	1300	92	0.18	0.00008	0.0035	--	0.013
ASB EFF	6/13/2006	2400	0.04	--	390	--	--	--	0.00056	--	1.1	86	--	--	--	--	2000	--	--	0.04	--	380	0.000025	0.0095	--	0.0035	0.23	1300	83	0.021	0.000045	0.0026	--	0.0048
ASB EFF	6/27/2006	8	0.08	--	440	--	--	--	--	--	2.9	100	--	--	--	--	1900	--	--	0.08	--	400	0.000075	0.0014	0.0017	0.0041	1.5	1400	94	0.0031	0.00012	0.0012	--	0.01
ASB EFF	7/25/2006	2	0.08	--	380	--	--	--	--	--	1.5	--	19	--	--	--	2100	--	--	0.08	0.015	400	0.00005	0.0011	0.0011	0.0049	0.69	1400	96	0.0045	0.00011	0.0012	--	0.0062
ASB EFF	8/24/2006	62	0.16	--	390	--	--	--	--	--	20	--	23	--	--	--	1900	--	--	0.08	0.005	400	0.00025	0.0044	0.0056	0.0038	20	1400	100	0.008	0.0004	0.003	--	0.059
ASB EFF	9/14/2006	140	0.08	0.005	--	0.00025	--	0.11	0.0056	0.0051	17	92	20	0.17	0.0004	0.003	1100	--	0.021	0.08	0.005	380	0.00025	0.1	0.0056	0.0048	18	--	94	0.16	0.0004	0.003	2400	0.022
ASB EFF	11/30/2006	2	0.4	--	370	--	--	--	--	--	11	80	--	--	--	--	1800	--	--	0.098	0.007	370	0.0005	0.1	0.007	0.0054	9.8	1300	82	0.17	0.001	0.003	--	0.025
ASB EFF	1/15/2007	110	0.46	--	290	--	--	--	--	--	6.8	42	--	--	--	--	1400	--	--	0.26	0.007	230	0.0005	0.15	0.007	0.0076	8.7	830	60	0.22	0.001	0.003	--	0.057
ASB EFF	1/26/2007	2	0.24	--	330	--	--	--	--	--	7.4	81	--	--	--	--	1800	--	--	0.2	0.0007	330	0.00005	0.11	0.0007	0.003	5.9	1200	81	0.16	0.0001	0.00061	--	0.015
ASB EFF	2/16/2007	2	0.099	--	300	--	--	--	--	--	1.6	65	--	--	--	--	1500	--	--	0.04	0.007	300	0.0005	0.031	0.007	0.004	1	1000	65	0.056	0.001	0.003	--	0.025
ASB EFF	3/21/2007	40.5	0.82	--	145.23	--	--	--	--	--	7.012	26.033	--	--	--	--	800.075	--	--	0.44	0.0011	140.025	0.00005	0.050075	0.0007	0.001265	6.5075	455.5	25.007	0.06545	0.0001	0.00061	--	0.01325
ASB EFF	4/26/2007	560	0.17	--	240	--	--	--	--	--	0.82	32	--	--	--	--	1500	--	--	0.096	0.0051	240	0.00005	0.0025	0.0007	0.0025	0.7	720	32	0.003	0.00011	0.0019	--	0.0056
ASB EFF	6/27/2007	38	0.105	--	125.0365	--	--	--	--	--	0.8075	18.50475	--	--	--	--	850.1	--	--	0.04	0.0036	130.0265	0.00011	0.00055	0.00079	0.001825	0.6075	400.5	18.506	0.00285	0.0001	0.00195	--	0.004
ASB EFF	7/3/2007	130	0.086	--	270	--	--	--	--	--	1.1	38	--	--	--	--	2000	--	--	0.04	0.0068	270	0.00011	0.00092	0.0007	0.0032	0.95	820	36	0.0043	0.0001	0.0022	--	0.0062
ASB EFF	7/12/2007	20	0.063	--	300	--	--	--	--	--	0.93	54	--	--	--	--	1500	--	--	0.04	0.0043	280	0.00011	0.00081	0.0007	0.038	0.77	900	50	0.0009	0.00023	0.0012	--	0.0074
ASB EFF	7/17/2007	20	0.04	--	280	--	--	--	--	--	0.5	53	--	--	--	--	1400	--	--	0.04	0.0072	270	0.00011	--	0.00076	0.0024	0.44	880	50	0.0059	0.0001	0.0022	--	0.0029
ASB EFF	8/1/2007	2800	6.8	0.0089	480	0.0014	--	--	0.0035	0.026	85	79	--	2	0.0005	0.0033	2500	--	0.99	6	0.0039	480	0.0016	--	0.0035	0.024	84	1500	74	2.3	0.0005	0.0037	--	0.94
ASB EFF	8/15/2007	4	0.093	0.0047	200	0.00011	11	--	0.0007	0.0025	12	32	--	0.011	0.0001	0.00093	620	33	0.0056	0.04	0.0046	180	0.00055	--	0.0035	0.0038	12	580	30	0.016	0.0005	0.0015	2600	0.012
ASB EFF	8/28/2007	26	0.1	0.0097	160	0.00055	5.5	--	0.0035	0.01	1.1	33	--	0.014	0.0005	0.0015	1300	10	0.013	0.14	0.0097	150	0.00055	--	0.0035	0.01	0.8	520	34	0.014	0.0005	0.0015	2600	0.013
ASB EFF	9/12/2007	20	0.07	0.011	150	0.00011	3.7	--	0.0007	0.002	0.14	46	--	0.0094	0.0001	0.00096	1100	10	0.004	0.06	0.017	140	0.00011	--	0.00087	0.0024	0.015	540	46	0.0085	0.0001	0.00088	2500	0.0035
ASB EFF	9/27/2007	20	0.1	0.0066	140	0.00011	6.2	--	0.00098	0.0013	0.084	51	--	0.017	0.0001	0.00088	1000	10	0.0062	0.051	0.01	140	0.00011	--	0.0011	0.0021	0.016	540	47	0.012	0.0001	0.0013	2300	0.0036
ASB EFF	10/2/2007	20	0.2	0.0031	150	0.00011	5.5	--	0.006	0.0038	0.023	55	--	0.017	0.0001	0.0011	1100	10	0.0027	0.14	0.0052	150	0.00011	--	0.0007	0.0019	0.017	610	58	0.015	0.0001	0.0021	2200	0.0035
ASB EFF	10/8/2007	20	0.49	0.0075	210	0.00011	10	--	0.0012	0.0032	0.43	58	--	0.01	0.0001	0.001	1200	10	0.005	0.34	0.0073	190	0.00011	--	0.0007	0.0023	0.015	680	51	0.0063	0.0001	0.00074	2400	0.0048
ASB EFF	10/26/2007	20	0.2	0.0032	170	0.00011	14	--	0.0013	0.0074	1.3	100	--	0.011	0.0001	0.0014	720	13	0.0081	0.04	0.0007	170	0.00011	--	0.0007	0.0031	0.015	870	110	0.013	0.0001	0.0015	2300	0.003
ASB EFF	10/31/2007	20	0.11	0.0069	190	0.00011	33	--	0.0007	0.003	7.2	98	--	0.0059	0.0001	0.0012	1000	19	0.0058	0.04	0.0073	190	0.00011	--	0.0007	0.0024	6.1	890	100	0.008	0.0001	0.0017	2300	0.005
ASB EFF	11/13/2007	--	0.04	0.002	240	0.00011	11	--	0.00083	0.0034	1.3	72	--	0.046	0.0001	0.00078	1300	10	0.0031	0.04	0.0032	260	0.00011	--	0.0007	0.0023	0.59	990	82	0.041	0.0001	0.0011	2300	0.0063
ASB EFF	11/27/2007	--	0.53	0.005	300	0.00011	6.4	--	0.0007	0.0058	4.8	82	--	0.071	0.0001	0.0013	1300	11	0.025	0.08	0.0034	270	0.00011	--	0.0007	0.0022	1.5	990	73	0.08	0.0001	0.0003	2500	0.0059
ASB EFF	12/12/2007	--	0.04	0.0017	290	0.00011	5.7	--	0.0007	0.0022	1	75	--	0.075	0.0001	0.00078	1400	10	0.014	0.08	0.0015	300	0.00011	--	0.00095	0.0021	0.65	1100	77	0.082	0.0001	0.00075	2500	0.0032
ASB EFF	1/15/2008	2	0.08	0.0018	280	0.00011	2.9	--	0.0007	0.0022	3	69	--	0.098	0.0003	0.00097	1400	10	0.009	0.08	0.0025	280	0.00011	--	0.0007	0.002	3.2	1000	74	0.11	0.0003	0.0011	2400	0.0074
ASB EFF	2/12/2008	5	0.08	0.0027	260	0.00011	3.5	--	0.0007	0.0028	5.5	67	--	0.13	0.0003	0.00079	1300	10	0.019	0.08	0.002	280	0.00011	--	0.0007	0.0025	6	990	72	0.13	0.0003	0.00099	2100	0.0053
ASB EFF	3/18/2008	2	0.14	0.0033	210	0.00011	5.3	--	0.0007	0.0024	1	53	--	0.06	0.0003	0.0017	1000	10	0.0085	0.04	0.0026	210	0.00011	--	0.0007	0.0018	0.79	720	51	0.056	0.0003	0.00096	1700	0.0045
ASB EFF	4/10/2008	2	0.04	0.0028	250	0.00011	2.9	--	0.0007	0.0021	0.76	62	--	0.06	0.0003	0.0019	1200	14	0.0071	0.04	0.0024	130	0.00011	--	0.0007	0.0019	0.24	440	30	0.059	0.0003	0.0018	2000	0.0039
ASB EFF	5/14/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ASB EFF	5/15/2008	2	0.08	0.0042	300	0.00011	3.7	--	0.0007	0.0028	1	77	--	0.03	0.0003	0.0027	1500	34	0.0053	0.08	0.0041	320	0.00011	--	0.0007	0.0038	0.91	1100	79	0.028	0.0003	0.0031	2500	0.0058
ASB EFF	5/27/2008	2	0.04	0.0033	280	0.00011	3.6	--	0.0007	0.0025	1.4	65	--	0.043	0.0003	0.0012	1400	10	0.0055	0.04	0.0027	280	0.00011	--	0.0007	0.0026	1.2	970	65	0.042	0.0003	0.0012	2300	0.0056
ASB EFF	6/3/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ASB EFF	6/10/2008	2	0.26	0.0058	300	0.00011	3.9	--	0.00078	0.0073	3	73	--	0.011	0.0003	0.00097	1500	19	0.013	0.04	0.0055	300	0.00011	--	0.0007	0.0023	1.5	1000	74	0.0056	0.0003	0.0011	2500	0.0053
ASB EFF	6/24/2008	2	0.66	0.0072	310	0.00011	5.5	--	0.0011	0.012	3	76	--	0.012	0.0003	0.0011	1400	23	0.019	0.04	0.0067	310	0.00011	--	0.0008	0.0028	0.77	1100	77	0.0009	0.0003	0.001	2600	0.0046
ASB EFF	7/10/2008	2	0.2	0.0033	320	0.00011	12	--	0.0007	0.0039	1.3	82	--	0.0051	0.0003	0.001	1400	19	0.0087	0.11	0.0033	300	0.00011	--	0.0007	0.0043	0.026	1100	87	0.0038	0.0003	0.0012	2600	0.0059
ASB EFF	7/22/2008	2.5	0.04	0.0029	145.0465	0.00011	2.225	--	0.0007	0.004275	0.3225	41.507	--	0.0009	0.0003	0.000595	700.305	10	0.00675	0.04	0.0014	155.27	0.00011	--	0.0007	0.002425	0.0725	600.9	46.55	0.0009	0.0003	0.000415	1255	0.00465
ASB EFF	7/22/2008	--	--	0.0007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ASB EFF	8/5/2008	2	0.66	0.0036	260	0.00011	13	--	0.00076	0.0093	1.9	94	--	0.019	0.0003	0.0015	1200	10	0.0094	0.04	0.002	240	0.00011	--	0.0007	0.0022	1.1	940	84	0.012	0.0003	0.0016	2200	0.0069
ASB EFF	8/14/2008	2	0.38	0.0028	270	0.00011	9	--	0.0007	0.0069	5.2	89	--	0.0098	0.0003	0.00079	1400	26	0.0072	0.04	0.0014	270	0.00011	--	0.0021	0.0023	0.086	1000	88	0.0088	0.0003	0.00098	2400	0.0049
ASB EFF	8/19/2008	2	2.1	0.0074	280	0.00011	11	--	0.0007	0.023	15	110	--	0.03	0.00052	0.001	1400	15	0.023	0.04	0.0016	270	0.00011	--	0.0007	0.0027	0.015	1100	100	0.015	0.0003	0.0016	2300	0.0048
ASB EFF	8/26/2008	2	0.36	0.0028	240	0.00011	16	--	0.0007	0.0056	1.6	110	--	0.0068	0.0003	0.0013	1400	17	0.0055	0.04	0.0025	240	0.00011	--	0.0007	0.0026	0.1	1000	110	0.0052	0.0003	0.0011	2500	0.0039
ASB EFF	9/24/2008	2	3.6	0.0065	200	0.00011	29	--	0.0013	0.06	13	120	--	0.053	0.00051	0.0011	1183.333333	18	0.05	0.041	0.0027	200	0.00011	--	0.0007	0.0022	0.065	970	120	0.023	0.0003	0.001	2400	0.0071
ASB EFF	9/30/2008	2	0.04	0.0021	223	0.00011	20	--	0.0007	0.0035	1.29	100	--	0.0049	0.0003	0.00098	1150	10	0.0048	0.04	0.001	236	0.00011	--	0.0007	0.0024	0.0474	1000	110	0.0045	0.0003	0.0011	2240	0.0043
ASB EFF	10/13/2008	2	0.21	0.00085	260	0.00011	10	--	0.0007	0.004	2.8	85	--	0.016	0.0003	0.00076	1200	10	0.006	0.08	0.0007	270	0.00011	--	0.0007	0.002	0.065	1000	88	0.016	0.0003	0.00064	2400	0.0041
ASB EFF	10/27/2008	2	0.22	0.00082	152.02885	0.00011	3.225	--	0.0007	0.003675	2.4925	44.506	--	0.02995	0.0003	0.00075	585.1	10.5	0.00975	0.06	0.000805	142.0675	0.00011	--	0.0007	0.001225	0.1425	500.2	40.008	0.02895	0.0003	0.00085	--	0.00315
ASB EFF	11/19/2008	2	0.08	0.0042	270	0.00055	5.1	--	0.0035	0.0039	1.2	73	--	0.085	0.0015	0.0015	1200	8	0.012	0.08	0.0035	270	0.00055	--	0.0035	0.0038	0.45	990	76	0.089	0.0015	0.0015	2300	0.012
n	12/3/2008	2	0.11	0.00072	290	0.00011	4.5	--	0.0007	0.0033	4.95	79	--	0.091	0.0003	0.0007	1240	66	0.013	0.2	0.00096	282	0.00011	--	0.0007	0.0023	3.65	1000	74	0.088	0.0003	0.00068	--	0.0054
Count		53	55	34	54	33	31	1	34	33	55	48	8	33	33	33	58	31	33	56	54	56	56	23	55	56	56	52	56	56	56	56	30	56
Median		10	0	0.00	280	0.00011	5.7	0.11	0.0007	0.0038	2.4925	74	20.5	0.019	0.0003	0.001	1400	10	0.0085	0.08	0.0027	275	0.00011	0.0394	0.0007	0.0027	0.795	995	75.00	0.0255	0.0003	0.00135	2400	0.00605

Source: Project Database. Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by RWQCB and "Electronic Data Transfer - ERA Treatment Data" by Atlantic Richfield.

Abbreviations
mg/L = milligrams per liter
SW = surface water
TDS = total dissolved solids
TSS = total suspended solids

TABLE 31
RECENT SURFACE WATER QUALITY FIELD PARAMETERS
ASPEN SEEP BIOREACTOR EFFLUENT (ASB EFF)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters					
		Conductivity µS/cm	DO mg/L	ORP mV	pH su	SC µS/cm	Temp C
ASB EFF	9/14/2006	--	2.4	--	6.28	2.49	15.67
ASB EFF	10/17/2006	--	--	--	7.28	1.94	6.52
ASB EFF	10/24/2006	--	--	--	7.24	1.65	5.72
ASB EFF	11/22/2006	--	--	--	6.76	1.67	2.66
ASB EFF	11/27/2006	--	--	--	6.89	1.79	1.85
ASB EFF	11/30/2006	--	--	--	7.28	1.83	1.87
ASB EFF	12/2/2006	--	--	--	6.76	1.67	2.66
ASB EFF	12/9/2006	--	--	--	6.7	1.79	1.85
ASB EFF	12/11/2006	--	--	--	6.76	1.74	1.13
ASB EFF	12/14/2006	--	--	--	6.9	1.68	1.75
ASB EFF	12/26/2006	--	--	--	6.88	1.78	1.12
ASB EFF	1/9/2007	--	--	--	7.08	1.82	2.1
ASB EFF	1/26/2007	--	--	--	6.49	3.13	0.51
ASB EFF	2/2/2007	--	--	--	5.89	3.09	0.73
ASB EFF	2/7/2007	--	--	--	7.49	2.15	0.65
ASB EFF	2/12/2007	--	--	--	6.56	2.85	0.92
ASB EFF	2/15/2007	--	--	--	6.61	2.78	0.64
ASB EFF	2/16/2007	--	--	--	6.73	2.97	0.7
ASB EFF	3/6/2007	--	--	--	8.55	1.47	0.55
ASB EFF	3/8/2007	--	--	--	8.06	1.36	0.69
ASB EFF	3/21/2007	2639	19.13	--	6.4	--	8.26
ASB EFF	4/4/2007	2.43	--	--	5.94	--	15.68
ASB EFF	4/10/2007	2936	17.67	--	7.04	--	12.09
ASB EFF	4/17/2007	2895	7.47	--	7.6	--	11.06
ASB EFF	4/26/2007	2600	7.94	--	6.94	--	11.78
ASB EFF	5/10/2007	3308	7.06	--	8.38	--	20.88
ASB EFF	5/16/2007	2915	7.02	--	7.02	--	19.72
ASB EFF	5/24/2007	2845	5.99	228	8.67	--	12.44
ASB EFF	5/29/2007	3208	4.84	95.2	7.26	--	19.75
ASB EFF	6/9/2007	2987	6.75	110.9	7.1	--	13.51
ASB EFF	6/14/2007	3147	3.63	-19.6	6.42	--	23.35
ASB EFF	6/21/2007	3204	4.17	14.3	6.57	--	25.25
ASB EFF	6/27/2007	3230	4.67	-70.8	6.84	--	24.14
ASB EFF	7/3/2007	1612	6.43	-5.2	7.17	--	19.47
ASB EFF	7/11/2007	3029	5.82	-32.2	7.12	--	16.67
ASB EFF	7/19/2007	3079	40.9	-65.5	7.11	--	24.5
ASB EFF	8/9/2007	3473	33.5	1733	7.29	--	20.35
ASB EFF	8/15/2007	2984	3.16	146.7	6.67	--	24.35
ASB EFF	8/15/2007	--	26.15	16.9	7.03	3465.5	24.115
ASB EFF	8/22/2007	2447	49.3	-113	7.06	--	24.23
ASB EFF	8/28/2007	2960	4.07	-62	7.4	--	23.76

TABLE 31
RECENT SURFACE WATER QUALITY FIELD PARAMETERS
ASPEN SEEP BIOREACTOR EFFLUENT (ASB EFF)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters					
		Conductivity µS/cm	DO mg/L	ORP mV	pH su	SC µS/cm	Temp C
ASB EFF	8/28/2007	--	4.07	-62	7.4	2960	23.76
ASB EFF	9/5/2007	2960	3.46	-140	7.71	--	16.8
ASB EFF	9/12/2007	2822	4.16	-84.6	7.92	--	19.61
ASB EFF	9/12/2007	--	4.16	-84.6	7.92	2822	19.01
ASB EFF	9/21/2007	2687	6.39	2.6	8.42	--	10.78
ASB EFF	9/21/2007	--	6.39	2.6	8.42	2687	10.78
ASB EFF	10/3/2007	3018	9.28	-5.2	8.22	--	12
ASB EFF	10/23/2007	2618	7.19	63	7.91	--	11.3
ASB EFF	11/27/2007	2968	10.58	-1.7	7.25	--	3.63
ASB EFF	12/12/2007	2747	10.48	-31.9	6.9	--	3.46
Count		27	31	24	51	24	51
Median		2960.00	6.4300	-5.2	7.08	1.885	11.3

Source: Project Database. Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by RWQCB and "Electronic Data Transfer - ERA Treatment Data" by Atlantic Richfield.

Abbreviations
C = Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ORP = oxygen reduction potential
SC = specific conductance
su = standard units
SW = surface water
µS/cm = microsiemens per centimeter

TABLE 32
RECENT SURFACE WATER QUALITY FIELD PARAMETERS ROTATING CYLINDER TREATMENT SYSTEM EFFLUENT (RCTS EFF)

Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters				
		DO	ORP	pH	SC	Temp
		mg/L	mV	su	µS/cm	C
RCTS EFF	8/10/2007	7.28	-76.5	8.26	3272	12.68
RCTS EFF	8/13/2007	6.9	-39	8.18	3.282	13.38
RCTS EFF	8/14/2007	6.815	-18.65	8.315	1677.6	14.355
RCTS EFF	8/15/2007	6.885	-59.65	8.79	1601.6	15.52
RCTS EFF	8/16/2007	6.74	77.2	8.27	3.322	14.85
RCTS EFF	8/17/2007	6.9	-30.4	8.22	3.307	14.14
RCTS EFF	8/27/2007	6.5	1.9	8.26	3304	15.06
RCTS EFF	8/28/2007	6.68	-25.7	8.81	3.245	15.55
RCTS EFF	8/29/2007	7.3	-35.4	9.32	3.29	14.87
RCTS EFF	8/30/2007	7.03	-17	7.92	3.279	13.74
RCTS EFF	8/31/2007	7.28	200.1	8.41	3.201	13.75
RCTS EFF	9/10/2007	7.53	-6.3	8.12	3268	11.05
RCTS EFF	9/11/2007	6.97	-51	7.95	3294	13.11
RCTS EFF	9/12/2007	6.58	-27.1	8.78	3176	13.49
RCTS EFF	9/13/2007	6.34	-100	7.56	3276	13.39
RCTS EFF	9/14/2007	7.97	-302	8.72	3190	10.14
RCTS EFF	9/17/2007	7.85	-19.9	8.22	3.418	10.64
RCTS EFF	9/18/2007	7.03	-61.2	6.2	3.421	10.03
RCTS EFF	9/19/2007	8.88	83	5.24	2.221	9.98
RCTS EFF	9/20/2007	7.57	-99	6.56	3.392	10.46
RCTS EFF	9/21/2007	8.5	-15.4	11.97	5.12	10
Count		21	21	21	21	21
Median		7.03	-27.10	8.26	3.421	13.39

Source: Project Database. Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by RWQCB and "Electronic Data Transfer - ERA Treatment Data" by Atlantic Richfield.

Notes

Laboratory samples were not collected for all samples. Only field parameters were reported from this station.

Abbreviations

C = Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ORP = oxygen reduction potential
SC = specific conductance
su = standard units
SW = surface water
µS/cm = microsiemens per centimeter

TABLE 33
RECENT SURFACE WATER QUALITY STATION
ASPEN SEEP (AS)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters Conductivity µS/cm	DO mg/L	ORP mV	pH su	SC uS/cm	Temp C	Total Acidity mg/L	Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Cl mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TSS mg/L	Zn mg/L	Dissolved Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Hardness mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TDS mg/L	Zn mg/L
AS	9/27/2005	--	--	--	2.7	2435.5	8.3	--	51.2	0.001	377	0.0024	--	0.37	0.0039	1.32	133	91.4	21.7	0.682	--	--	--	--	0.705	49.1	0.001	352	0.0025	0.37	0.0007	1.17	121	--	86.4	21.9	0.542	--	--	2190	--	0.764
AS	10/6/2005	--	--	--	--	--	--	635	49.1	--	357	--	--	--	--	--	133	88.5	--	--	--	--	1810	--	--	47.6	0.0018	359	0.0026	0.346	0.0149	1.13	133	--	89.1	--	0.572	0.0001	0.0021	--	--	0.793
AS	10/25/2005	--	--	--	3	2395	8.4	--	49.4	0.001	359	0.0039	--	0.37	0.0073	0.869	128	88.8	20.9	0.73	--	--	--	--	0.974	50	0.001	363	0.0025	0.37	0.0042	0.927	132	--	90.5	21.2	0.494	--	--	2320	--	0.688
AS	11/4/2005	--	--	--	--	--	--	541	49.5	--	351	--	--	--	--	--	127	88.4	--	--	--	--	1110	--	--	49.8	0.0018	367	0.0025	0.334	0.019	1.1	131	--	89.5	--	0.588	0.0002	0.0046	--	--	0.812
AS	11/30/2005	--	--	--	3.1	2275.5	5.4	--	44.6	0.001	329	0.0019	--	0.36	0.0046	0.973	129	80.5	19	0.469	--	--	--	--	0.703	48	0.001	355	0.0021	0.31	0.0054	0.93	143	--	88.3	20.5	0.51	--	--	2740	--	0.739
AS	12/13/2005	--	--	--	--	--	--	491	46.5	--	351	--	--	--	--	--	141	85.3	--	--	--	--	1610	--	--	44.1	0.00154	314	0.0023	0.291	0.019	0.924	126	--	81.8	--	0.481	0.0035	0.0021	--	--	0.705
AS	1/24/2006	--	--	--	3.1	2236.5	4.6	--	53	0.0017	360	0.002	--	0.33	0.0056	0.96	140	90	22	0.53	--	--	--	--	0.69	48	0.0014	320	0.0021	0.32	0.0056	0.97	130	--	83	19	0.54	--	--	1840	2690	0.69
AS	2/4/2006	--	--	--	--	--	--	1800	45	--	340	--	--	--	--	--	130	--	11	--	--	--	1600	--	--	46	0.0025	340	0.0022	0.31	0.0033	0.85	120	1200	85	--	0.46	0.0002	0.0017	--	--	0.64
AS	2/22/2006	--	--	--	2.9	2257.5	5.2	--	52	0.0016	330	0.0021	--	0.31	0.006	0.94	130	84	19	0.52	--	--	--	--	0.67	50	0.00069	340	0.0022	0.31	0.0053	0.98	130	--	85	20	0.52	--	--	--	--	0.7
AS	3/13/2006	--	--	--	--	--	--	1400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1500	--	--	49	0.001	350	0.0021	0.28	0.0049	0.75	130	1300	89	--	0.41	0.00008	0.0021	--	--	0.52
AS	3/22/2006	--	--	--	3	2287.5	5.3	--	47	0.00092	340	0.0021	--	0.31	0.0063	0.95	130	85	21	0.48	--	--	--	--	0.57	45	0.00091	340	0.002	0.29	0.0058	0.94	130	--	83	19	0.47	--	--	2200	2900	0.57
AS	4/6/2006	--	--	--	--	--	--	1000	49	--	340	--	--	--	--	--	120	--	22	--	--	--	1600	--	--	50	0.001	350	0.0022	0.28	0.0054	0.77	120	1200	88	--	0.4	0.00015	0.0024	--	--	0.5
AS	4/25/2006	--	--	--	2.6	2435	8.4	--	59	0.0019	370	0.0033	--	0.34	0.0088	1.8	130	91	21	0.57	--	--	--	--	0.75	55	0.0011	370	0.0033	0.34	0.0087	1.8	130	--	90	21	0.56	--	--	1900	1300	0.74
AS	5/1/2006	--	--	--	--	--	--	1100	57	--	360	--	--	--	--	--	120	--	22	--	--	--	2000	--	--	59	0.001	370	0.0027	0.31	0.01	2	100	1300	92	--	0.45	0.00008	0.006	--	--	0.59
AS	5/16/2006	--	--	--	--	--	--	1500	61	--	390	--	--	--	--	--	140	--	24	--	--	--	1900	--	--	61	0.0019	400	0.0029	0.31	0.0086	2.1	140	1400	98	--	0.46	0.00011	0.0041	--	--	0.6
AS	5/30/2006	--	--	--	2.9	2658	9.8	--	71	0.0016	400	0.004	--	0.39	0.0098	2.1	150	100	23	0.64	--	--	--	--	0.83	61	0.0014	360	0.0038	0.39	0.01	2.1	140	--	93	21	0.64	--	--	2300	1600	0.85
AS	6/13/2006	--	--	--	--	--	--	1600	59	--	400	--	--	--	0.005	--	150	100	--	--	--	--	2100	--	--	57	--	410	0.0033	0.27	--	1.9	150	1400	99	--	0.4	0.000049	0.0025	--	--	0.54
AS	6/26/2006	--	--	--	2.8	2770	11.9	--	52	0.0021	390	0.0034	--	0.39	0.0072	2.2	140	100	23	0.66	--	--	--	--	0.88	51	0.0012	390	0.0035	0.38	0.0078	1.9	150	--	100	23	0.6	--	--	2200	3300	0.82
AS	6/27/2006	--	--	--	--	--	--	700	62	--	410	--	--	--	--	--	150	100	--	--	--	--	2100	--	--	60	--	400	0.0038	0.38	0.0058	1.7	140	1400	100	--	0.56	0.0002	0.0032	--	--	0.85
AS	7/25/2006	--	--	--	2.7	2653	13.7	850	49	--	340	--	--	--	--	--	120	--	23	--	--	--	2300	--	--	62	0.001	430	0.0027	0.3	0.0038	1.2	150	1500	100	--	0.43	0.00018	0.0024	--	--	0.59
AS	7/25/2006	--	--	--	--	--	--	--	56	0.0016	390	0.0036	--	0.37	0.0081	2.4	140	100	23	0.66	--	--	--	--	0.97	57	0.0015	380	0.0037	0.37	0.007	2.1	140	--	100	23	0.58	--	--	2200	3000	0.82
AS	8/24/2006	--	--	--	--	--	--	970	55	--	380	--	--	--	--	--	150	--	26	--	--	--	2100	--	--	57	0.005	390	0.0033	0.38	0.0056	1.6	150	1400	97	--	0.56	0.00078	0.0032	--	--	0.87
AS	8/29/2006	--	--	--	3	2615.5	10.6	--	78	0.001	350	0.003	--	0.38	0.0055	2	150	92	33	0.58	--	--	--	--	0.85	46	0.0016	360	0.003	0.39	0.0045	1.7	150	--	98	23	0.6	--	--	2200	3100	0.89
AS	9/14/2006	--	8.2	--	2.86	2.3	15.12	1200	38	0.005	--	0.0022	--	0.29	0.0056	1.2	110	70	17	0.44	0.0004	0.003	830	--	0.62	44	0.005	330	0.0024	0.31	0.0056	1.2	120	--	75	--	0.47	0.0004	0.003	--	2500	0.67
AS	9/27/2006	--	--	--	2.7	2481	8.5	--	94	0.0025	360	0.0031	--	0.35	0.0059	1.4	150	95	42	0.6	--	--	--	--	0.77	50	0.0016	350	0.003	0.37	0.0059	1.5	150	--	97	20	0.56	--	--	2300	2800	0.83
AS	11/27/2006	--	--	--	3.25	1.69	4.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	11/29/2006	--	--	--	--	--	--	--	77	0.0015	360	0.0027	--	0.35	0.0053	1.3	150	90	34	0.57	--	--	--	--	0.76	75	0.0014	360	0.0024	0.34	0.0049	1.2	160	--	92	33	0.52	--	--	2000	2700	0.7
AS	11/30/2006	--	--	--	--	--	--	1000	48	--	350	--	--	--	--	--	140	88	--	--	--	--	1800	--	--	52	0.007	390	0.0026	0.36	0.007	1.4	150	1400	94	--	0.56	0.001	0.003	--	--	0.8
AS	12/9/2006	--	--	--	3.28	1.69	4.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	12/11/2006	--	--	--	2.9	1.69	4.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	12/14/2006	--	--	--	2.83	1.71	5.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	12/19/2006	--	--	--	--	--	--	--	50	0.0019	340	0.0025	--	0.37	0.0047	1.3	150	86	22	0.58	--	--	2000	--	0.72	49	0.0016	340	0.0024	0.38	0.0051	1.4	140	--	86	22	0.58	--	--	--	--	0.69
AS	12/26/2006	--	--	--	2.88	1.77	3.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	1/6/2007	--	--	--	3.01	1.68	2.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	1/9/2007	--	--	--	3.01	1.96	2.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	1/15/2007	--	--	--	--	--	--	610	31	--	270	--	--	--	--	--	91	57	--	--	--	--	1300	--	--	25	0.007	220	0.0016	0.23	0.007	0.79	73	730	47	--	0.35	0.001	0.0034	--	--	0.51
AS	1/24/2007	--	--	--	--	--	--	--	56	0.0015	360	0.0024	--	0.41	0.0059	1.5	130	91	21	0.6	--	--	--	--	0.71	51	0.0012	340	0.0023	0.39	0.0053	1.4	130	--	86	20	0.57	--	--	1900	2700	0.69
AS	1/26/2007	--	--	--	2.89	2.85	4.81	810	45	--	340	--	--	--	--	--	120	81	--	--	--	--	1900	--	--	47	0.0007	340	0.0017	0.35	0.0036	1.2	120	1200	84	--	0.52	0.00012	0.0015	--	--	0.74
AS	2/2/2007	--	--	--	2.83	2.85	4.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	2/7/2007	--	--	--	2.94	2.83	5.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	2/12/2007	--	--	--	3.13	2.83	4.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	2/15/2007	--	--	--	3.18	2.83	5.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	2/16/2007	--	--	--	3.19	2.83	5.18	100	41	--	350	--	--	--	--	--	93	83	--	--	--	--	1800	--	--	46	0.007	350	0.0024	0.37	0.007	1.2	100	1200	85	--	0.55	0.001	0.0031	--	--	0.77
AS	3/6/2007	--	--	--	3.15	1.7	6.27	--	42	0.0026	310	0.005	--	0.77	0.011	2.8	130	80	19	1.2	--	--	--	--	1.6	42	0.0025	310	0.005	0.71	0.01	2.6	130	--	79	19	1.1	--	--	2100	2600	1.5
AS	3/8/2007	20.66	2672	--	3.22	1.71	6.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	3/21/2007	2646	19.47	--	3.03	--	7.38	680	48	--	340	--	--	--	--	--	120	87	--	--	--	--	1800	--	--	48	0.0007	330	0.0014	0.28	0.0042	1.4	120	1200	88	--	0.35	0.0001	0.0017	--	--	0.37
AS	3/28/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	49.5	0.002	352	0.0049	0.338	0.009	1.28	120	--	84	19.3	0.565	--	--	1900	2800	0.779
AS	4/4/2007	2667	23.57	--	3.11	--	7.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	4/10/2007	2617	4.72	--	2.98	--	8.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	4/17/2007	2467	2.7	--	3.24	--	7.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	4/25/2007	--	--	--	--	--	--	--	47.2	0.003	336	0.0078	--	0.345	0.009	1.32	124	77	19.2	0.544	--	--	--	--	0.779	47	0.022	380	0.005	0.348	0.01	1.27	131	--	82	20.5	0.582	--	--	1900	2600	0.81
AS	4/26/2007	2863	7.69	--	2.94	--	7.82	920	23.52	--	180.095	--	--	--	--	--	60.0075	42.004	--	--	--	--	850.075	--	--	20.02	0.0007	160.025	0.000825	0.140075	0.00185	0.60027	55.0075	550.5	40.004	--	0.17545	0.000155	0.00105	--	--	0.20125
AS	5/10/2007	2536	5.75	--	2.86	--	10.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	5/16/2007	2548	4.78	478.1	2.95	--	9.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	5/24/2007	2736	5.49	462.7	2.75	--	9.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	5/29/2007	--	--	--	2.7	--	11.95	57	10.21	--	217.5525	--	--	--	--	--	26.67875	38.01975	--	--	--	--	1400.05	--	--	10.54425	0.00425	222.54	0.0006375	--	0.00175	0.2766625	28.67875	702.75	38.01025	--	0.140725	0.00025	0.001675	--	--	0.1792
AS	5/29/2007	--	--	--	--	--	--	--	230	0.015	361	0.0336	--	1.66	0.038	6.13	566	87	93.8	2.62	--	--	--	--	3.78	46.2	0.01	362	0.0054	0.349	0.009	1.2	123	--	88	20.4	0.578	--	--	2000	2700	0.807
AS	6/8/2007	2596	4.4	445.3	--	--	8.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	6/9/2007	2717	4.39	495.5	2.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	6/14/2007	2658	4.29	469.9	2.4	--	14.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	6/21/2007	2699	3.84	500.3	2.71	--	13.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	6/27/2007	2550	3.3	511	2.46	--	13.98	145	41	--	315	--	--	--	--	--	100	80	--	--	--	--	2000	--	--	39	0.0035	325	0.00205	0.33	0.0035	0.95	100	1100	81.5	--	0.49	0.00058	0.0026	--	--	0.65
AS	7/3/2007	2557	4.28	498.7	2.47	--	11.33	130	40	--	320	--	--	--	--	--	120	82	--	--	--	--	2000	--	--	39	0.0047	320	0.0019	0.32	0.0035	0.91	110	1100	80	--	0.48	0.0005	0.0021	--	--	0.65
AS	7/11/2007	2570	49.2	510	2.67	--	12.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	7/12/2007	--	--	--	--	--	--	1400	43	--	330	--	--	--	--	--	110	85	--	--	--	--	1800	--	--	43	0.0035	340	0.0021	0.31	0.0035	0.97	110	1200	85	--	0.48	0.0005	0.0016	--	--	0.71
AS	7/17/2007	--	--	--	--	--	--	1700	45	--	320	--	--	--	--	--	100	82	--	--	--	--	1600	--	--	40	0.0007	320	0.0016	--	0.0031	1.1	100	1100	81	--	0.39	0.00015	0.0021	--	--	0.41
AS	7/19/2007	3012	50.3	1977.3	2.4	--	13.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	7/23/2007	--	--	--	--	--	--	--	45.3	0.015	362	0.005	--	0.331	0.009	1.12	103	86	19	0.535	--	--	--	--	0.76	45.3	0.01	344	0.0055	0.344	0.008	1.13	107	--	84	20	0.56	--	--	1950	2530	0.797
AS	7/27/2007	2750	46.2	2026.4	2.79	--	13.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 33
RECENT SURFACE WATER QUALITY STATION
ASPEN SEEP (AS)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters Conductivity µS/cm	DO mg/L	ORP mV	pH su	SC uS/cm	Temp C	Total Acidity mg/L	Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Cl mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TSS mg/L	Zn mg/L	Dissolved Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Hardness mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TDS mg/L	Zn mg/L
AS	8/1/2007	--	--	--	--	--	--	1800	43	0.0035	330	0.0019	--	--	0.0035	0.95	99	85	--	0.5	0.0005	0.0018	1600	--	0.7	40	0.0035	310	0.0021	--	0.0035	0.93	93	1100	78	--	0.52	0.0005	0.0015	--	--	0.64
AS	8/9/2007	2461	5.4	389	2.78	--	12.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	8/15/2007	--	23.4	409.5	2.85	--	14.53	680	38	0.0007	310	0.0016	2.9	--	0.0024	0.99	90	81	--	0.37	0.0001	0.0017	1800	16	0.42	39	0.0035	320	0.002	--	0.0035	0.92	99	1100	83	--	0.49	0.0005	0.0025	--	2500	0.68
AS	8/15/2007	2407	41.8	450	2.96	2934	14.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	8/22/2007	2514	4.19	425.8	2.92	--	13.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	8/28/2007	--	4.19	425.8	2.86	--	13.56	800	43	0.0007	340	0.0014	2.7	--	0.0031	1.1	100	84	--	0.36	0.0001	0.0017	1600	10	0.4	41	0.0007	320	0.0014	--	0.0027	0.83	97	1100	81	--	0.33	0.0001	0.0014	--	2700	0.38
AS	8/28/2007	2543	3.46	450.7	2.86	2514	13.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	8/29/2007	--	--	--	--	--	--	--	44.1	0.015	337	0.005	--	0.351	0.068	1.07	106	82	20.6	0.595	--	--	--	--	0.781	45.7	0.015	351	0.0054	0.346	0.009	1.06	107	--	85	20	0.566	--	--	2010	2630	0.753
AS	9/5/2007	2493	5.74	452.5	2.8	--	11.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	9/12/2007	--	5.74	452.5	2.88	--	12.44	710	42	0.0007	320	0.0016	2.8	--	0.0029	0.93	97	84	--	0.35	0.0001	0.0013	1600	13	0.77	38	0.0007	290	0.0014	--	0.0032	0.95	92	1100	80	--	0.36	0.0003	0.0019	--	2500	0.44
AS	9/12/2007	2503	5.23	428.9	2.88	2493	12.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	9/21/2007	--	5.23	2.6	2.91	--	8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	9/21/2007	2345	4.8	484.1	2.91	2503	8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	9/25/2007	--	--	--	--	--	--	--	48	0.015	365	0.005	--	0.373	0.012	1.09	110	90	21.5	0.576	--	--	--	--	0.819	46.6	0.01	325	0.0051	0.354	0.01	1.01	106	--	82	20.2	0.568	--	--	1910	2330	0.785
AS	9/27/2007	--	--	--	--	--	--	316	20.52	0.0007	160.085	0.000755	2.05	--	0.00315	0.445375	45.0075	41.62	--	0.17545	0.0001	0.0008	800.1	14	0.20625	19.5305	0.0007	155.225	0.000805	--	0.0027	0.475375	44.0075	551.1	38.13	--	0.20045	0.000125	0.00115	--	1281.5	0.37625
AS	10/3/2007	2287	5.59	498	2.85	--	8.74	4	0.04	0.0007	0.05	0.00011	0.25	--	0.0007	0.00075	0.015	0.015	--	0.0009	0.0001	0.0003	0.2	10	0.0025	0.04	0.0007	0.32	0.00011	--	0.0007	0.00075	0.015	1.1	0.065	--	0.0009	0.0001	0.0003	--	10	0.018
AS	10/8/2007	--	--	--	--	--	--	620	46	0.0007	340	0.0015	7	--	0.0037	0.94	94	88	--	0.34	0.0001	0.0019	1500	10	0.4	20	0.0007	150	0.0014	--	0.0036	0.86	42	540	39	--	0.4	0.00018	0.0016	--	2400	0.41
AS	10/10/2007	2262	6.39	482.4	2.8	--	7.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	10/18/2007	2306	5.05	488	2.83	--	7.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	10/23/2007	2652	6.23	479.6	2.74	--	6.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	10/26/2007	--	--	--	--	--	--	640	41	0.0007	330	0.0015	4.2	--	0.0038	0.58	100	81	--	0.37	0.0001	0.0022	1500	12	0.73	44	0.0007	320	0.0015	--	0.0035	0.7	100	1100	83	--	0.35	0.00011	0.0022	--	2500	0.42
AS	10/31/2007	--	--	--	--	--	--	640	45	0.0007	320	0.0015	4.6	--	0.0035	0.7	100	82	--	0.37	0.0001	0.0023	1600	15	0.75	44	0.0007	320	0.0016	--	0.0039	0.68	100	1100	83	--	0.35	0.00013	0.0021	--	2500	1.2
AS	11/13/2007	--	--	--	--	--	--	--	19.02	0.00105	150.41	0.000955	1.905	--	0.00175	0.405375	50.0075	36.55	--	0.21045	0.00015	0.00125	800.1	11	0.29625	21.52	0.0014	155.195	0.000755	--	0.0019	0.380375	55.0075	550.75	41.065	--	0.18105	0.0001	0.00115	--	1267.5	0.3677
AS	11/27/2007	2216	7.2	482.2	2.86	--	4.94	--	44	0.0007	340	0.0014	4.6	--	0.0023	0.7	130	88	--	0.31	0.0001	0.0022	1500	10	0.41	41	0.0007	300	0.0013	--	0.0019	0.74	110	1100	77	--	0.31	0.00012	0.00046	--	2300	0.37
AS	12/12/2007	--	0.0029	0.64	3.01	--	4.77	--	20.02	0.000785	150.0445	0.000805	3.6	--	0.0018	0.415375	50.0075	37.56	--	0.23545	0.0001	0.0009	750.75	10	0.18785	20.02	0.0007	150.06	0.000755	--	0.00225	0.385425	55.0075	550.5	39.075	--	0.1811	0.0001	0.0009	--	1241	0.22255
AS	1/15/2008	--	--	--	--	--	--	620	39	0.0007	310	0.0014	3.5	--	0.0027	0.66	110	75	--	0.34	0.0003	0.0022	1600	10	0.42	41	0.0007	310	0.0015	--	0.0028	0.63	110	1100	78	--	0.37	0.0003	0.002	--	2500	0.42
AS	2/12/2008	--	--	--	--	--	--	650	36	0.0007	280	0.0017	2.4	--	0.0028	0.61	98	71	--	0.37	0.0003	0.0017	1500	10	0.75	40	0.0007	310	0.0011	--	0.0026	0.76	110	1100	76	--	0.47	0.0003	0.0017	--	2400	0.64
AS	3/18/2008	--	--	--	--	--	--	510	36	0.0007	300	0.0015	8.1	--	0.002	0.6	100	71	--	0.35	0.0003	0.0022	1400	19	0.43	37	0.0007	300	0.0014	--	0.0024	0.57	110	1000	75	--	0.33	0.0003	0.0019	--	2500	0.39
AS	4/10/2008	--	--	--	--	--	--	520	41	0.0007	320	0.0015	2.3	--	0.0023	0.67	120	81	--	0.36	0.0003	0.0021	1600	23	0.7	39	0.0007	300	0.0015	--	0.0023	0.67	110	1100	76	--	0.36	0.0003	0.0023	--	2300	0.69
AS	5/14/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	5/15/2008	--	--	--	--	--	--	520	39	0.0007	300	0.0015	2.9	--	0.003	0.71	110	78	--	0.37	0.0003	0.0017	1600	45	0.69	40	0.0007	310	0.0015	--	0.0029	0.64	110	1100	81	--	0.37	0.00064	0.0023	--	2500	0.7
AS	5/27/2008	--	--	--	--	--	--	276	18.52	0.0007	150	0.00081	1.95	--	0.00195	0.30595	50.0075	37.65	--	0.17545	0.0003	0.00115	850.185	12	0.2023	18.52	0.0007	150.5	0.0008	--	0.0028	0.30615	50.0075	520.5	37.2	--	0.18045	0.0003	0.001	--	1300	0.2023
AS	6/3/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1700	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS	6/10/2008	--	--	--	--	--	--	540	40	0.0007	300	0.0015	3.3	--	0.0029	0.69	110	75	--	0.34	0.0003	0.002	1700	24	0.44	41	0.0007	300	0.0013	--	0.0026	0.71	110	1100	76	--	0.35	0.0003	0.0018	--	2300	0.45
AS	6/24/2008	--	--	--	--	--	--	540	42	0.0007	300	0.0014	2.7	--	0.0028	0.69	110	78	--	0.33	0.0003	0.0019	1600	23	0.41	41	0.0007	300	0.0014	--	0.0028	0.7	110	1100	77	--	0.33	0.0003	0.0018	--	2400	0.42
AS	7/10/2008	--	--	--	--	--	--	560	38	0.0014	310	0.0016	2.4	--	0.0025	0.66	120	80	--	0.41	0.0006	0.002	1700	14	0.53	47	0.0014	300	0.0015	--	0.0022	0.66	130	1100	87	--	0.39	0.0006	0.0016	--	2500	0.54
AS	7/22/2008	--	--	--	--	--	--	560	46	0.0007	310	0.0014	2.3	--	0.0031	0.55	120	84	--	0.34	0.0003	0.0018	1700	10	0.63	43	0.0007	300	0.0013	--	0.0027	0.53	110	1100	79	--	0.32	0.0003	0.0012	--	2500	0.62
AS	8/5/2008	--	--	--	--	--	--	560	96	0.0007	690	0.0011	3.1	--	0.0019	0.59	280	190	--	0.37	0.0003	0.0015	1600	16	0.44	39	0.0007	280	0.0012	--	0.0021	0.6	110	1000	75	--	0.29	0.0003	0.0016	--	2400	0.38
AS	8/14/2008	--	--	--	--	--	--	530	37	0.0007	280	0.0012	2.3	--	0.0024	0.47	100	72	--	0.33	0.0003	0.0018	1600	30	0.37	36	0.0007	270	0.0012	--	0.0016	0.45	100	960	70	--	0.32	0.0003	0.0017	--	2400	0.36
AS	8/19/2008	--	--	--	--	--	--	540	46	0.0014	300	0.0016	1.8	--	0.0024	0.59	110	82	--	0.39	0.0006	0.0023	1600	13	0.52	46	0.0014	310	0.0017	--	0.0024	0.6	110	1100	83	--	0.41	0.0006	0.0024	--	2600	0.54
AS	8/26/2008	--	--	--	--	--	--	540	40	0.0014	270	0.0014	3.8	--	0.0014	0.6	100	73	--	0.37	0.0006	0.0018	1700	18	0.5	37	0.0014	250	0.0014	--	0.0014	0.6	92	910	69	--	0.37	0.0006	0.0017	--	2600	0.5
AS	9/24/2008	--	--	--	--	--	--	530	37	0.0007	280	0.0011	2.4	--	0.021	0.53	110	74	--	0.35	0.0003	0.0015	1723.333333	10	0.65	36	0.0011	290	0.0012	--	0.0025	0.55	110	1000	75	--	0.34	0.0003	0.0015	--	2800	0.65
AS	9/30/2008	--	--	--	--	--	--	540	38	0.0007	287	0.00097	2.8	--	0.0023	0.51	111	73	--	0.34	0.0003	0.0015	1610	10	0.4	38	0.0007	306	0.00097	--	0.002	0.5	117	1100	77	--	0.33	0.0003	0.0016	--	2500	0.42
AS	10/13/2008	--	--	--	--	--	--	540	38	0.0035	280	0.0015	4.4	--	0.0035	0.7	110	73	--	0.45	0.0015	0.0015	1600	15	0.61	40	0.0035	300	0.0015	--	0.0035	0.71	96	1100	77	--	0.45	0.0015	0.0016	--	2400	0.61
AS	10/27/2008	--	--	--	--	--	--	540	40	0.0007	309	0.0011	3.3	--	0.0021	0.57	105	80	--	0.32	0.0003	0.0019	1580	10	0.65	37	0.0007	280	0.0011	--	0.0023	0.57	110	990	71	--	0.33	0.0003	0.0019	--	--	0.65
AS	11/19/2008	--	--	--	--	--	--	530	38	0.0007	290	0.0011	2.4	--	0.002	0.38	110	76	--	0.28	0.0003	0.0015	1700	15	0.32	36	0.0007	280	0.0011	--	0.0017	0.34	110	1000	72	--	0.26	0.0003	0.0012	--	2400	0.32
AS	12/3/2008	--	--	--	--	--	--	530	37	0.0035	290	0.0017	3	--	0.0035	0.69	114	75	--	0.43	0.0015	0.0027	1600	22	0.67	36	0.0007	292	0.0011	--	0.0028	0.56	116	1000	75	--	0.29	0.0003	0.0019	--	--	0.38

1. Source: Project Database. Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by RWQCB and "Electronic Data Transfer - ERA Treatment Data" by Atlantic Richfield.

2. All results have an EPA Usability Code of 1

Abbreviations:
SW = surface water
uS/cm = microSiemens per centimeter
DO = dissolved Oxygen
mg/L = milligram per Liter
ORP = Oxygen reduction potential
mV = millivolts
su = standard units
SC = specific conductance
C = Celsuis
TSS = total suspended solids
TDS = total dissolved solids

TABLE 34
RECENT SURFACE WATER QUALITY LABORATORY RESULTS DELTA SEEP (DS)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters Conductivity µS/cm	DO mg/L	ORP mV	pH su	SC µS/cm	Temp C	Total Acidity mg/L	Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Cl mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TSS mg/L	Zn mg/L	Dissolved Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Hardness mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TDS mg/L	Zn mg/L
DS	9/29/2005	--	--	--	--	--	--	394	2.675	0.205	270.5	0.00023	--	0.21	0.00215	0.0086	44.5	77.1	13.45	0.42	0.00063	0.0017	1080	--	0.10285	1.52	0.09345	291.5	0.00023	0.2225	0.0019	0.0038	27.05	--	81.7	14.4	0.4495	0.00026	0.0017	--	--	0.08045
DS	10/26/2005	--	--	--	5.1	1659	8.7	--	9.72	0.0579	336	0.0012	--	0.29	0.0033	0.0531	23.3	95.2	17.9	0.441	--	--	--	--	0.151	7.55	0.0603	312	0.0013	0.26	0.0011	0.0524	20.3	--	86.4	16.2	0.476	--	--	1270	--	0.163
DS	5/31/2006	--	--	--	--	--	--	--	27	0.046	320	0.0034	--	0.34	0.012	0.21	43	97	19	0.72	--	--	--	--	0.35	25	0.047	310	0.0033	0.33	0.011	0.21	39	--	92	19	0.71	--	--	1500	2200	0.37
DS	7/20/2006	--	4.2	--	3.78	1.78	17.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/21/2006	--	38.5	--	4.25	1.74	17.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/22/2006	--	41.8	--	4.4	1.82	20.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/23/2006	--	51.9	--	4.19	1.77	18.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/24/2006	--	2.2	--	4.6	1.89	13.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/25/2006	--	1.68	--	4.41	1.58	13.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/26/2006	--	9999	--	4.31	1.83	20.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/27/2006	--	--	--	4.49	1.75	18.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/28/2006	--	--	--	4.2	1.77	19.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/29/2006	--	--	--	4.52	1.48	12.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/30/2006	--	--	--	4.61	1.409	9.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/31/2006	--	9999	--	4.61	1.37	9.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/1/2006	--	91.6	--	4.62	1.39	9.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/2/2006	--	--	--	4.66	1.43	11.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/3/2006	--	--	--	4.25	1.88	21.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/4/2006	--	64.6	--	4.51	1.575	14.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/5/2006	--	86.7	--	4.81	1.376	9.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/6/2006	--	9999	--	4.59	1.45	10.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/7/2006	--	4.7	--	4.48	1.51	12.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/8/2006	--	8.9	--	4.36	1.495	11.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/9/2006	--	4.5	--	4.31	1.8937	15.95	83	7.1	0.0555	--	0.001225	--	0.28	0.0056	0.06135	29.5	82.5	16.5	0.525	0.0004	0.003	1150	--	0.174	1.7	0.073	280	0.00034	0.23	0.0056	0.0035	32	1000	79	14	0.42	0.0004	0.003	--	1800	0.09
DS	8/10/2006	--	3.6667	--	4.32	1.817	14.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/11/2006	--	--	--	4.32	1.6767	11.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/12/2006	--	--	--	4.32	2.2673	12.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/13/2006	--	5.4	--	4.30	1.629	11.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/14/2006	--	5.8667	--	4.34	1.6963	12.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/15/2006	--	6.9	--	4.47	1.5863	10.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/16/2006	--	4.5333	--	4.36	1.702	13.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/17/2006	--	3.2	--	4.50	1.73	13.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/18/2006	--	6.9667	--	4.37	1.6837	13.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/19/2006	--	4.9667	--	4.38	1.6843	13.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/20/2006	--	5.3333	--	4.44	1.6997	13.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/21/2006	--	5.5	--	4.27	1.758	15.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/22/2006	--	4.7	--	4.36	1.6273	12.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/23/2006	--	--	--	4.26	1.5643	10.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/24/2006	--	3.7	--	4.33	1.727	15.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/25/2006	--	8.8333	--	4.48	1.436	8.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	5/30/2007	--	--	--	--	--	--	--	3.9	0.055	273	0.0014	--	0.218	0.007	0.034	20.9	79	13.7	0.409	--	--	--	--	0.112	3.64	0.059	281	0.005	0.223	0.008	0.018	20.9	--	80	14.4	0.435	--	--	1100	1600	0.124
DS	6/29/2007	--	--	--	--	--	--	24	0.93	--	240	--	--	--	--	--	22	67	--	--	--	--	1200	--	--	0.94	0.074	260	0.00011	0.19	0.0007	0.0022	22	960	75	--	0.34	0.00012	0.00052	--	--	0.042
DS	7/2/2007	1.904	7.1	-26	5.97	--	16.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/3/2007	1.922	7.25	2.7	5.73	--	14.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/5/2007	1.936	3.97	17	5.68	--	27.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/6/2007	1.951	6.72	-7	5.78	--	22.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/9/2007	1.938	6.13	46	5.6	--	20.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/10/2007	1.962	7.08	9	5.84	--	13.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/11/2007	1.951	5.73	52.3	5.65	--	21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/12/2007	1.965	7.1	8	5.19	--	12.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/13/2007	1.92	--	67	5.53	--	15.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/14/2007	2056	9.8	--	4.36	--	13.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/15/2007	1574	9.3	--	5.4	--	13.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/16/2007	1.965	6.2	50	5.64	--	22.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/17/2007	1.971	6.09	66	6.14	--	16.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/18/2007	1.953	5.2	57	5.78	--	19.52	220	0.75	0.059	250	0.00055	--	0.2	0.0035	0.0038	18	70	13	0.38	0.0005	0.0015	890	--	0.062	0.59	0.058	250	0.00055	0.2	0.0035	0.0038	18	910	72	12	0.38	0.0005	0.0015	--	1500	0.061
DS	7/19/2007	2.184	6.1	21	6.48	--	13.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/20/2007	3.068	5.57	-18	6.65	--	13.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/23/2007	3.283	5.5	72	4.91	--	11.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/24/2007	1.961	6.14	79	5.74	--	12.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/25/2007	2.061	5.69	65	5.5	--	16.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/26/2007	2.256	5.11	66	5.71	--	19.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/27/2007	2.255	5.7	35	5.62	--	19.65	420	0.74	0.054	260	0.00055	--	--	0.0035	0.0038	16	73	--	0.4	0.0005	0.0015	880	--	0.051	0.52	0.047	260	0.00055	--	0.0035	0.0038	14	930	71	--	0.4	0.0005	0.0015	--	--	0.052
DS	7/30/2007	3.029	5.57	135	4.68	--	16.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	7/31/2007	1.954	5.3	78	5.51	--	17.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 34
RECENT SURFACE WATER QUALITY LABORATORY RESULTS DELTA SEEP (DS)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters Conductivity µS/cm	DO mg/L	ORP mV	pH su	SC µS/cm	Temp C	Total Acidity mg/L	Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Cl mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TSS mg/L	Zn mg/L	Dissolved Al mg/L	As mg/L	Ca mg/L	Cd mg/L	Co mg/L	Cr mg/L	Cu mg/L	Fe mg/L	Hardness mg/L	Mg mg/L	Mn mg/L	Ni mg/L	Pb mg/L	Se mg/L	SO4 mg/L	TDS mg/L	Zn mg/L
DS	8/1/2007	2232	5.8	-136	5.28	--	17.67	950	4.9	0.056	265	0.00055	--	--	0.0035	0.0038	61	71.5	--	0.54	0.0005	0.0015	1050	--	0.175	1.645	0.0785	280	0.00055	--	0.0035	0.0038	54.5	970	72	--	0.525	0.0005	0.0015	--	--	0.079
DS	8/2/2007	1944	5.47	10.3	5.82	--	17.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/7/2007	1951	6.75	-41	5.57	--	13.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/8/2007	1956	6	25.5	5.68	--	18.53	--	0.66	0.011	240	0.00011	1.9	--	0.0007	0.04	15	68	--	0.074	0.0001	0.0003	980	10	0.0097	0.52	0.048	250	0.00055	--	0.0035	0.0038	16	910	71	--	0.37	0.0005	0.0015	--	1500	0.05
DS	8/9/2007	1953	6.36	-256	5.6	--	13.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/10/2007	1961	5.76	-88	5.65	--	15.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/10/2007	--	5.76	-88	5.65	1961	15.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/13/2007	1.956	6.26	23.5	5.71	--	15.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/13/2007	--	5.725	86.25	5.71	1.961	14.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/14/2007	1.957	5.59	17	5.55	--	14.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/14/2007	--	5.615	10.6	5.585	975.99	15.485	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/15/2007	1958	6	-169	5.71	--	15.01	10	0.72	0.056	250	0.00011	2	--	0.0007	0.0011	17	73	--	0.34	0.0001	0.00049	880	10	0.04	0.63	0.052	250	0.00055	--	0.0035	0.014	18	920	72	--	0.39	0.0005	0.0015	--	1500	0.057
DS	8/15/2007	--	5.5	-4.5	5.815	979.98	15.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/16/2007	1.958	6	82	5.74	--	12.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/16/2007	--	6	82	5.74	1.958	12.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/17/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/20/2007	1.966	5.19	149	5.71	--	13.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/21/2007	1950	5.64	4.2	5.62	--	16.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/22/2007	1.953	5	8	5.63	--	16.88	10	0.78	0.071	240	0.00055	2.4	--	0.0064	0.0038	19	66	--	0.38	0.0005	0.0015	900	10	0.1	0.81	0.065	260	0.00055	--	0.0035	0.0038	20	940	72	--	0.39	0.0005	0.0015	--	1500	0.06
DS	8/27/2007	1971	6.01	11.7	5.64	--	13.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/27/2007	--	6.01	11.7	5.64	1971	13.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/28/2007	1536	6.05	54.5	5.79	--	19.88	10	0.58	0.049	240	0.00011	2.7	--	0.0007	0.0015	12	66	--	0.33	0.0001	0.00064	920	10	0.041	0.58	0.047	240	0.00011	--	0.0007	0.0017	12	860	66	--	0.34	0.0001	0.0006	--	1500	0.044
DS	8/28/2007	--	7.15	19.5	5.72	1.965	13.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/29/2007	1.969	5.52	1.22	5.65	--	13.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/29/2007	--	5.52	1.22	5.65	1.969	13.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/30/2007	1.97	5.39	-24.4	5.67	--	18.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/30/2007	--	5.39	-24.4	5.67	1.97	18.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/31/2007	1.969	6.16	101.3	5.57	--	13.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	8/31/2007	--	6.16	101.3	5.57	1.969	13.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/4/2007	1573	7.62	70.3	5.73	--	12.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/5/2007	1.973	6.6	31.1	5.64	--	10.55	92	0.86	0.069	240	0.00055	2.3	--	0.0035	0.0038	18	69	--	0.38	0.0005	0.0015	890	10	0.054	0.63	0.061	230	0.00055	--	0.024	0.0038	18	850	66	--	0.4	0.0005	0.0015	--	1500	0.054
DS	9/6/2007	1.657	7.86	80	5.67	--	9.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/7/2007	1.962	7	93	5.66	--	12.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/10/2007	1955	5.95	23	5.69	--	13.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/10/2007	--	5.95	23	5.69	1955	13.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/11/2007	1921	5.27	-16.9	5.74	--	16.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/11/2007	--	5.27	-16.9	5.74	1921	16.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/12/2007	1957	5.35	7.9	5.63	--	13.78	20	0.72	0.057	250	0.00011	2.4	--	0.0007	0.0018	16	72	--	0.33	0.0001	0.00058	870	10	0.041	0.65	0.053	230	0.00011	--	0.0007	0.0022	15	860	70	--	0.32	0.0002	0.00062	--	1500	0.04
DS	9/12/2007	--	5.35	7.9	5.63	1957	13.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/13/2007	1968	5.34	5.2	5.65	--	15.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/13/2007	--	5.34	5.2	5.65	1968	15.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/19/2007	--	--	--	--	--	--	2	0.82	0.013	510	0.00011	2.2	--	0.0011	0.0056	4.6	29	--	0.078	0.0001	0.0013	1300	14	0.015	0.35	0.011	480	0.00011	--	0.0007	0.0037	3.4	1300	25	--	0.075	0.0001	0.00066	--	2200	0.013
DS	9/26/2007	2030	6.62	-157	5.57	--	7.26	68	2.2	0.053	260	0.0004	1.7	--	0.0007	0.002	21	69	--	0.34	0.0001	0.00078	520	29	0.068	1.1	0.055	250	0.0003	--	0.0007	0.0021	19	900	67	--	0.35	0.0001	0.0008	--	1600	0.064
DS	9/27/2007	1765	5.71	104.2	5.65	--	11.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	9/28/2007	2187	5.86	-77	5.37	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/1/2007	2048	6.41	-78	5.53	--	9.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/1/2007	2.048	6.41	-78	9.7	--	9.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/2/2007	2.046	9.5	-46	5.68	--	10.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/2/2007	2.046	9.5	-46	5.68	--	10.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/3/2007	3.349	4.11	39	4.3	--	9.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/8/2007	2039	5.65	-43	5.4	--	8.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/8/2007	3.338	4.74	32	4.48	--	9.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/9/2007	2.046	5.92	-25	5.47	--	8.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/9/2007	2.046	4.29	-25	5.47	--	8.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/10/2007	--	--	--	--	--	--	57	2.4	0.051	250	0.00045	3.4	--	0.0039	0.013	18	78	--	0.35	0.0001	0.00063	950	--	0.06	1.7	0.047	260	0.00043	--	0.0007	0.0071	17	940	71	--	0.34	0.0001	0.00082	--	850	0.066
DS	10/10/2007	2024	5.77	-38	5.26	--	8.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	10/10/2007	2.024	5.77	-38	5.26	--	8.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS	6/4/2008	--	--	--	--	--	--	120	15	0.024	270	0.0025	2.2	--	0.0053	0.14	14	79	--	0.47	0.0003	0.0021	1200	24	0.2	15	0.021	300	0.0027	--	0.002	0.14	10	1100	88	--	0.51	0.00044	0.0022	--	1800	0.21
DS	6/18/2008	--	--	--	--	--	--	66	7.52	0.0144	146	0.001255	3.05	--	0.002815	0.070375	6.0075	42.35	--	0.30545	0.0003	0.0012	614.5	14.5	0.11125	7.02	0.01135	146.5	0.001405	--	0.00145	0.070375	4.1075	534.5	41.9	--	0.31045	0.0003	0.0013	--	825	0.11125
DS	6/24/2008	--	--	--	--	--	--	800	29	0.23	270	--	2.9	--	0.0093	--	210	75	--	0.83	0.0003	0.0015	1900	66	0.15	19	0.098	290	--	--	0.004	--	78	1100	88	--	0.7	0.0003	0.0017	--	3000	0.17
DS	7/1/2008	--	--	--	--	--	--	140	14	0.033	300	0.0026	2.3	--	0.0045	0.14	12	89	--	0.49	0.0003	0.0019	1200	21	0.22	14	0.027	280	0.0027	--	0.0016	0.13	7.9	1000	83	--	0.48	0.0003	0.0018	--	1800	0.21
DS	7/10/2008	--	--	--	--	--	--	56	6.02	0.01535	150.025	0.001255	1.32	--	0.0025	0.065375	6.0075	43.507	--	0.24045	0.0003	0.00115	602.55	15	0.10625	7.02	0.01335	140.175	0.001255	--	0.00125	0.060375	4.4075	550.55	45.0325	--	0.24045	0.0003	0.00115	--	955.5	0.10625
DS	7/16/2008	--	--	--	--	--	--	100	13	0.028	260	0.0021	1.9	--	0.0034	0.11	11	81	--	0.45	0.0003	0.0017	1300	23	0.19	10	0.026	260	0.0022	--	0.0014	0.11	7.6	970	79	--	0.46	0.0003	0.0017	--	1800	0.19
DS	7/22/2008	--	--	--	--	--	--	51	6.02	0.01435	140.14	0.001105	1.175	--	0.0021	0.050375	6.0075	47.0285	--	0.23545	0.0003	0.00105	602.45	13	0.09625	5.52	0.01335	140.215	0.001055	--	0.00125	0.049375	4.7575	500.75	42.555	--	0.23045	0.0003	0.00075	--	905	0.09125
DS	7/29/2008	--	--	--	--	--	--	82	8.5	0.048	270	0.0016	2	--	0.0023	0.077	19	87	--	0.42	0.0003	0.0014	1100	36	0.15	6.1	0.044	260	0.0016	--	0.0007	0.072	15	940	74	--	0.42	0.0003	0.0012	--	1800	0.16

TABLE 34
RECENT SURFACE WATER QUALITY LABORATORY RESULTS DELTA SEEP (DS)
Leviathan Mine Site
Alpine County, California

SW Station	Sample Date	Field Parameters						Total																		Dissolved																
		Conductivity	DO	ORP	pH	SC	Temp	Acidity	Al	As	Ca	Cd	Cl	Co	Cr	Cu	Fe	Mg	Mn	Ni	Pb	Se	SO4	TSS	Zn	Al	As	Ca	Cd	Co	Cr	Cu	Fe	Hardness	Mg	Mn	Ni	Pb	Se	SO4	TDS	Zn
		µS/cm	mg/L	mV	su	µS/cm	C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
DS	8/6/2008	--	--	--	--	--	--	69	8.1	0.054	270	0.0014	2.2	--	0.0022	0.075	19	79	--	0.44	0.0003	0.0012	1200	24	0.14	4.4	0.048	270	0.0015	--	0.0007	0.064	17	980	76	--	0.49	0.0003	0.0014	--	1700	0.14
DS	8/12/2008	--	--	--	--	--	--	35.5	3.87	0.02635	135.065	0.000805	1.175	--	0.00145	0.037875	9.0075	39.0135	--	0.22545	0.0003	0.00075	603.1	19	0.07125	2.32	0.02385	130.55	0.000805	--	0.0007	0.034375	8.5075	481.7	38.585	--	0.25545	0.0003	0.00085	--	856	0.07125
DS	8/19/2008	--	--	--	--	--	--	72	9	0.058	290	0.0014	1.9	--	0.0021	0.064	23	85	--	0.48	0.0003	0.0013	1100	38	0.13	4	0.053	280	0.0014	--	0.0007	0.053	20	1100	84	--	0.46	0.0003	0.0012	--	1700	0.13
DS	8/26/2008	--	--	--	--	--	--	77	7.4	0.053	240	0.0012	2.1	--	0.0013	0.06	19	73	--	0.38	0.0003	0.001	1200	34	0.12	3.7	0.053	250	0.0012	--	0.0007	0.05	19	950	78	--	0.38	0.0003	0.001	--	1800	0.13
DS	9/2/2008	--	--	--	--	--	--	71	7.1	0.057	260	0.0013	2.2	--	0.0018	0.057	21	77	--	0.39	0.0003	0.001	1100	33	0.12	3.4	0.053	270	0.0012	--	0.0007	0.048	20	1000	80	--	0.38	0.0003	0.00097	--	1700	0.12
DS	9/9/2008	--	--	--	--	--	--	44	4.1445	0.03185	145.095	0.000705	1.225	--	0.0012	0.030375	12.5145	41.0145	--	0.20545	0.0003	0.00051	602.45	20.5	0.06625	2.02	0.02935	150.12	0.000705	--	0.0007	0.025875	12.0075	550.4	43.5235	--	0.21045	0.0003	0.000605	--	909	0.06625
DS	9/16/2008	--	--	--	--	--	--	62	6.4	0.054	270	0.001	2.2	--	0.0011	0.052	21	82	--	0.37	0.0003	0.00095	1200	28	0.12	1.9	0.048	260	0.0011	--	0.0007	0.042	18	970	74	--	0.37	0.0003	0.001	--	1700	0.12
DS	9/23/2008	--	--	--	--	--	--	17	3.17	0.03135	135.08	0.000555	1.175	--	0.00225	0.025875	10.5165	39.517	--	0.20045	0.0003	0.00065	602.65	19.5	0.06125	1.27	0.029855	130.11	0.000555	--	0.0007	0.021375	9.508	475.33	37.0145	--	0.20045	0.0003	0.0007	--	806.5	0.06625
DS	10/2/2008	--	--	--	--	--	--	73	5.5	0.061	280	0.0011	2.3	--	0.0012	0.046	22	80	--	0.38	0.0003	0.00091	1100	24	0.12	1.2	0.048	280	0.0011	--	0.0007	0.033	19	1000	81	--	0.38	0.0003	0.0011	--	1700	0.12
DS	10/7/2008	--	--	--	--	--	--	93	7.3	0.086	260	0.00095	2.8	--	0.0026	0.037	62	72	--	0.46	0.0003	0.00092	1100	35	0.13	7	0.11	150	0.00049	--	0.0035	0.017	84	530	39	--	0.6	0.0003	0.0012	--	1700	0.14

Source: Project Database. Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by RWQCB and "Electronic Data Transfer - ERA Treatment Data" by Atlantic Richfield.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ORP = oxygen reduction potential
SC = specific conductance
su = standard units
SW = surface water
TDS = total dissolved solids
TSS = total suspended solids
µS/cm = microsiemens per centimeter

TABLE 35
RECENT SURFACE WATER QUALITY CHANNEL UNDERDRAIN (CUD)
Leviathan Mine Site
Alpine County, California

SW	Sample	Field Parameters						Total																			Dissolved																			
		Conductivity	DO	ORP	pH	SC	Temp	Acidity	Al	As	Ca	Cd	Cl	Co	Cr	Cu	Fe	Mg	Mn	Ni	Pb	Se	SO4	TSS	Zn	Acidity	Al	As	Ca	Cd	Cl	Co	Cr	Cu	Fe	Hardness	Mg	Mn	Ni	Pb	Se	SO4	TDS	TSS	Zn
Station	Date	µS/cm	mg/L	mV	su	µS/cm	C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CUD	9/26/2005	--	9.1	--	4.47	1.97	8.68	--	45.1	0.631	347	0.0005	--	0.88	0.0243	0.009	417	82.1	19.4	1.72	--	--	--	--	0.37	43.6	--	0.88	0.0245	0.003	383	--	78.2	19.2	1.84	--	--	2330	--	0.39	--	--	4.4233333	2026	8.866666667
CUD	9/27/2005	--	20.2	--	4.42333	2026	8.867	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/28/2005	--	12.4	--	4.4	1.95	8.31	965	42.1	0.598	321	0.00037	--	0.811	0.0204	0.0038	382	78.6	18.3	1.79	0.00026	0.0042	1900	--	0.389	42.1	--	0.833	0.024	0.0092	399	--	80.5	19.3	1.85	0.00026	0.0041	--	--	0.412	--	--	4.4	1.95	8.31
CUD	9/29/2005	--	10.8	--	4.46	1.91	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/30/2005	--	11.8	--	4.42	1.95	8.62	--	37.4	0.73	332	0.001	--	0.78	0.0258	0.01	365	78.7	18.1	1.43	--	--	--	--	0.426	38.6	--	0.83	0.0184	0.006	384	--	82.2	18.8	1.72	--	--	2480	--	0.305	--	--	4.46	1.91	8.1
CUD	10/25/2005	--	--	--	4.5	2501.5	9	--	39.2	0.527	353	0.0001	--	0.83	0.0197	0.0007	390	82.8	18.7	1.7	--	--	--	--	0.286	40.3	--	0.75	0.0215	0.003	395	--	86.7	19.1	1.62	--	--	2990	--	0.33	--	--	4.42	1.95	8.62
CUD	11/30/2005	--	--	--	4.8	2565	8.7	--	42.2	0.588	353	0.0005	--	0.85	0.022	0.005	385	84.7	19.6	1.77	--	--	--	--	0.4	41.4	--	0.82	0.0213	0.003	383	--	83.3	19.3	1.47	--	--	2690	3430	0.36	--	--	4.5	2501.5	9
CUD	12/27/2005	--	--	--	4.7	2523.5	8.5	--	55	0.6	300	0.00038	--	0.84	0.026	0.011	410	76	18	1.7	--	--	--	--	0.34	52	--	0.87	0.026	0.00026	380	--	72	17	1.7	--	--	2070	3220	0.34	--	--	4.8	2565	8.7
CUD	1/24/2006	--	--	--	4.6	2397.5	8.7	--	57	0.66	290	0.00044	--	0.78	0.03	0.0092	400	75	17	2	--	--	--	--	0.35	55	--	0.78	0.03	0.00016	400	--	73	17	2	--	--	--	--	0.38	--	--	4.7	2523.5	8.5
CUD	2/22/2006	--	--	--	4.3	2478.5	8.6	--	56	0.62	290	0.00085	--	0.83	0.032	0.015	400	75	19	1.6	--	--	--	--	0.31	55	--	0.81	0.029	0.0005	400	--	74	18	1.6	--	--	2500	3200	0.3	--	--	4.6	2397.5	8.7
CUD	3/22/2006	--	--	--	4.5	2544	8.5	--	85	1.2	310	0.0034	--	1.3	0.051	0.082	500	85	19	2.4	--	--	--	--	0.51	81	--	1.3	0.049	0.054	500	--	83	19	2.3	--	--	2500	1400	0.51	--	--	4.3	2478.5	8.6
CUD	4/25/2006	--	--	--	4.1	2811.5	8.4	--	120	1.5	360	0.0065	--	1.5	0.085	0.051	640	95	22	3	--	--	--	--	0.57	100	--	1.4	0.083	0.047	580	--	86	20	3	--	--	3200	2400	0.61	--	--	4.5	2544	8.5
CUD	5/30/2006	--	--	--	3.6	3259.5	8.6	--	66	1.2	340	0.0022	--	1.3	0.047	0.025	550	88	21	2.7	--	--	--	--	0.58	60	--	1.3	0.049	0.015	570	--	89	22	2.7	--	--	2800	4400	0.51	--	--	4.1	2811.5	8.4
CUD	6/26/2006	--	--	--	3.6	2973.5	8.9	--	70	0.96	330	0.0013	--	1.1	0.041	0.021	520	85	20	2.7	--	--	--	--	0.55	66	--	1.1	0.035	0.00052	530	--	86	21	2.6	--	--	2500	3900	0.5	--	--	3.6	3259.5	8.6
CUD	7/25/2006	--	--	--	4	2789.5	8.7	--	75	0.66	300	0.00047	--	0.98	0.029	0.0045	450	79	7	2.2	--	--	--	--	0.46	44	--	0.94	0.028	0.00073	480	--	84	19	2.2	--	--	2500	3700	0.45	--	--	3.6	2973.5	8.9
CUD	8/29/2006	--	--	--	4.3	2648	8.6	--	86	0.61	320	0.00032	--	0.8	0.024	0.0022	440	81	36	2.2	--	--	--	--	0.37	46	--	0.75	0.026	0.00021	450	--	83	18	2.1	--	--	2500	3400	0.39	--	--	4	2789.5	8.7
CUD	9/27/2006	--	--	--	4.3	2613	8.4	--	42	0.42	340	0.00025	--	0.77	0.023	0.0062	410	81	30	1.7	--	--	--	--	0.33	45	--	0.74	0.021	0.00054	430	--	84	30	1.6	--	--	2600	3400	0.29	--	--	4.3	2648	8.6
CUD	11/29/2006	--	--	--	--	--	--	--	43	0.4	340	0.000047	--	0.94	0.021	0.0038	420	82	21	2.1	--	--	750	--	0.34	39	--	0.78	0.02	0.00017	390	--	80	20	1.9	--	--	--	--	0.37	--	--	4.3	2613	8.4
CUD	12/19/2006	--	--	--	--	--	--	--	43	0.44	350	0.00012	--	0.94	0.023	0.00017	410	85	19	2	--	--	--	--	0.3	43	--	0.91	0.022	0.00017	400	--	83	19	1.9	--	--	2300	3400	0.29	--	--	4.8	2920	8.75
CUD	1/24/2007	--	--	--	--	--	--	--	39	1	320	0.00023	--	1.8	0.043	0.0022	400	79	18	3.7	--	--	--	--	0.69	41	--	1.6	0.04	0.00085	410	--	85	19	3.5	--	--	2400	3200	0.64	--	--	4.63	--	13.29
CUD	3/6/2007	--	--	--	--	--	--	--	40.9	0.445	336	0.0095	--	0.725	0.027	0.012	376	77	17	1.64	--	--	--	--	0.408	42	--	0.719	0.026	0.004	377	--	79	16.7	1.65	--	--	2200	3200	0.401	--	--	4.74	--	10.3
CUD	3/28/2007	--	--	--	--	--	--	--	38.9	0.529	326	0.0121	--	0.774	0.023	0.005	366	74	18.2	1.69	--	--	--	--	0.419	40.8	--	0.786	0.031	0.005	383	--	78	18.1	1.78	--	--	2200	3100	0.43	--	--	4.85	--	11.82
CUD	4/25/2007	--	--	--	--	--	--	--	40	0.55	345	0.0128	--	0.822	0.022	0.005	394	79	19.7	1.79	--	--	--	--	0.439	40.2	--	0.784	0.027	0.005	391	--	82	18.6	1.78	--	--	2200	3200	0.432	--	--	4.94	--	9.73
CUD	5/29/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	6/20/2007	2.778	4.33	17	4.63	--	13.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	6/22/2007	2.786	5.4	3	4.74	--	10.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	6/25/2007	2.77	5.15	-2	4.85	--	11.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	6/26/2007	2.719	7.05	-15.6	4.94	--	9.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	6/27/2007	3.242	5.77	13	4.73	--	11.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	6/28/2007	3.26	7.55	24	4.71	--	10.21	180	36	--	320	--	--	--	--	--	360	76	--	--	--	--	2500	--	--	40	2.4	0.63	0.0092	0.0042	350	1200	85	--	1.3	0.0005	0.0025	--	--	0.26	--	--	4.73	--	11.16
CUD	6/29/2007	3.292	6.68	11	4.78	--	10.55	--	40.1	0.53	365	0.0143	--	0.824	0.042	0.005	388	82	19	1.73	--	--	--	--	0.425	40.6	--	0.796	0.028	0.005	392	--	82	18.4	1.79	--	--	2300	3300	0.42	--	--	4.88	2920	--
CUD	7/2/2007	3.302	6.67	16	4.75	--	11.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/3/2007	3.311	6.91	43	4.64	--	11.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/5/2007	3.325	6.2	26	4.7	--	12.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/6/2007	3.355	5.95	43	4.6	--	12.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/9/2007	3.294	6.02	37	4.86	--	12.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/10/2007	3.345	5.85	91	4.39	--	10.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/11/2007	5.306	5.3	81.1	4.74	--	10.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/12/2007	3.333	4.8	92	4.65	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/13/2007	3.336	--	82	4.65	--	10.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/14/2007	2546	8.63	--	3.88	--	11.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/15/2007	2692	7.38	--	4.19	--	11.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/16/2007	3.344	--	67	4.38	--	13.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/17/2007	3.34	5.42	51	4.8	--	10.49	2300	37	0.47	350	0.0055	--	0.83	0.035	0.038	370	82	19	1.7	0.005	0.015	2000	--	0.34	37	2.4	0.8	0.035	0.038	350	1200	81	18	1.7	0.005	0.015	--	2900	0.33	--	--	4.71	--	10.21
CUD	7/18/2007	3.334	5.01	79	5.54	--	10.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/19/2007	3.398	5	107	5.54	--	10.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/20/2007	3.333	4.8	50	5.76	--	12.77	--	41.1	0.507	361	0.0092	--	0.826	0.027	0.005	423	80	20.3	1.87	--	--	--	--	0.447	40.2	--	0.789	0.025	0.005	404	--	85	19	1.82	--	--	2400	3400	0.435	--	--	4.78	--	10.55
CUD	7/23/2007	3.329	5.39	106	4.51	--	10.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/24/2007	3.337	6.1	141.7	4.54	--	9.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/25/2007	3.329	5.23	159	4.46	--	11.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/26/2007	3.671	4.99	137	4.94	--	--	1900	37	0.36	340	0.00055	--	--	0.011	0.0038	360	81	--	1.3	0.0005	0.0021	1900	--	0.24	36	2.4	--	0.0082	0.0038	360	1200	79	--	1.5	0.0005	0.0019	--	--	0.23	--	--	--	--	8.67
CUD	7/27/2007	3.688	5.45	87	4.54	--	10.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/30/2007	3.324	5.61	107	4.53	--	11.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	7/31/2007	3.325	5.24	144	4.51	--	10.6	2600	37	0.34	340	0.00055	--	--	0.01	0.0038	360	81	--	1.2	0.0005	0.0018	1900	--	0.23	34	2.4	--	0.0068	0.0038	350	1100	76	--	1.4	0.0005	0.0018	--	--	0.23	--	--	4.75	--	11.06
CUD	8/1/2007	2974	5.38	-34	4.61	--	14.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/2/2007	3337	5.35	4.6	4.97	--	10.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/7/2007	3322	5.55	-70	4.56	--	10.02	1000	35	0.075	330	0.00011	2.6	--	0.0019	0.0012	330	80	--	0.25	0.0001	0.00035	2100	98	0.053	32	2.4	--	0.0074	0.0039	360	1200	80	--	1.4	0.0005	0.0017	--	2900	0.26	--	--	4.64	--	11.88
CUD	8/8/2007	3235	5.85	60	4.43	--	9.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/9/2007	3234	6	-235	4.51	--	10.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/10/2007	3233	4.85	-101.9	4.65	3233	9.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/13/2007	3.452	5.35	76.27	4.55333	3.402	9.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/14/2007	3.351	5.0667	-143.2	4.49333	1683.68	10.36	1400	34	0.2	340	0.00011	10	--	0.0064	0.0012	360	80	--	0.63	0.0001	0.00099	2000	23	0.11	34	2.4	--	0.012	0.0038	380	1200	81	--	1.3	0.0005	0.0024	--	2800	0.25	--	--	4.7	--	12.75
CUD	8/15/2007	--	5.22	124.5	4.47	3.364	10.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/16/2007	3.374	5.51	159	4.64	3.374	10.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/17/2007	3.375	5.63	150	4.56	3.375	9.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 35
RECENT SURFACE WATER QUALITY CHANNEL UNDERDRAIN (CUD)
Leviathan Mine Site
Alpine County, California

SW	Sample	Field Parameters						Total																			Dissolved																			
		Conductivity	DO	ORP	pH	SC	Temp	Acidity	Al	As	Ca	Cd	Cl	Co	Cr	Cu	Fe	Mg	Mn	Ni	Pb	Se	SO4	TSS	Zn	Acidity	Al	As	Ca	Cd	Cl	Co	Cr	Cu	Fe	Hardness	Mg	Mn	Ni	Pb	Se	SO4	TDS	TSS	Zn
Station	Date	µS/cm	mg/L	mV	su	µS/cm	C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CUD	8/20/2007	3.352	5.19	-11.6	4.46	--	9.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/21/2007	3364	4.7	-126.7	4.58	--	9.91	1200	38	0.33	350	0.00055	3.6	--	0.012	0.0038	370	84	--	1.3	0.0005	0.0024	2000	54	0.25	36	2.4	--	0.01	0.0038	360	1200	80	--	1.3	0.0005	0.0021	--	2800	0.25	--	--	4.6	--	12.62
CUD	8/22/2007	3.364	5.22	124.5	4.47	--	10.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/27/2007	3314	6.71	125.7	3.48	3314	11.23	1300	38	0.32	340	0.00055	13	--	0.01	0.0038	380	87	--	1.2	0.0005	0.003	2000	26	0.24	32	2.4	--	0.0085	0.0038	340	1100	73	--	1.2	0.0005	0.0022	--	2700	0.24	--	--	4.86	--	12.84
CUD	8/28/2007	2613	7.215	147.8	4.455	3.375	11.44	--	38.9	0.472	357	0.0109	--	0.798	0.05	0.005	409	81	19.8	1.83	--	--	--	--	0.415	38.8	--	0.784	0.028	0.005	413	--	80	19.1	1.8	--	--	2550	3510	0.399	--	--	4.39	--	10.22
CUD	8/29/2007	3.359	4.75	120	4.44	3.359	10.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/30/2007	3.359	5.52	48	4.54	3.359	11.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	8/31/2007	3.354	8.83	139.3	4.45	3.354	11.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/4/2007	2680	8.37	85.8	4.61	--	9.93	1000	33	0.39	320	0.00055	3.2	--	0.012	0.0038	370	77	--	1.2	0.0005	0.0023	2000	52	0.22	34	2.4	--	0.013	0.0038	360	1200	77	--	1.2	0.0005	0.0015	--	3400	0.22	--	--	4.74	--	10.52
CUD	9/5/2007	3.368	5.65	82.5	4.51	--	10.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/6/2007	2759	6.8	93	4.56	--	9.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/7/2007	3.326	5.78	136	4.61	--	10.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/10/2007	3349	5.31	88.2	4.6	3349	9.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/11/2007	3373	5.315	86.7	4.55	3373	10.37	1100	35	0.19	350	0.00011	3	--	0.0079	0.0017	370	83	--	0.76	0.0001	0.00098	1900	86	0.13	31	2.4	--	0.018	0.019	350	1100	78	--	1.6	0.0025	0.0075	--	2900	0.33	--	--	4.79	2870	9.12
CUD	9/12/2007	3357	5.18	67.5	4.51	3357	9.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/13/2007	3.368	5.15	109.2	4.33	3368	10.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/14/2007	3362	5.26	-136	4.5	3362	10.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/15/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/16/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/17/2007	3.366	5	12.6	4.41	3.366	9.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/18/2007	3.365	5.13	105	4.43	3.365	10.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/19/2007	2.18	5.76	34	4.57	2.18	9.12	1000	36	0.37	370	0.0011	5.7	--	0.0079	0.0075	400	88	--	1.3	0.0001	0.003	1900	78	0.25	32	2.4	--	0.0058	0.0017	340	1100	74	--	0.66	0.0001	0.00098	--	2800	0.11	--	--	4.65	--	10
CUD	9/20/2007	3.352	4.74	110.6	4.36	3.352	9.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/21/2007	3.351	5.16	43.18	4.36	3.51	9.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/24/2007	3.331	5.02	-47	4.46	--	9.16	--	37.1	0.42	387	0.0134	--	0.794	0.025	0.005	415	86	20.2	1.75	--	--	--	--	0.415	35.9	--	0.73	0.025	0.005	386	--	79	18.5	1.68	--	--	2370	3080	0.388	--	--	4.65	--	10.27
CUD	9/25/2007	2734	5.67	188	4.46	--	10.8	950	33	0.17	320	0.00011	4.5	--	0.008	0.0014	340	74	--	0.83	0.0001	0.0011	2000	86	0.11	32	2.4	--	0.01	0.0038	340	1100	74	--	1.3	0.0005	0.0028	--	2900	0.23	--	--	3.88	--	11.4
CUD	9/26/2007	3236	4.6	-86	4.5	--	4.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	9/28/2007	3339	4.57	-41	4.45	--	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/1/2007	1673.672	4.81	-14	4.36	--	8.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/2/2007	3.344	4.6	42	4.52	--	9.23	950	33	0.26	330	0.00055	3	--	0.0078	0.0038	350	78	--	1.2	0.0005	0.0017	1900	49	0.24	33	2.4	--	0.0038	0.0038	360	1200	80	--	1.2	0.0005	0.002	--	3200	0.24	--	--	4.19	--	11.2
CUD	10/3/2007	3.183	3.89	-57.75	7.2	--	9.975	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/4/2007	3.348	4.52	44	4.4	--	9.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/5/2007	3.363	4.4	-112	4.35	--	8.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/8/2007	1670.0195	5.195	-5.5	4.94	--	9.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/9/2007	3.353	5.13	60	4.41	--	9.61	980	36	0.16	320	0.00011	5.1	--	0.0055	0.0026	390	89	--	0.64	0.0001	0.0013	2000	120	0.099	31	2.4	--	0.0079	0.0038	340	1100	77	--	1.3	0.0005	0.0049	--	3300	0.24	--	--	4.38	--	13.04
CUD	10/10/2007	1675.674	4.06	-2	4.33	--	8.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CUD	10/16/2007	--	--	--	--	--	--	890	--	--	--	--	2.8	--	--	--	--	--	--	--	--	--	2000	19	--	43	2.4	--	0.015	0.005	360	1000	74	--	1.3	0.0015	0.0018	--	3000	0.29	--	--	4.8	--	10.49
CUD	6/4/2008	--	--	--	--	--	--	870	43	0.49	290	0.00055	3	--	0.014	0.0054	360	76	--	1.3	0.0015	0.0028	2000	54	0.29	42	2.4	--	0.012	0.004	360	1000	76	--	1.3	0.0006	0.0022	--	3000	0.23	--	--	5.54	--	10.66
CUD	6/18/2008	--	--	--	--	--	--	790	--	--	580	0.00011	3.2	--	0.0028	0.01	--	41	--	--	0.0003	0.0017	1900	66	--	--	2.4	--	0.0049	0.0041	--	1300	57	--	--	0.0003	0.0014	--	3000	--	--	--	5.54	--	10.07
CUD	6/24/2008	--	--	--	--	--	--	880	42	0.47	300	0.00055	2.7	--	0.013	0.0051	360	81	--	1.3	0.0015	0.0022	2000	49	0.27	40	2.4	--	0.011	0.0039	330	990	70	--	1.3	0.0015	0.0021	--	3100	0.27	--	--	5.76	--	12.77
CUD	7/1/2008	--	--	--	--	--	--	850	37	0.43	310	0.00055	12	--	0.014	0.006	340	77	--	1.2	0.0015	0.002	2000	85	0.27	44	2.4	--	0.011	0.0057	340	1100	81	--	1.2	0.0015	0.0019	--	2900	0.27	--	--	4.51	--	10.39
CUD	7/10/2008	--	--	--	--	--	--	850	41	0.35	290	0.00022	3	--	0.012	0.0055	340	76	--	1.1	0.0006	0.0015	2100	77	0.21	37	2.4	--	0.0096	0.0031	320	980	72	--	0.9	0.0006	0.0014	--	3000	0.19	--	--	4.54	--	9.42
CUD	7/16/2008	--	--	--	--	--	--	840	41	0.36	310	0.00022	2.4	--	0.013	0.0072	350	82	--	0.94	0.0006	0.0019	2000	48	0.21	38	2.4	--	0.0098	0.0039	320	1000	74	--	0.9	0.0006	0.001	--	3100	0.19	--	--	4.46	--	11.9
CUD	7/22/2008	--	--	--	--	--	--	810	35	0.33	290	0.00022	2.5	--	0.0092	0.003	330	80	--	0.93	0.0006	0.0014	2000	110	0.18	33	2.4	--	0.0077	0.0024	300	990	69	--	0.95	0.0006	0.0012	--	3000	0.19	--	--	4.94	--	--
CUD	7/29/2008	--	--	--	--	--	--	780	33	0.45	300	0.0011	3.4	--	0.01	0.0075	310	73	--	1.4	0.003	0.003	2100	18	0.27	32	2.4	--	0.007	0.0075	300	1000	71	--	1.3	0.003	0.0032	--	2900	0.27	--	--	4.54	--	10.09
CUD	8/6/2008	--	--	--	--	--	--	790	32	0.47	290	0.00055	3	--	0.011	0.0056	300	71	--	1.3	0.0015	0.0018	2000	85	0.25	31	2.4	--	0.0057	0.004	300	1000	72	--	1.1	0.0015	0.0023	--	2900	0.24	--	--	4.53	--	11.61
CUD	8/12/2008	--	--	--	--	--	--	780	38	0.4	320	0.00055	2.1	--	0.01	0.0038	330	79	--	1.1	0.0015	0.0015	1900	79	0.24	37	2.4	--	0.0086	0.0038	320	1100	77	--	1.1	0.0015	0.0015	--	2900	0.23	--	--	4.51	--	10.6
CUD	8/19/2008	--	--	--	--	--	--	800	33	0.4	290	0.0011	2.9	--	0.007	0.0075	290	74	--	1.2	0.003	0.003	2000	41	0.26	32	2.4	--	0.007	0.0075	310	1100	80	--	1.2	0.003	0.003	--	3200	0.27	--	--	4.61	--	14.37
CUD	8/26/2008	--	--	--	--	--	--	800	32	0.27	300	0.00055	2.9	--	0.011	0.0051	310	74	--	1.1	0.0015	0.0015	2000	45	0.23	31	2.4	--	0.0088	0.0041	310	1100	76	--	1.1	0.0015	0.0015	--	3000	0.24	--	--	4.56	1775	8.8
CUD	9/2/2008	--	--	--	--	--	--	790	32	0.37	310	0.00055	3.8	--	0.01	0.0045	320	77	--	1.2	0.0015	0.0015	2000	110	0.23	33	2.4	--	0.008	0.0038	340	1200	82	--	1.2	0.0015	0.002	--	3100	0.22	--	--	4.97	--	10.54
CUD	9/9/2008	--	--	--	--	--	--	760	31	0.22	310	0.00022	3.2	--	0.0085	0.0052	320	79	--	0.84	0.0006	0.0011	2000	100	0.19	28	2.4	--	0.0061	0.0039	320	1100	74	--	0.87	0.0006	0.0016	--	3000	0.2	--	--	4.56	--	10.02
CUD	9/16/2008	--	--	--	--	--	--	780	32	0.34	310	0.00055	3	--	0.012	0.0038	320	76	--	1.2	0.0015	0.0018	2000	36	0.25	28	2.4	--	0.0088	0.0041	320	1100	73	--	1.2	0.0015	0.0022	--	2700	0.25	--	--	4.43	--	9.57
CUD	9/23/2008	--	--	--	--	--	--	770	29	0.35	320	0.00055	2.7	--	0.01	0.0038	340	77	--	1.1	0.0015	0.0017	2000	33	0.21	29	2.4	--	0.0083	0.0038	350	1200	82	--	1.2	0.0015	0.0025	--	2000	0.26	--	--	4.85	1604	8.8
CUD	10/2/2008	--	--	--	--	--	--	780	27	0.23	340	0.0022	3.8	--	0.014	0.015	330	79	--	1.3	0.006	0.006	2000	92	0.29	15	2.4	--	0.014	0.015	150	560	38	--	1.4	0.006	0.006	--	2900	0.31	--	--	4.51	--	10.86

Source: Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB. Project Database Source Code RWQ-EDT and "Electronic Data Transfer - ERA Treatment Data" by Atlantic Richfield. Project Database Source Code ARC-EDT.

Notes
All results have an EPA Usability Code of 1.

Abbreviations
C = Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ORP = oxygen reduction potential
SC = specific conductance
su = standard units
SW = surface water
TDS = total dissolved solids
TSS = total suspended solids
µS/cm = microsiemens per centimeter

TABLE 36
RECENT STREAM SEDIMENT QUALITY
Leviathan Mine Site
Alpine County, California

Sediment Station	Sample Date	Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Tl	V	Zn
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sta 15	04-Jun-04	2.9	15000	140	180	0.4	4500	1.4	10	24	47	38000	0.58	1300	5400	240	14	310	20	32	29	6.2	100	63	45
Sta 15	16-Sep-04	3.3	20000	340	290	0.4	5500	1.6	12	32	73	69000	1	1500	4500	340	16	640	24	12	33		110	97	54
Sta 15	29-Sep-05	2.1	9400	4500	260	1.1	5400	1.7	8.3	56	73	130000	0.71	1700	1400	140	10	170	18	120	17	42	17	130	36
Sta 16	04-Jun-04	3.4	22000	69	360	1	8300	1.7	26	27	100	29000	0.75	1900	6400	1700	17	450	39	10	34	3.2	120	74	85
Sta 16	16-Sep-04	3.3	25000	100	440	0.8	8900	1.6	23	29	76	31000	1	2100	6900	1800	16	620	39	23	33		110	85	88
Sta 16	29-Sep-05	2.8	16000	69	270	0.94	6300	1.4	25	20	72	25000	0.38	1500	4600	1700	14	440	45	9.2	28	2.8	14	74	93
Sta 23	24-Sep-03	4.5	29000	160	430	1.5	11000	2.2	77	39	110	51000	4.1	2300	5700	3400	22	360	110	29	45	14	160	83	81
Sta 23	04-Jun-04	2.6	16000	76	140	0.6	5800	1.3	45	20	46	44000	0.061	1300	4700	1200	13	550	46	4.4	26	2	90	68	60
Sta 23	16-Sep-04	3.3	29000	180	360	1.1	9400	1.7	50	41	83	56000	1.3	2100	6100	1600	17	600	63	19	33		120	86	75
Sta 23	29-Sep-05	2.6	14000	150	120	0.68	5400	1.3	21	21	51	48000	0.32	1100	3700	460	13	480	30	7.1	26	4	13	68	56
Sta 24	24-Sep-03	2.6	13000	2.8	74	0.3	6900	1.3	9.3	18	15	23000	0.056	750	3300	220	13	880	12	3.6	26	2.8	92	72	45
Sta 24	04-Jun-04	2.4	10000	4.3	70	0.2	5900	1.2	7.5	13	11	17000	0.013	680	2300	240	12	710	9.2	3.3	24	2.5	83	58	36
Sta 24	16-Sep-04	3.2	15000	2.2	120	0.3	7400	1.6	9.8	18	16	21000	0.02	1200	3000	500	16	1100	9.3	5.4	32		110	71	48
Sta 24	29-Sep-05	2.4	10000	6.1	60	0.31	6800	1.2	7.7	18	17	24000	0.016	680	2400	250	12	890	9	2.7	24	2.4	12	87	45
Sta 25	24-Sep-03	2.7	15000	68	190	0.5	7300	1.4	120	20	35	34000	0.28	960	4600	4400	14	700	170	6.2	27	1.9	95	81	78
Sta 25	04-Jun-04	2.7	13000	94	190	0.4	6200	1.4	74	19	34	31000	0.051	860	4000	2300	14	680	86	3.8	27	2.7	96	71	62
Sta 25	16-Sep-04	3.6	25000	95	320	0.8	8200	1.8	54	34	70	37000	0.79	2200	5900	2100	18	500	80	18	36		120	81	71
Sta 25	29-Sep-05	3.6	16000	120	240	0.85	8100	1.8	82	23	48	41000	0.54	1300	3700	3200	18	680	110	7.8	36	6	11	87	74
Sta 26	04-Jun-04	6.7	28000	130	340	1.8	8700	3.3	120	29	92	49000	1.6	3300	4500	2300	33	290	210	15	67	10	230	71	130
Sta 26	16-Sep-04	4	18000	87	230	0.7	6400	2	80	22	57	27000	1.1	1200	3700	2500	20	340	110	13	40		140	58	65
Sta 26	29-Sep-05	2.4	11000	54	180	0.45	5700	1.2	73	27	27	34000	0.05	860	3300	3500	12	480	79	3.3	24	2.4	12	110	80

Source: Project Database EPA-EDT. Data from "Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data" by the RWQCB.

Notes
All sediment samples analyzed by EPA Method 7010.
EPA Usability Code: 1.

Abbreviations
mg/kg = milligrams per kilogram

TABLE 37
RECENT SOIL QUALITY
Leviathan Mine Site
Alpine County, California

SampleDate	Soil Station	pH su	Soil Station	pH su	Soil Station	pH su	Soil Station	pH su	Soil Station	pH su
01-Aug-98	19001	2.3	19045	4.61	19089	4.1	19133	3.3	19177	4.47
01-Aug-98	19002	3.46	19046	4.82	19090	2.13	19134	4.81	19178	5.36
01-Aug-98	19003	3.21	19047	5.34	19091	3.85	19135	4.56	19180	6.97
01-Aug-98	19004	2.44	19048	4.42	19092	4.63	19136	3.54	19181	3.11
01-Aug-98	19005	2.88	19049	4.63	19093	3.27	19137	4.79	19182	4.45
01-Aug-98	19006	2.7	19050	4.65	19094	8.25	19138	4.83	19183	7.69
01-Aug-98	19007	4.63	19051	4.17	19095	4.02	19139	4.79	19184	5.27
01-Aug-98	19008	2.04	19052	3.88	19096	2.62	19140	4.73	19185	3.31
01-Aug-98	19009	4.15	19053	4.52	19097	2.25	19141	4.19	19186	3.77
01-Aug-98	19010	2.13	19054	4.58	19098	5.68	19142	4.42	19187	3.99
01-Aug-98	19011	5.18	19055	5.2	19099	3.28	19143	4.14	19188	4.19
01-Aug-98	19012	5.37	19056	4.68	19100	4.13	19144	5.7	19189	4.2
01-Aug-98	19013	5.44	19057	6.38	19101	4.26	19145	4.63	19190	4.71
01-Aug-98	19014	4.17	19058	4.37	19102	1.98	19146	4.88	19191	4.62
01-Aug-98	19015	4.16	19059	7.03	19103	4.56	19147	4.48	19192	3.68
01-Aug-98	19016	2.61	19060	4.58	19104	4.12	19148	4.81	19193	5.12
01-Aug-98	19017	5.45	19061	4.64	19105	4.93	19149	4.5	19194	5.31
01-Aug-98	19018	4.6	19062	4.88	19106	4.42	19150	4.64	19195	5.81
01-Aug-98	19019	5.61	19063	4.68	19107	3.81	19151	3.93	19196	3.32
01-Aug-98	19020	3.94	19064	2.38	19108	4.02	19152	7.2	19197	4.73
01-Aug-98	19021	5.09	19065	4.73	19109	4.11	19153	4.03	19198	4.72
01-Aug-98	19022	4.3	19066	3.83	19110	4.18	19154	4.58	19199	4.51
01-Aug-98	19023	3.73	19067	3.63	19111	4.26	19155	4.27	19200	4.53
01-Aug-98	19024	3.8	19068	6.33	19112	4.42	19156	4.62		
01-Aug-98	19025	4.22	19069	8.11	19113	4.39	19157	8.14		
01-Aug-98	19026	4.11	19070	8.06	19114	2.85	19158	4.62		
01-Aug-98	19027	4.39	19071	6.8	19115	3.37	19159	4.89		
01-Aug-98	19028	5.12	19072	5.68	19116	5.07	19160	8.29		
01-Aug-98	19029	4.03	19073	6.84	19117	2.23	19161	2.86		
01-Aug-98	19030	4.14	19074	8.28	19118	2.32	19162	4.05		
01-Aug-98	19031	4.42	19075	4.7	19119	2.77	19163	4.75		
01-Aug-98	19032	4.08	19076	8.85	19120	4.11	19164	4.41		
01-Aug-98	19033	4	19077	6.25	19121	3.91	19165	4.8		
01-Aug-98	19034	5.08	19078	8.77	19122	2.9	19166	6.97		
01-Aug-98	19035	4.66	19079	8.65	19123	4.52	19167	5.5		
01-Aug-98	19036	4.28	19080	4.76	19124	3.82	19168	5.27		
01-Aug-98	19037	4.72	19081	4.85	19125	4.95	19169	4.01		
01-Aug-98	19038	4.45	19082	8.95	19126	4.31	19170	3.69		
01-Aug-98	19039	4.77	19083	8.73	19127	2.84	19171	3.63		
01-Aug-98	19040	4.76	19084	4.55	19128	4.31	19172	5.21		
01-Aug-98	19041	5.18	19085	4.36	19129	3.8	19173	3.46		
01-Aug-98	19042	4.86	19086	1.85	19130	3.51	19174	4.29		
01-Aug-98	19043	4.68	19087	1.9	19131	4.16	19175	4.75		
01-Aug-98	19044	5.07	19088	3.96	19132	7.08	19176	4.84		

Source: Project Database. Data from "1998-1999 Data Summary Report, Administrative Order on Consent, Leviathan Mine, Alpine County, California" by the RWQCB (Source code SRK-003).

Notes

All soil samples were collected from the surface on August 1, 1998. Conductivity measurements were excluded because the measurement units were not provided. Deeper soil samples for laboratory analysis have not been collected at the site since this sampling event.
EPA Usability Code: 3.

Abbreviations
su = standard units

TABLE 38
RECENT GROUNDWATER QUALITY LABORATORY RESULTS
Leviathan Mine Site
Alpine County, California

		Total			Dissolved																																		
		Alkalinity as $CaCO^3$	P	TSS	NO^2 as N	NO^3 as N	Ortho P	SO4	TDS	Ag	Al	As	B	Ba	Be	Br	Ca	Cd	Cl	Co	Cr	Cu	F	Fe	Hg	K	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Tl	V	Zn
ID	Sample Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	13-Oct-98	378	0.15	160	0.2	0.3	0.09	846	1820	1.8	60	2	69.9	29.3	0.7	200	282000	2.2	3500	3.6	3.9	1.1	1000	122	0.1	13100	129000	205	4.4	40500	15.1	1	18.7	7.6	1	5.4	3.9
MW-1	03-Nov-98	373	0.22	183	0.2	0.2	0.08	873	1580	1.8	13.5	1.2	59.1	28.1	0.7	200	272000	2.7	4500	3.6	3.9	1.1	1000	81.9	0.1	13600	115000	147	4.4	41000	15.1	1.3	18.7	10	1	2.5	6.2
MW-10D	14-Oct-98	236	0.1	21	0.5	1.3	0.05	617	1250	1.8	27.9	28.2	71.5	34.2	0.7	500	246000	2.2	4700	3.6	3.9	1.1	1000	7220	0.1	2040	63900	1030	4.4	33600	15.1	1	18.7	9.5	1.1	4.7	11
MW-10D	05-Nov-98	214	0.2	71	0.2	0.3	0.03	771	1700	1.8	17.2	123	113	27.6	0.7	200	302000	2.2	4900	6	3.9	1.1	1000	37000	0.1	4170	84600	3050	4.4	32900	15.1	1.2	18.7	2.1	1	3.5	6.4
MW-10S	16-Oct-98	2	0.07	84	1	1	0.01	2440	3830	1.8	22000	690	547	12.3	5.5	1000	320000	2.2	6500	504	3.9	1.1	5200	463000	0.1	28300	114000	21400	4.4	30400	1650	2	56.2	1	13	22.5	362
MW-10S	05-Nov-98	2	0.1	135	0.5	0.2	0.02	2320	3930	1.8	23400	420	584	12.4	5.6	200	344000	2.2	3700	496	4.9	4.9	5100	573000	0.1	28100	121000	22800	4.4	29900	1660	1.9	43.9	1	12.2	36.3	360
MW-11	14-Oct-98	260	0.03	5	0.2	0.2	0.02	24.8	314	1.8	18.2	1	40	109	0.7	200	73900	2.2	900	3.6	3.9	1.1	200	62.8	0.1	573	15300	7.5	4.4	22300	15.1	3.4	18.7	1	1	5.5	4.9
MW-11	05-Nov-98	261	0.12	56	0.2	0.2	0.03	25	329	1.8	13.5	1.1	33.7	114	0.7	2000	77200	2.2	1100	3.6	3.9	1.1	200	43.6	0.1	1120	15800	9.8	4.4	22900	15.1	1	18.7	2	1	3.6	10.2
MW-12	13-Oct-98	85	19.22	36700	0.5	0.5	4.96	1140	2340	1.8	174	44	189	20.6	0.7	500	281000	2.2	4200	90	3.9	2.9	1000	102000	0.1	12700	85600	20400	4.4	26000	89.9	1	18.7	1.4	1	7.6	38
MW-12	03-Nov-98	192	0.99	1360	0.2	0.2	0.46	1310	1930	1.8	184	60.8	178	23	0.7	400	292000	2.2	3900	68.4	3.9	1.1	1400	108000	0.1	12600	95200	21300	4.4	26200	70.2	2.1	19.3	1	2.2	2.8	38.4
MW-2D	19-Oct-98	2	0.31	283	1	1	0.1	8860	7510	1.8	283000	16.5	481	16.8	85.1	1000	379000	169	2100	6990	7.2	8490	11300	863000	0.1	20100	94100	79200	4.4	65800	9620	1	49.7	5	30.1	84.3	2140
MW-2D	05-Nov-98	2	0.18	166	1.3	1	0.15	9900	7560	1.8	310000	5	477	18.4	94.1	1000	428000	166	2600	7190	4	9300	11800	889000	0.1	21800	92600	73000	4.4	67500	10500	2.5	66.7	1.9	41.6	115	2190
MW-2S	19-Oct-98	2	0.02	67	1	1	0.29	8400	6180	1.8	294000	1	421	12.5	9.8	1000	170000	55.8	1300	2170	55.2	1880	5300	823000	0.1	14600	34800	6780	4.4	21400	5700	1	18.7	5	307	482	910
MW-2S	05-Nov-98	2	0.16	62	1.1	1	0.43	6820	5890	1.8	319000	17	447	13.8	10.7	1000	169000	48.8	2000	2300	64.5	1750	6900	904000	0.1	15600	36900	7320	4.4	22300	6230	1.1	66.7	1	303	558	976
MW-3	19-Oct-98	2	6.67	12	1	1	4.71	9370	6340	1.8	280000	6600	533	15.1	4.9	1000	196000	19.7	1700	497	1270	1.1	3000	788000	0.1	26400	61900	6330	4.4	29700	2500	15.5	37.4	5	106	602	744
MW-3	03-Nov-98	2	6.85	21	0.9	0.2	5.03	6260	6440	1.8	299000	6520	63.3	15.1	5.6	500	209000	11.3	2200	512	1350	13.5	2700	936000	0.1	27500	63000	6400	4.4	29200	2550	13.8	65.8	5	89.6	659	791
MW-4	16-Oct-98	2	0.21	72	1	1.3	0.02	2560	3100	1.8	112000	11.5	113	12.3	10.7	1000	404000	13.4	3700	484	10.2	4620	4600	531	33.5	14900	102000	15200	4.4	9280	792	3.1	18.7	36.4	15.5	2.5	1240
MW-4	03-Nov-98	2	0.1	95	0.2	0.4	0.01	3380	3000	1.8	99800	7.2	113	14	9.4	200	412000	12.2	2600	445	9	3370	6300	643	20.7	16900	94800	13900	4.4	9340	701	4.6	18.7	37.3	14.9	2.5	1140
MW-5D	19-Oct-98	--	0.32	1040	1	1.3	0.01	6670	5770	1.8	128000	8.8	588	23.4	25.7	1000	487000	16.4	6800	1090	80.6	3040	7800	297000	0.1	46500	178000	19200	4.4	414000	1410	2	41.8	178	148	22.2	1240
MW-6	20-Oct-98	2	0.02	25	0.5	0.5	0.03	2390	3470	4.4	18700	305	350	12.6	6	500	441000	2.2	3100	585	3.9	7.5	4500	347000	0.1	24200	80700	22400	4.4	25600	1280	1	57.5	1	33.1	51.8	247
MW-6	06-Nov-98	2	0.09	91	0.5	0.2	0.02	3230	3330	1.8	20600	306	351	12.4	6.1	200	430000	2.2	5000	602	3.9	3.1	5000	340000	0.1	21600	76300	21500	4.4	23700	1350	1	40.6	2.5	31.6	25.7	262
MW-7	20-Oct-98	81	0.18	100	0.2	0.2	0.13	63.7	217	1.8	28.9	61.2	25.2	41.9	0.7	200	34500	2.2	1200	8.2	3.9	1.1	200	4240	--	3250	7010	457	4.4	12800	19.9	1	18.7	2.4	4.4	2.5	16.5
MW-7	06-Nov-98	61	0.31	317	0.2	0.2	0.04	90.1	246	1.8	103	26.4	23.8	28.2	0.7	200	35600	2.2	1300	10.2	3.9	1.1	200	4120	0.1	2670	6660	405	4.4	13000	23.2	1	18.7	3.6	1	2.5	22.2
MW-8	20-Oct-98	2	0.03	58	0.5	0.5	0.11	1120	1820	2.7	29600	375	300	12.6	3.5	500	179000	12.6	3100	108	19.1	13.1	2500	228000	0.1	19000	33900	10300	4.4	17700	313	1.8	20.1	1	199	53.7	310
MW-8	06-Nov-98	2	0.04	16	0.5	0.5	0.09	1550	1860	1.8	29200	336	303	9.7	3.6	500	185000	7.8	2900	108	18.5	17.9	2100	227000	0.1	17500	33700	10200	4.4	17300	313	1	29.8	3.1	176	52.4	298
PZ-25	02-Nov-98	2	0.44	241	0.2	1.9	0.01	22.3	107	1.8	408	4.5	25.2	307	0.7	200	5270	2.2	3000	3.6	3.9	8.9	200	152	0.1	2780	1350	33.5	4.4	6880	15.1	1.5	18.7	5.7	2.5	2.5	19.7
PZ-33	02-Nov-98	17	0.22	6	0.2	0.2	0.21	155	326	1.8	13.5	1.8	52	35.2	0.7	200	31100	2.2	1000	3.6	3.9	3.2	200	25.5	0.1	7680	10700	26.3	4.4	24200	15.1	1	18.7	1	1.2	2.5	20.7

Source: Project Database. Data from "1998-1999 Data Summary Report, Administrative Order on Consent, Leviathan Mine, Alpine County, California" by the RWQCB (Source code SRK-003).

Notes
EPA Usability Code: 1.

Abbreviations
mg/L = milligrams per liter
TDS = total dissolved solids
TSS = total suspended solids
µg/l = micrograms per liter

TABLE 39
RECENT GROUNDWATER QUALITY FIELD PARAMETERS
Leviathan Mine Site
Alpine County, California

Well/Piezo	SampleDate	Conductivity µS/cm	DO mg/L	pH su	Temp C
MW-1	13-Oct-98	2020	--	7.11	9.2
MW-1	03-Nov-98	2170	--	--	8.2
MW-10D	14-Oct-98	1410	--	6.38	10.7
MW-10D	05-Nov-98	2050	--	6.26	9.5
MW-10S	16-Oct-98	2480	--	3.67	9.1
MW-10S	05-Nov-98	3430	--	3.72	9.7
MW-11	14-Oct-98	410	--	6.88	10.1
MW-11	05-Nov-98	490	--	7.07	9.1
MW-12	13-Oct-98	2210	--	5.93	11.8
MW-12	03-Nov-98	2160	--	5.6	11.4
MW-2D	19-Oct-98	5080	--	4.23	12.7
MW-2D	05-Nov-98	5140	--	3.69	11.2
MW-2S	19-Oct-98	4110	--	3.92	12.7
MW-2S	05-Nov-98	4480	--	3.32	--
MW-3	16-Oct-98	--	--	--	--
MW-3	19-Oct-98	--	--	--	--
MW-3	03-Nov-98	8180	--	1.88	10.6
MW-4	16-Oct-98	2170	--	--	10.3
MW-4	03-Nov-98	2220	--	4.03	11.6
MW-5D	19-Oct-98	5270	--	4.25	15.1
MW-6	20-Oct-98	2810	--	4.44	10.3
MW-6	06-Nov-98	3030	--	4.26	8.6
MW-7	20-Oct-98	330	--	5.48	6
MW-7	06-Nov-98	320	--	5.5	7
MW-8	20-Oct-98	1800	--	3.31	10
MW-8	06-Nov-98	2010	--	3.56	8.4
PZ-10A	12-Nov-82	2200	--	6	--
PZ-10A	16-Nov-82	2000	--	5.7	9.5
PZ-10A	29-Nov-82	1400	--	6.2	8.5
PZ-10B	12-Nov-82	2400	--	5.1	--
PZ-10B	16-Nov-82	2300	--	4.9	9.5
PZ-10C	12-Nov-82	2800	--	5.5	--
PZ-10C	16-Nov-82	3000	--	5.4	9.5
PZ-11A	12-Nov-82	2100	--	5.9	--
PZ-11A	16-Nov-82	2100	--	5.6	8
PZ-11B	12-Nov-82	5500	--	4.9	
PZ-11B	16-Nov-82	6100	--	4.7	7
PZ-11C	12-Nov-82	4800	--	4.9	--
PZ-11C	16-Nov-82	1800	--	4.8	8
PZ-14	26-Oct-82	5400	--	2.6	--
PZ-14	06-Apr-83	5400	0.08	3	11
PZ-15	17-Nov-82	3900	--	4	8
PZ-16	08-Nov-82	2900	--	4	7

TABLE 39
RECENT GROUNDWATER QUALITY FIELD PARAMETERS
Leviathan Mine Site
Alpine County, California

Well/Piezo	SampleDate	Conductivity µS/cm	DO mg/L	pH su	Temp C
PZ-16	16-Nov-82	3100	--	4	7
PZ-16	06-Apr-83	2700	0.12	4.1	7
PZ-17A	08-Nov-82	4100	--	2.5	--
PZ-17A	17-Nov-82	3800	--	2.6	11
PZ-17B	08-Nov-82	2800	--	6.2	
PZ-17B	17-Nov-82	3000	--	6	8
PZ-17C	08-Nov-82	2600	--	4.4	
PZ-17C	17-Nov-82	3000	--	4.2	11
PZ-18A	12-Nov-82	2300	--	4.8	
PZ-18A	16-Nov-82	2300	--	4.2	7
PZ-18A	29-Nov-82	2200	--	4.5	7
PZ-18B	12-Nov-82	--	--	4.5	
PZ-18B	16-Nov-82	2900	--	4.2	7
PZ-18B	19-Nov-82	3400	--	4.3	7
PZ-18C	12-Nov-82	3300	--	6.1	
PZ-18C	16-Nov-82	3200	--	5.4	7
PZ-18C	29-Nov-82	3100	--	5.5	7
PZ-19A	09-Nov-82	2500	--	4.6	9
PZ-19A	15-Dec-82	1900	--	5.1	8
PZ-19B	09-Nov-82	2600	--	4.6	9
PZ-19B	15-Dec-82	2500	--	5.1	7.5
PZ-1A	09-Nov-82	740	--	5.4	
PZ-1B	09-Nov-82	1600	--	4.5	6
PZ-1B	06-Apr-83	1400	0.1	3.9	7
PZ-1C	09-Nov-82	1400	--	4.4	7
PZ-1C	06-Apr-83	1300	0.1	4.1	8
PZ-20	12-Nov-82	1700	--	6.6	
PZ-20	10-Dec-82	1400	0.9	6.6	5
PZ-20	08-Apr-83	1400	--	6.7	7.5
PZ-20A	12-Nov-82	2050	--	6.7	6
PZ-20A	10-Dec-82	1700	--	6.9	7
PZ-20A	08-Apr-83	1700	--	6.5	7
PZ-21	15-Nov-82	--	--	--	6
PZ-22	08-Nov-82	610	--	7.3	6
PZ-22	06-Apr-83	890	0.05	6.7	
PZ-23A	15-Nov-82	1600	--	6.2	5
PZ-23A	17-Dec-82	1000	--	6.3	5.5
PZ-24	08-Nov-82	850	--	7	7
PZ-24	17-Dec-82	660	--	7	6
PZ-25	09-Nov-82	1400	--	4.6	7
PZ-25	17-Dec-82	1500	--	4.3	5
PZ-25	02-Nov-98	110	--	4.45	9.7
PZ-26	08-Nov-82	--	--	1.8	

TABLE 39
RECENT GROUNDWATER QUALITY FIELD PARAMETERS
Leviathan Mine Site
Alpine County, California

Well/Piezo	SampleDate	Conductivity µS/cm	DO mg/L	pH su	Temp C
PZ-26	17-Nov-82	18000	--	1.8	7
PZ-27	17-Nov-82	22000	--	--	13
PZ-2A1	08-Nov-82	13000	--	2	10
PZ-2A1	17-Nov-82	12000	--	2.1	9
PZ-2A1	06-Apr-83	13000	0.11	1.9	8.5
PZ-2A2	08-Nov-82	6800	--	2.2	10
PZ-2A2	16-Nov-82	5900	--	2.4	9
PZ-2A2	06-Apr-83	12000	0.13	1.9	8.5
PZ-2B1	08-Nov-82	2200	--	6.3	8
PZ-2B1	06-Apr-83	1000	0.1	5.9	7
PZ-2C1	08-Nov-82	8600	--	4.1	8
PZ-2C1	17-Nov-82	9400	--	3.8	8.5
PZ-2C1	06-Apr-83	8600	0.25	3.6	10
PZ-2C2	08-Nov-82	4500	--	4.5	7
PZ-2C2	17-Nov-82	5400	--	4.2	7.5
PZ-2C2	06-Apr-83	4200	0.28	4.1	8.2
PZ-31	25-Oct-82	300	--	6.4	--
PZ-32	25-Oct-82	360	--	5.1	--
PZ-32	06-Apr-83	300	0.2	4.4	--
PZ-33	20-Oct-82	460	--	5.4	
PZ-33	02-Nov-98	350	--	5.64	10.7
PZ-3A	09-Nov-82	600	--	7.1	8.5
PZ-3A	15-Dec-82	590	--	7.2	8
PZ-3A	08-Apr-83	--	--	--	--
PZ-3B1	09-Nov-82	1300	--	4.1	8
PZ-3B1	17-Nov-82	1300	--	4	7.5
PZ-3B1	08-Apr-83	1500	--	4	8.5
PZ-3B2	09-Nov-82	730	--	4.2	
PZ-3B2	17-Nov-82	860	--	4.2	7.5
PZ-3B2	08-Apr-83	620	--	4.3	8
PZ-3C	09-Nov-82	1300	--	6.1	9
PZ-3C	17-Nov-82	900	--	6.3	8.5
PZ-3C	08-Apr-83	1600	--	6	7.5
PZ-4	12-Nov-82	520	--	6.9	
PZ-4	16-Nov-82	540	--	6.3	7
PZ-4	15-Dec-82	470	--	7.5	7
PZ-4	08-Apr-83	460	--	6.8	8.5
PZ-5	08-Apr-83	1800	--	6.6	8
PZ-5A	19-Nov-82	1300	--	5.4	8
PZ-5A	15-Dec-82	1200	--	5.6	7.5
PZ-6	19-Nov-82	2200	--	4.1	7.5
PZ-6	15-Dec-82	2200	1.5	4.2	8
PZ-7	12-Nov-82	2800	--	5.7	9.5

TABLE 39
RECENT GROUNDWATER QUALITY FIELD PARAMETERS
Leviathan Mine Site
Alpine County, California

Well/Piezo	SampleDate	Conductivity µS/cm	DO mg/L	pH su	Temp C
PZ-7	08-Apr-83	420	--	7.8	9.5
PZ-8	19-Nov-82	510	--	6.6	7.5
PZ-8	23-Nov-82	520	--	7.3	8
PZ-8	08-Apr-83	540	--	6.4	9
PZ-8A	19-Nov-82	600	--	6.9	7.5
PZ-8A	23-Nov-82	600	--	7.6	8
PZ-8A	08-Apr-83	580	--	6.3	8.5
PZ-9A	12-Nov-82	3800	--	5.1	--
PZ-9A	16-Nov-82	3100	--	5.3	8.5
PZ-9A	29-Nov-82	3000	--	5.8	--
PZ-9B	12-Nov-82	4500	--	4.6	--
PZ-9B	16-Nov-82	4100	--	4.3	8
PZ-9B	29-Nov-82	4400	--	4.7	--
PZ-9C	12-Nov-82	4900	--	3.8	--
PZ-9C	16-Nov-82	5000	--	3.4	8
Count		138	13	137	112
Median		2185	0.12	4.9	8

Source: Project Database. Data from "1998-1999 Data Summary Report, Administrative Order on Consent, Leviathan Mine, Alpine County, California" by the RWQCB (Source code SRK-003).

Abbreviations
C = Celsius
DO = dissolved oxygen
mg/L = milligrams per liter
su = standard units
µS/cm = microsiemens per centimeter

TABLE 40
PROJECT DATABASE CONTENTS AS OF OCTOBER 2008
Leviathan Mine Site
Alpine County, California

Date	Database Source Code	Author	Title	Surface Water Quality	Sediment Quality	Soil Quality	Ground-water Quality	Bio-assessment Data	Climate Data	Flow Data	Summary
1952	WHI-001	W. White, Nevada Department of Health	Letter regarding water samples collected from Aspen and Leviathan Creeks (pre-mine)	2	0	0	0	0	0	1	Documents pre-open-pit mining surface water quality based on two samples. One sample was collected from Aspen Creek above the site and one was collected from Leviathan Creek at the bridge downstream of the site. One flow measurement collected.
1955	NCR-002	Nevada Dept of Conservation and Natural Resources (NDCNR), Division of Wildlife	Nevada Division of Wildlife Stream Survey - Bryant Creek	0	0	0	0	1	0	0	Includes a downstream survey of the Bryant and Barney Riley creeks in July and September of 1955. Qualitative measurements made of stream quality. Data collected on the number of fish that were shocked during a fish shocking test. No fish were shocked along any of the five sections during the test.
1958	COL-001	S.J. Coli	Report Leviathan Creek Bioassay	0	0	0	0	25	0	0	A bioassay was conducted in 1958 to investigate the toxicity of Leviathan Creek on rainbow trout. Four tests were performed on Leviathan Creek and two control tests performed on Mountaineer and Doud creeks. All 32 fish tested in Leviathan Creek died after 170 minutes. All 16 fish at the control sites survived after 48 hours.
1958	REI-001	E. Reinke, CA Dept of Public Health	Transmittal to RWQCB: Leviathan Creek water quality sample results	104	0	0	0	0	0	0	Five surface water samples were collected on Leviathan Creek to investigate the water quality above the mine, at the mine, and downstream o the mine. Samples collected on Sept. 27,1957. Water samples were analyzed for general chemistry and metals.
1968	RWQ-001	RWQCB	Report on Pollution of Leviathan Creek Caused by Leviathan Mine	17	0	0	0	0	0	0	Includes a detailed mining history and information on pollution at the site. Five surface water samples were collected from a culvert downstream of the site in 1963. Water samples were analyzed for pH, total iron, and sulfate. Results supported the issuance of Resolution 64-3, a Cease and Desist Order for the site.
1969	LEG-004	John Leggett, RWQCB	Letter: Transmit RWQCB meeting minutes; Fish and Game Report (Sterling P. Davis, 1969)	138	0	0	0	16	0	0	Surface water quality and bioassays were collected from 6 sampling stations. The 6 sample stations included water from the adit, an area of "mine drainage from springs," and the present-day USGS surface water Stations 1, 23, 24, and 31. The surface water quality included an analysis of general chemistry and metals. The bioassessment included a survey of bottom organisms (fish food) and an evaluation of Leviathar Creek toxicity on rainbow trout. Report evaluates the length of stream affected by mining activities (7.8 miles) and the estimated number of fish lost (227 pounds per year).
1969	NEL-002	Nelson Laboratories for RWQCB	Investigation of Soil and Irrigation Water Conditions on the Brooks Park - River Ranch	42	0	378	0	0	0	0	Two surface water samples (named BCDD and CCDD) were analyzed for general chemistry and metals. Soil samples from 6 locations (A through F) were collected within the top foot of the surface and analyzed for metals, nutrients, and the percentage of sand, clay, and organic material. All samples were collected on Nov. 11, 1969. Limited details were available for review.[1]
1970	YOU-001	Ralph Young, Agricultural Consultant	An Appraisal of the Effects of Contaminants in Irrigation Water Derived from Bryant Creek on the Agricultural Potential of River Ranch	14	0	68	0	0	0	0	One surface water sample (named BCDD) was collected and analyzed for general chemistry and metals. Four soil sample locations (1C, 2C, 2L, 1L) were collected from the top four inches of the surface. All samples were collected on Sept. 7, 1970, and analyzed for pH and metals. Limited details were available for review.[1]
1975	RWQ-002	RWQCB	Report on Pollution of Leviathan Creek, Bryant Creek and the East Fork Carson River Caused by the Leviathan Sulphur Mine	158	0	0	0	0	0	0	Investigation conducted on Leviathan Creek, Bryant Creek, and the East Fork Carson River. Provided background history of the mine, and presented new surface water quality data. Water samples were analyzed for general chemistry and metals from 5 surface water locations (those named LEV-ds, Mine Drainage [1], and Mine Drainage [2], and the present-day locations of USGS Stations 1 and 31). Samples were collected in December 1968, June and September 1969, and July and December 1974. Results indicate that the surface water quality did not improve between 1968 and 1974 and remained at concentrations that violated the discharge requirements.
1977	BUT-001	Richard Butterfield, UNR	The Revegetation Potential of the Leviathan Mine Spoils (MS thesis)	0	0	159	0	0	0	0	Samples were collected from surface soil and analyzed for general chemistry, nutrients, metals, and percent sand, silt, and clay. Details of the sample date, location, or methods were not available for review.[1]
1985	HAM-001	D.P. Hammermeister, S.J. Walmsley, USGS	Hydrologic Data for Leviathan Mine and Vicinity Alpine County, California, 1981-83	3,297	57	0	1,375	39	0	109	Surface water field data included one or more measurements of pH, flow, water temperature, and specific conductance at 45 locations in and adjacent to the mine area. Stream sediment samples were collected at 3 surface water stations in May 1983. These sediment samples were analyzed for metals, total carbon, and moisture content. Subsurface lithology was recorded in 71 vertical borings. Although not included within the database, the borehole geophysical data provided information on moisture content, porosity, density, natural gamma, and temperature logs. Selected samples were analyzed for mineralogic content. The borings were converted to piezometers, many of which were clustered and screened at different depths. Groundwater field data were collected from the 71 piezometers from August 1982 through April 1983. Field measurements included the depth to water, hydraulic conductivity, and temperature. Groundwater samples were analyzed for metals and general chemistry.
1989	BAL-001	James W. Ball, D. Kirk Nordstrom, USGS	Final Revised Analyses of Major and Trace Elements from Acid Mine Waters in the Leviathan Mine Drainage Basin, California and Nevada, October 1981 to October 1982	2,412	0	0	0	0	0	64	Revised surface water analytical results of the data set from the 1981-1983 USGS investigation were presented. This data set was re-analyzed using a more precise method for quantifying trace metals in surface water that can heavily alter surface water tracer studies. Sixty-seven surface water samples from 45 locations were re-analyzed.
1997	CLA-002	Vic Claassen and Michael Hogan, UC Davis	Partial Soil Remediation and Revegetation of the Leviathan Mine	0	0	773	0	0	0	0	Surface soil samples were collected from 31 sampling locations and analyzed for metals, nutrients, conductivity, pH, and percent of organic material. Samples were collected sometime between 1985 and 1986. Limited details were available for review.[1]

TABLE 40
PROJECT DATABASE CONTENTS AS OF OCTOBER 2008
Leviathan Mine Site
Alpine County, California

Date	Database Source Code	Author	Title	Surface Water Quality	Sediment Quality	Soil Quality	Ground-water Quality	Bio-assessment Data	Climate Data	Flow Data	Summary
1998	LAW-001	Stephen J. Lawrence, USGS	Trace-Element Enrichment in Streambed Sediment and Crayfish, Carson and Truckee Rivers, Nevada and California, September 1992	0	28	0	0	29	0	0	Eleven streambed sediment samples were collected from the Carson and Truckee rivers and analyzed for metals. Results were compared to bioassays conducted on crayfish.
1998	SRK-002	SRK Consulting	Leviathan Mine Spring 1998 Stream Monitoring Program	2,842	0	0	0	0	0	37	Surface water samples were collected at 9 stream locations during six sampling events conducted between June and July of 1998. Stream locations included stations EFC1, EFC2, and selected USGS surface water sampling stations. Field measurements of flow, temperature, pH, were collected at each stream location. Water samples were analyzed for nutrients, hardness, TDS, total alkalinity, and metals.
1999	ENS-001	ENSR Environmental Toxicology Services for ARCO Environmental Remediation, LLC	Data Report for the Leviathan Mine Study Area Water and Sediment Toxicity Testing and Benthic Community Data, September 1998 Assessment	498	734	0	0	79	0	0	Surface water samples were collected from 18 locations between September 1998 and October 1999. Locations included selected USGS stations and from discharge points at the site. The analyses performed on the surface water samples included measuring the pH, total dissolved solids, dissolved oxygen, dissolved organic carbon, and metals. Stream sediment samples were collected from 18 locations with the surface water samples and analyzed for total organic carbon, grain size, and metals. Bioassessments were performed at 14 locations, which included selected USGS stations and from discharge points at the site. Measurements of %C, EPT, HBVI, mean density, total taxa, and a water toxicity test were performed. Limited details were available for review.[1]
1999	SRK-003	SRK Consulting	1998-1999 Data Summary Report Administrative Order on Consent Leviathan Mine, Alpine County, California	3,205	0	398	1,293	0	24	46	Surface water samples were collected at 19 stream locations during 10 sampling events between September and November of 1998. The sampling locations included discharge points from the site (e.g., adit, seeps, CUD, etc.) and selected USGS surface water sampling locations. Field measurements of flow, temperature, and pH were collected at each sampling location. Water samples were analyzed for nutrients, hardness, TDS, and metals. Two hundred surface soil samples were collected and analyzed for pH and conductivity. Fifteen borings were advanced to observe the subsurface lithology and install monitoring wells (MW-1 through MW-12). Paired/clustered wells were completed in MW-2, MW-5, and MW-10) to compare vertical differences in groundwater quality. Groundwater samples were collected from 17 wells: 15 newly installed monitoring wells and two of the remaining piezometers (PZ-25 and PZ-33). Groundwater samples were collected during 23 separate events between August 1998 and September 1999. Groundwater parameters (pH, temperature, conductivity, TDS) were measured in the field and samples were analyzed for metals. Climate data was recorded from a light-duty weather station from June 1998 through September 1999. Temperature, precipitation, and wind speed were recorded. Climate during the wet season was not recorded.
1999	THO-002	Larry Thompson, Dan Welsh, USFW for Atlantic Richfield and LMC	Assessments of Injuries to Aquatic Natural Resources near the Leviathan Mine, Alpine County, California. Phase 1 Data Report: Concentrations of Metals and Trace Elements in Aquatic Insects and Fish	572	0	0	0	442	0	0	The purpose of this study was to determine the concentrations of metals and trace elements in whole aquatic insects and in the muscle and liver tissues of fish, collected in surface waters downstream from the Leviathan Mine site. Four surface water samples were collected at 12 stream locations on April 5, 1999. The sample stations included EFC-Ruhen and selected USGS sample stations. Four water samples were collected at each station and analyzed for metals, acidity, alkalinity, and nutrients. In September 1998, aquatic insects were collected in 11 stream locations, 7 of which are downstream of the site. In October 1998, fish were collected in creeks downstream of the site; samples were analyzed for metal concentrations.
2000	HOF-001	Ray J. Hoffman, Karen A. Thomas, USGS	Methylmercury in Water and Bottom Sediment Along the Carson River System, Nevada and California, September 1998	12	4	0	0	0	0	2	Surface water samples were collected from 2 locations (EFC-Ruhen and EFC-upstr) in September 1998. Surface water samples were analyzed for flow, pH, temperature, mercury, methyl-mercury, and total organic carbon. Stream sediments were analyzed at these locations and analyzed for mercury and methylmercury. Details not provided.[1]
2000	LEH-001	Stafford K. Lehr, CDFG	Leviathan Mine Natural Resources Damage Assessment Phase I Fisheries Assessment	0	0	0	0	253	0	0	Documents the status of fisheries populations in the Leviathan-Bryant Creek watershed in October 1998. A bioassessment was conducted at 11 locations and included information on the population of fish in each of the sections of the watershed.
2000	THO-001	Karen A. Thomas, Michael S. Lico, USGS	Data on Stream-Water and Bed-Sediment Quality in the Vicinity of Leviathan Mine, Alpine County, California, and Douglas County, Nevada, September 1998	982	2031	0	0	0	0	14	Conducted a chemical assessment of streams in the area of Leviathan Mine in September 1998. Measurements at 14 locations of stream flow, pH, dissolved oxygen, temperature, specific conductance, and at most sites, alkalinity, bicarbonate, and carbonate. Surface water samples were analyzed for nutrients, major ions, trace elements, and organic carbon. Streambed sediments were collected at the same locations and analyzed for major and trace elements, total carbon, inorganic carbon, and organic carbon.
2001	HIG-006	Damian K. Higgins	Preliminary Assessment of Fish Community Dynamics and Trace-Element Exposures to Aquatic Invertebrates and Salmonids, Lower Bryant Creek and East Fork Carson River, Douglas County, Nevada, 2001	0	0	0	0	1,026	0	0	Bioassessment of metals in 38 fish tissue samples collected at 4 locations (BRY, EFC 1, EFC2, EFC-Ruhen) in October 2001. Limited details were available for review.[1]

TABLE 40
PROJECT DATABASE CONTENTS AS OF OCTOBER 2008
Leviathan Mine Site
Alpine County, California

Date	Database Source Code	Author	Title	Surface Water Quality	Sediment Quality	Soil Quality	Ground-water Quality	Bio-assessment Data	Climate Data	Flow Data	Summary
2001	MIL-001	Glenn C. Miller, Timothy K. Tsukamoto, UNR	Operation and Monitoring of Bioreactors at the Leviathan Mine	131	0	0	0	0	0	0	Water samples were collected through various parts of the Aspen Seep bioreactor to optimize and evaluate effectiveness of the system modifications. Samples were collected during 15 different sampling events between January and July of 2001. Water samples were analyzed for pH, TDS, total alkalinity, and metals.
2002	BRO-004	Brown & Caldwell Consultants	Leviathan Mine 2001 Early Response Action, Channel Underdrain Treatment Completion Report (with Appendices A through F)	232	0	0	0	0	0	0	A treatability study was performed to achieve short-term water quality improvements in Leviathan Creek, to demonstrate continuous lime treatment, and to assist in managing solids generated by CUD treatment. The technology tested included the use of a continuous treatment lagoon system using calcium hydroxide (lime) designed for metal hydroxide and metal oxy-hydroxide precipitation. Seven surface water sampling events were conducted between August and September of 2001 to monitor the effectiveness of the treatment technology. Field parameters (e.g., pH, temperature) were recorded and water samples were collected from the influent, effluent, and surface of Pond 4 for laboratory analysis. Water samples were analyzed for total alkalinity, acidity, TDS, sulfate, hardness, and metals.
2002	FIS-002	Peter Fischer, Mae Gustin, UNR	Influence of Natural Sources on Mercury in Water, Sediment and Aquatic Biota in Seven Tributary Streams of the East Fork of the Upper Carson River, California	0	18	0	0	19	0	0	Seven tributaries were sampled between June and September 1999 to measure the concentration of mercury and methylmercury in stream sediments and aquatic biota. Limited details were available for review.[1]
2002	KLE-002	Kleinfelder, Inc., Reno, NV	Geotechnical Investigation Report: Phase II Slope Stability Investigation, Leviathan Mine Delta Area Waste Pile, Alpine County, California	0	0	0	45	0	0	0	Geotechnical investigation on the slope stability of the Delta Area waste pile. Groundwater elevations were collected from borings B-1 through B-9, MW-8, and MW-12 during 5 events between September and November of 2001.
2006	MAR-006	Melanie J. Markin, USFWS; Julie Yee, USGS	Water Quality Study Report for the Natural Resource Damage Assessment of Surface Water Below the Leviathan Mine, Alpine County, California and Douglas County, Nevada	443	0	0	0	0	0	0	Seven surface water stations (BRY, LEV, Sta 1, 15, 23, 25, and 26) were monitored on June 13, 2002, and analyzed for pH, alkalinity, organic carbon, nutrients, and metals. Limited details were available for review.[1]
1995-2003	HER-EDR	Dr. David Herbst, RWQCB and EPA	Electronic Data Report (EDR) - Semi-Annual Bioassessment Data	0	0	0	0	981	0	0	Provides (1) semiannual benthic macroinvertabrate and sediment data, and (2) Field Evaluation and Technical Support (FEATS) data. Data provided for June 1995 through September 2003.
1998-2002	USG-EDR	USGS	Electronic Data Report - Periodic Flow Measurements	69	0	0	0	0	0	69	USGS surface water flow data collected from Sta 16 and Sta 24 during 40 sampling events from October 1998 through August 2002.
2002-2005	EPA-EDT	EPA	Electronic Data Transfer (EDT) - Field Evaluation and Technical Support (Feats) Data	4,404	813	0	0	0	0	0	RWQCB mono- and biphasic water quality. Data provided from June 2002 through September 2005.
2003-2005	UNR-EDT	UNR, for Atlantic Richfield Company	Electronic Data Transfer - Aspen Seep Bioreactor Data	2,864	0	0	0	0	0	83	Atlantic Richfield ERA influent and effluent water quality data from Aspen Seep bioreactors from April 2003 through February 2005.
ONGOING	ACE-EDT	U.S. Army Corps of Engineers	Oversight Summaries	771	0	0	0	0	0	0	Measurements of pH, specific conductance, and temperature of surface water from 17 surface waste stations. Data provided since June 2007.
ONGOING	ARC-EDT	Atlantic Richfield Company	Electronic Data Transfer (EDT) - ERA Treatment Data	24,665	0	0	0	0	0	549	Provides (1) influent and effluent water quality and sludge data from the Pond 4 CUD/DS treatment system and (2) influent and effluent water quality and sludge data from the Aspen Seep bioreactor treatment system. Data provided since Sept. 13, 2001.
ONGOING	NDE-EDT	Nevada Dept of Environmental Protection	Electronic Data Transfer - Surface Water Quality Data	9,525	0	0	0	0	0	136	Ongoing data collection. Surface water sampling along the East Fork Carson River and Sta 26. Data provided since January 1977.
ONGOING	USG-PUB	USGS	Published Flow Data	5	0	0	0	0	0	42,106	USGS flow data collected from April 1994 through the present.
ONGOING	RWQ-EDT	RWQCB	Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data	46,101	293	0	73	0	432	378	Ongoing data collection. Provides (1) comprehensive surface water quality monitoring data (monthly and semiannual), (2) influent and effluent water quality and sludge data from the biphasic treatment system of adit and Pit Underdrain (PUD) flows, (3) site climate data, and (4) groundwater quality monitoring data (MW-3). Data provided since August 1984.

TABLE 41
REVIEW OF EXISTING DATA SOURCES FOR INCLUSION IN THE RISK ASSESSMENT
FEBRUARY 2009
Leviathan Mine
Alpine County, California

Date	Author	Title	Surface Water	Sediment	Soil	Dust	Ground-water	Bio-assess ment	Plant	Climate	≤10 years (y/n)	≤5 years (y/n)	Usability Level	Data Evaluated (y/n)	Applicable for RA (y/n)	Reason
1952	W. White, Nevada Department of Health	Letter regarding water samples collected from Aspen and Leviathan Creeks (pre-mine)	X								n	n	rejected	y	n	rejected data and >10 years
1955	Nevada Dept of Conservation and Natural Resources (NDCNR), Division of Wildlife	Nevada Division of Wildlife Stream Survey - Bryant Creek						X			n	n	rejected	y	n	rejected data and >10 years
1958	S.J. Coli	Report Leviathan Creek Bioassay						X			n	n	low	y	n	low data and >10 years
1958	E. Reinke, CA Dept of Public Health	Transmittal to RWQCB: Leviathan Creek water quality sample results	X								n	n	low/rejected	y	n	low/rejected data and >10 years
1968	RWQCB	Report on Pollution of Leviathan Creek Caused by Leviathan Mine	X								n	n	low/rejected	y	n	low/rejected data and >10 years
1969	John Leggett, RWQCB	Letter: Transmit RWQCB meeting minutes; Fish and Game Report (Sterling P. Davis, 1969)	X					X			n	n	low/rejected	y	n	low/rejected data and >10 years
1969	Nelson Laboratories for RWQCB	Investigation of Soil and Irrigation Water Conditions on the Brooks Park - River Ranch	X		X						n	n	low	y	n	low data and >10 years
1970	Ralph Young, Agricultural Consultant	An Appraisal of the Effects of Contaminants in Irrigation Water Derived from Bryant Creek on the Agricultural Potential of River Ranch	X	X	X						n	n	low/rejected	y	n	low/rejected data and >10 years
1975	RWQCB	Report on Pollution of Leviathan Creek, Bryant Creek and the East Fork Carson River Caused by the Leviathan Sulphur Mine	X								n	n	low/rejected	y	n	low/rejected data and >10 years
1977	Richard Butterfield, UNR	The Revegetation Potential of the Leviathan Mine Spoils (MS thesis, UNR)			X						n	n	rejected	y	n	rejected data and >10 years
1985	D.P. Hammermeister, S.J. Walmsley, USGS	Hydrologic Data for Leviathan Mine and Vicinity Alpine County, California, 1981-83	X	X			X	X			n	n	low	y	n	low data and >10 years
1989	James W. Ball, D. Kirk Nordstrom, USGS	Final Revised Analyses of Major and Trace Elements from Acid Mine Waters in the Leviathan Mine Drainage Basin, California and Nevada, October 1981 to Oct 1982	X								n	n	low	y	n	low data and >10 years
1996	Bonzongo et al.	Mercury Levels in Surface Waters of the Carson River - Lahontan Reservoir System, Nevada: Influence of Historic Mining Activities	X								n	n	high	y	n	high data but >10 years. Peer-reviewed document. Assume data quality and validation has been conducted.
1997	Vic Claassen and Michael Hogan, UC Davis	Partial Soil Remediation and Revegetation of the Leviathan Mine			X						n	n	rejected	y	n	rejected data and >10 years
1998	Stephen J. Lawrence, USGS	Trace-Element Enrichment in Streambed Sediment and Crayfish, Carson and Truckee Rivers, Nevada and California, September 1992		X				X			n	n	high	y	n	high data but >10 years
1998	SRK Consulting	Leviathan Mine Spring 1998 Stream Monitoring Program	X								n	n	high	y	n	high data but >10 years
1999	ENSR Environmental Toxicology Services for ARCO Environmental Remediation, LLC	Data Report for the Leviathan Mine Study Area Water and Sediment Toxicity Testing and Benthic Community Data September 1998 Assessment	X	X				X			y	n	high	y	n	high data but >10 years

TABLE 41
REVIEW OF EXISTING DATA SOURCES FOR INCLUSION IN THE RISK ASSESSMENT
FEBRUARY 2009
Leviathan Mine
Alpine County, California

Date	Author	Title	Surface Water	Sediment	Soil	Dust	Ground-water	Bio-assess ment	Plant	Climate	≤10 years (y/n)	≤5 years (y/n)	Usability Level	Data Evaluated (y/n)	Applicable for RA (y/n)	Reason
1999	SRK Consulting	1998-1999 Data Summary Report Administrative Order on Consent Leviathan Mine, Alpine County, California	X		X		X			X	y	n	high/low	y	n	high/low data and >10 years
1999	Larry Thompson, Dan Welsh, USFW for Atlantic Richfield and LMC	Assessments of Injuries to Aquatic Natural Resources near the Leviathan Mine, Alpine County, California. Phase 1 Data Report: Concentrations of Metals and Trace Elements in Aquatic Insects and Fish						X			n	n	high	y	n	high data but >10 years
2000	Ray J. Hoffman, Karen A. Thomas, USGS	Methylmercury in Water and Bottom Sediment Along the Carson River System, Nevada and California, September 1998	X	X							n	n	high	y	n	high data but >10 years
2000	Stafford K. Lehr, CDFG	Leviathan Mine Natural Resources Damage Assessment Phase I Fisheries Assessment						X			n	n	high	y	n	high data but >10 years
2000	Karen A. Thomas, Michael S. Lico, USGS	Data on Stream-Water and Bed-Sediment Quality in the Vicinity of Leviathan Mine, Alpine County, California, and Douglas County, Nevada; September 1998	X	X							n	n	high	y	n	high data but >10 years
2001	Damian K. Higgins	Preliminary Assessment of Fish Community Dynamics and Trace-Element Exposures to Aquatic Invertebrates and Salmonids, Lower Bryant Creek and East Fork Carson River, Douglas County, Nevada, 2001	X					X			y	n	unknown	n	maybe	laboratory report needed to validate data
2001	Glenn C. Miller, Timothy K. Tsukamoto, UNR	Operation and Monitoring of Bioreactors at the Leviathan Mine	X								y	n	low	y	n	low data but <10
2002	Brown & Caldwell Consultants	Leviathan Mine 2001 Early Response Action, Channel Underdrain Treatment Completion Report (with Appendices A through F)	X								y	n	high	y	n	high data and <10 years, but not applicable to RA
2002	Peter Fischer, Mae Gustin, UNR	Influence of Natural Sources on Mercury in Water, Sediment and Aquatic Biota in Seven Tributary Streams of the East Fork of the Upper Carson River, California	X	X				X			y	n	high	y	y	high data and <10 years. Peer-reviewed document. Assume data quality and validation have been conducted.
2002	Kleinfelder, Inc., Reno, NV	Geotechnical Investigation Report: Phase II Slope Stability Investigation, Leviathan Mine Delta Area Waste Pile, Alpine County, California					X				y	n	high	y	n	high data and <10 years, but not applicable to RA
2004	Brooks	Leviathan Road XRF Data, January 6.				X					y	y	unknown	n	maybe	laboratory report needed to validate data
2004	Evans & Associates and JBR Environmental Consultants, Inc.	Leviathan Mine Soils and Vegetation Study			X				X		y	n	high/low	y	y	high data and <10 years. Matrix spikes (MS) for Fe (411%) and Mn (311%) for sample M6-L1-SALA were outside range. Fe and Mn data may need to be reevaluated based on MS results.
2006	Frontier GeoSciences Inc.	Leviathan Mine Plant Study: Trace Metals and Mercury Results, May.							X		y	y	low	n	n	Only laboratory data without locations of samples.

TABLE 41
REVIEW OF EXISTING DATA SOURCES FOR INCLUSION IN THE RISK ASSESSMENT
FEBRUARY 2009
Leviathan Mine
Alpine County, California

Date	Author	Title	Surface Water	Sediment	Soil	Dust	Ground-water	Bio-assess ment	Plant	Climate	<10 years (y/n)	≤5 years (y/n)	Usability Level	Data Evaluated (y/n)	Applicable for RA (y/n)	Reason
2006	Melanie J. Markin, USFWS; Julie Yee, USGS	Water Quality Study Report for the Natural Resource Damage Assessment of Surface Water Below the Leviathan Mine, Alpine County, California and Douglas County, Nevada	X								y	y	high	y	y	high data and <10 years
2008	Robison Engineering Company, Inc.	Phase II Enviornmental Site Assessment: Soil, Sediment, and Plant Tissue Sampling River Ranch Property, Parcel #2, Douglas County, Nevada		X	X				X		y	y	high	y	y	high data and <10 years
1995-2003	Dr. David Herbst, RWQCB and EPA	Electronic Data Report (EDR) - Semi-Annual Bioassessment Data						X			y	n	high	y	y	high data and some data <10 years
1998-2002	USGS	Electronic Data Report - Periodic Flow Measurements	X								y	n	low	y	n	low data and some data <10 years, but not applicable to RA
1999-2000	USGS	Published Flow Data	X								y	n	high	y	n	high data and <10 years, but not applicable to RA
2002-2005	EPA	Electronic Data Transfer (EDT) - Field Evaluation and Technical Support (FEATS) Data	X	X							y	y	high	y	n	high data and <10 years, but applicable to RA
2003-2005	UNR, for Atlantic Richfield Company	Electronic Data Transfer - Aspen Seep Bioreactor Data	X								y	y	low	y	n	low data but data <10 years, but not applicable to RA
ONGOING	RWQCB	Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data	X	X			X			X	y	y	low/high	y	y	low/high data and data <10 years
ONGOING	U.S. EPA	Twice annual sampling since 2000	X	X				X	X		y	y	low/high	y	y	low/high data and applicable to RA
ONGOING	Atlantic Richfield Company	Electronic Data Transfer (EDT) - ERA Treatment Data	X								y	y	low/high	y	n	low/high data and data <10 years, but not applicable to RA
ONGOING	Nevada Dept of Environmental Protection	Electronic Data Transfer - Surface Water Quality Data	X								y	y	high		y	high data and <10 years
ONGOING	U.S. Army Corps of Engineers	Oversight Summaries	X								y	y	unknown	n	n	not applicable to RA

Source: Supplemental information was obtained from the project database. Based on information available in February 2009.

Notes
low = Includes information on sample matrix, analyte, location, date, results, and units.
high = Includes all information for low data quality and also includes a documented source, sampling methods, lab analytical methods, and location coordinates. Only high data quality is appropriate for use in a risk assessment.
low/high = data has some but not all of the high quality data components.
rejected = Data records missing one or more information parameters for low quality data.
unknown = Laboratory data not available for review.

Abbreviations
RA = Risk Assessment
n = no
y = yes

TABLE 42
SUMMARY OF AVAILABLE DATA CONSIDERED FOR THE HUMAN HEALTH RISK ASSESSMENT
Leviathan Mine Site
Alpine County, CA

Reference	Sample Dates	Media	Number of Sample Locations	Analysis/Data Recorded	Notes
Individual Sampling Events					
Fischer and Gustin, 2002, Influence of Natural Sources on Mercury in Water, Sediment and Aquatic Biota in Seven Tributary Streams of the East Fork of the Upper Carson River, California	1999, June and September	Surface Water	7	total Hg, dissolved Hg, and methyl Hg	Filtered and unfiltered samples analyzed.
		Sediment	7	total Hg and methyl Hg analyzed; data reported in dry weight	Sieved sediment (<63 microns)
		Macroinvertebrates	7	total Hg and methyl Hg analyzed; data reported in dry weight	Stonefly samples; both individual and composite (3-4 individuals) samples collected.
Higgins, D.K. (USFWS), 2006, Preliminary Assessment of Fish Community Dynamics and Trace-Element Exposures to Aquatic Invertebrates and Salmonids, Lower Bryant Creek and East Fork Carson River, Douglas County, Nevada, 2001	2001, October 15-19	Fish	4	abundance, density, diversity, evenness, physical conditions (length, weight, other)	Need laboratory report to validate data.
		Aquatic Invertebrates	4	27 trace elements	
		Fish	4	27 trace elements	
Markin, M.J. and Yee, J. (USGS & USFWS), 2006, Water Quality Study Report for the Natural Resource Damage Assessment of Surface Water Below the Leviathan Mine, Alpine County, California and Douglas County, Nevada, March	2002, March 28 to 2003, May 9 2002, June 13	Surface Water	5	pH, alkalinity, chloride, sulfate, total organic carbon, dissolved organic carbon, specific conductance, major and trace elements	
Brooks, 2004, Leviathan Road XRF Data, January 6	2003, June 10-11	Dust	35	pH, arsenic, cadmium, and lead using EPA Method 6200 (XRF) and EPA Method 200.8.	Need laboratory report to validate data.
Evans&Associates and JBR Environmental Consultants, Inc., 2004, Leviathan Mine Soils and Vegetation Study	2003, June and July	Soil	14	metals	
		Plant	14	metals	
Robison Engineering Company, Inc., 2008, Phase II Environmental Site Assessment: Soil, Sediment, and Plant Tissue Sampling River Ranch Property, Parcel #2, Douglas County, Nevada	2007, August 23-30	Soil	5	soil metals - composite samples	Bioavailability testing performed after this report was generated. 15-22% total arsenic was bioavailable through in vitro digestion testing.
		Plant	5	plant metals - composite samples	
Ongoing Reporting					
Herbst, 2000, Bioassessment Monitoring of Acid Mine Drainage Impacts in Streams of the Leviathan Mine Watershed for Spring and Fall 1999, August	June 14-16, 1999; September 22-23, 1999	Aquatic Invertebrates	14	mean EPT, biotic index, percent midges, dominance, and invertebrate density	Five replicate composite kick samples collected per site.
Herbst, 2002, Bioassessment Monitoring of Acid Mine Drainage Impacts in Streams of the Leviathan Mine Watershed for Spring and Fall 2000, January	2000, June and September	Aquatic Invertebrates	14	mean EPT, biotic index, percent midges, dominance, and invertebrate density	Five replicate composite kick samples collected per site.
Herbst, 2004a, Bioassessment Monitoring of Acid Mine Drainage Impacts in Streams of the Leviathan Mine Watershed: An Update for 2001 and 2002 Surveys, January	2001, June; 2002, June and September	Aquatic Invertebrates	6	mean EPT, biotic index, percent midges, dominance, and invertebrate density	Five replicate composite kick samples collected per site.

TABLE 42
SUMMARY OF AVAILABLE DATA CONSIDERED FOR THE HUMAN HEALTH RISK ASSESSMENT
Leviathan Mine Site
Alpine County, CA

Reference	Sample Dates	Media	Number of Sample Locations	Analysis/Data Recorded	Notes
Herbst, 2004b, Bioassessment Monitoring of Acid Mine Drainage Impacts in Streams of the Leviathan Mine Watershed: An Update for 2003 Surveys, October	2003, June	Aquatic Invertebrates	6	mean EPT, biotic index, percent midges, dominance, and invertebrate density	Five replicate composite kick samples collected per site.
	2003, September	Aquatic Invertebrates	3	mean EPT, biotic index, percent midges, dominance, and invertebrate density	Five replicate composite kick samples collected per site.
Herbst, 2007, Bioassessment Monitoring of Acid Mine Drainage Impacts in Streams of the Leviathan Mine Watershed: An Update for Spring-Fall 2004-2005 Surveys, February	2004 and 2005 (June and September)	Aquatic Invertebrates	6	Mean EPT, biotic index, percent midges, dominance, and invertebrate density	Five replicate composite kick samples collected per site.
RWQCB, Electronic Data Transfer - Surface Water Quality, ERA Treatment, and Climate Data	ongoing	Surface Water	28	Various	Ongoing data collection for monthly and semiannual surface water quality monitoring, influent and effluent water quality and sludge data from the biphasic treatment system of adit and Pit Underdrain flows.
		Sediment			
		Groundwater			
		Climate			
U.S. EPA, Ongoing monitoring, Sept. 2000 to present	ongoing	Surface water	9	Various	Ongoing data collection along creeks generally in September and June of each year. Plant tissue data collected in 2005 and 2006.
		Sediment			
		Bioassessment			
		Plant tissue			
Nevada Dept of Environmental Protection, Electronic Data Transfer - Surface Water Quality Data	ongoing	Surface Water	5	Chemistry	Surface water sampling along East Fork Carson River and Station 26.

Abbreviations
EPT - Ephemeroptera (mayfly), Plecoptera (stonefly), and Trichoptera (caddisfly)
Hg - mercury
RWQCB - Regional Water Quality Control Board
USFWS - U.S. Fish and Wildlife Service
USGS - U.S. Geological Service
XRF - X-ray Ffluorescence

TABLE 43
DQOs BY STUDY AREA
Leviathan Mine Site
Alpine County, California

Data Collection Need from DQO Report	Study Area	Notes
Better characterization of mine features	ACSA, PSA, LCSA	From site construction information and further investigation
Topographical mapping of the area	ACSA, LCSA, PSA, DSA	New maps being prepared
Collection of site-specific inflow/outflow data to support the water balance	ACSA, PSA, LCSA	DQO comments called for better data to support the water balance
Site-specific meteorological and other inflow /outflow data	ACSA, PSA, LCSA	DQO comments identified the difference between the site and PRISM or SNOTEL data
Sampling and measurement of COPC concentrations to support risk assessment/remedial evaluation;	ACSA, PSA, LCSA, DSA	RI data collection
soil to assess potential ingestion and dermal contact;		
groundwater to assess source, contaminant migrations and potential use;		
soil deposited along creek banks during flood conditions to assess potential ingestion and dermal contact exposure;		
overburden used on mine roads to assess potential inhalation of suspended particulate matter;	Except PSA	
sediment to assess potential ingestion and dermal contact exposures; and	Except PSA	
surface water to assess potential dermal contact exposures	Except PSA	

TABLE 43
DQOs BY STUDY AREA
Leviathan Mine Site
Alpine County, California

Data Collection Need from DQO Report	Study Area	Notes
Groundwater to assess contaminant migration and use	On site, then off site if necessary	RI data collection
Biota sampling to assess potential ingestion	ACSA, LCSA, DSA	RI data collection
Physical characterization of soils	LCSA, PSA, ACSA	For hydraulic properties and geotechnical
Plants to assess potential ingestion exposure	ACSA, LCSA, DSA	Based on CSM
Fish to assess potential ingestion exposure	DSA	Based on CSM
Hydrologic/geochemical: • surface water flows; • synoptic geochemical survey to assess mass loading; • surface water/groundwater interaction; and • identification and characterization of springs/seeps	ACSA, PSA, LCSA, DSA	Water balance
Hydrologic/geochemical: • grain size and soil properties; • water levels; • surface water flows; • aquifer hydraulic conductivity (pump tests/slug testing); • aquifer porosity/effective porosity; • synoptic geochemical survey to assess mass loading;	ACSA, PSA, LCSA	Groundwater on property

TABLE 43
DQOs BY STUDY AREA
Leviathan Mine Site
Alpine County, California

Data Collection Need from DQO Report	Study Area	Notes
• assessment of surface water groundwater interactions; and • identification of springs		
Geophysical surveys to identify subsurface structures that may include electromagnetic induction and/or electrical resistivity.	ACSA, PSA, LCSA	As necessary
Stability, and soil physical properties to assess stability	ACSA, PSA, LCSA	As necessary for remedial construction
Assess leakage from ponds and conveyance lines	ACSA, PSA, LCSA	ASB and other systems

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 2	1	Figure 5 does not include "recharge to groundwater from stream losses," yet page 10 of the DQO report discusses "recharge to groundwater from stream losses," "leakage from the ponds and conveyance structures" as inflows.	Water Balance, LCSA, ACSA, Surface Water and Sediment
Section 2	2	PRISM could be used to estimate precipitation at the Monitor Pass SNOTEL site, and then compared to actual data, to further evaluate the accuracy of PRISM for the area.	Water Balance
Section 2.4.2.5; Pg 16	3	There is no discussion of most of the groundwater components presented in 2.4.2.1. Most of these components seem to be data gaps.	Hydrogeology, ACSA, PSA, LCSA
Section 2.4.3.5; Pg 23; 4th Paragraph	4	What is the rationale for the minimal effect of faults on groundwater flow? The faults could be acting as a preferential flow paths. This data gap should be evaluated.	Hydrogeology
Section 2.4.3.5; Pg 23; Southern Portion of Site; 5th Paragraph	5	Page 22 states that the sandstones "have some permeability." Please explain how the conclusion that the "USGS indicated no loss of water along Leviathan Creek in this area." is derived. We suspect that gains or losses of flow in this stretch of the creek (presumably Station 1 to Station 15) vary seasonally and is complicated by treated water discharges.	LCSA, Hydrogeology
Section 2.4.3.5; Pg 23; 3rd Paragraph	6	While the data may "suggest a lack of continuous groundwater surface within the fill materials," there is little data on which to base this conclusion. The contact between the fill material and the native material seems to be a likely place to find a water table.	ACSA, LCSA, Hydrogeology
Section 2.4.3.5; Pg 23-24; 4th Paragraph	7	Please cite or explain how the conclusion that "Water meter measurements by the USGS indicate no loss of water along Aspen Creek in this area." is derived. As mentioned above for Leviathan Creek, Water Board staff suspects that gains or losses of the flow in this stretch of the creek (presumably Station 22 to Station 16) vary seasonally.	Water Balance, ACSA, LCSA, Surface Water and Sediment
Section 2.4.3.6	8	Provide a hydrogeological model for the site	Hydrogeology, Section 2 of PWP
Section 2.4.3.6; Pg 24; 1st Paragraph	9	Please provide data to support the position that the pit acts as a groundwater sink. The constructed potentiometric map does not show this feature.	PSA, Hydrogeology and Water Balance

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 2.4.3.6; Pg 24; 2nd Bullet	10	The conclusion that "bedding does not play a major factor in groundwater flow" seems to contradict the following statements (page 23, paragraph 3): "Movement of water from the sandstone northeast of the waste dump is unlikely because of the dip of the bedding. For the same reason, movement of water from the sandstone north of the pit also seems unlikely." Please provide further explanation to support the conclusion that "bedding does not play a major factor in groundwater flow."	Hydrogeology, ACSA, LCSA, PSA
Section 2.4.3.6; Pg 24; 3rd Bullet	11	Please provide data that are used to support the influence of faults on groundwater flow.	Hydrogeology
Section 2.4.3.6; Pg 25; 3rd Bullet	12	Since the currently existing well pairs only show downward gradients, additional wells should be installed in areas observed to have upward gradients in previous studies.	LCSA, Hydrogeology
Section 2.4.3.6; Pg 25	13	Shallow and deeper groundwater monitoring should be conducted as downward vertical gradients show that contaminants may be transported to deeper groundwater.	LCSA, Hydrogeology
Section 2.4.3.6; Pg 25	14	Additional data needs should include:	Hydrogeology, PSA, Water Balance
		- Data to better define whether and to what extent the pit operates as a groundwater sink	
		- The effect of faults on groundwater flow	
		- Data to support the conclusion that the slide area does not support a groundwater zone at the fill / native material interface	
Section 2.4.4.4; Pg 29	15	Sources of sediment loading should be added as a data gap.	ACSA, LCSA, DSA, Surface Water and Sediment

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 2.4.4.5; Pg 30; 4th Bullet	16	Please identify evidence of leakage from evaporation ponds or transfer piping. This should not be assumed to be the characteristics of the Conceptual Site Model (CSM) but rather a potential data gap for the RI /FS work plan. The ASB should also be investigated.	LCSA, Water Balance
Section 2.4.4.5; Pg 30; 7th Bullet	17	This should be included in data gap investigation to verify the existence of “undefined sources”.	DSA Surface Water and Sediment, BSA
Section 2.4.4.5; Pg 30; 8th Bullet	18	Instead of speculating the presence of calcite-bearing rocks, the data gap investigation should include sampling to verify the “possible neutralization of groundwater in contact with calcite –bearing rocks.”	Hydrogeology
Section 2.4.4.5; Pg 31; Top of Page	19	Determining solute fate and transport from mine waste and overburden material should be added to the list of geochemical data gaps.	Storm Water, Surface Water and Sediment
Section 2.4.6.3; Pg 32; 3rd Paragraph	20	The landslide section presupposes that the stabilization of the slide mass is not feasible. We believe possible options for landslide mitigation should be included in the RI/FS.	ACSA, Geotechnical
Section 2.4.6.3; Pg 32; 4th Paragraph	21	The potential for seepage from the basin into the slide mass, and its potential to lubricate the large landslide, appears to be a data gap requiring additional investigation.	ACSA, LCSA
Section 2.4.6.3; Pg 32	22	Other geotechnical issues and data gaps need to be addressed, including but not limited to, seismic concerns, other slope stability issues (i.e., pit high walls), etc., relative to existing as well as future site features.	Geotechnical
Section 3.2; Pg 35	23	The Statement of Work for Remedial Investigation and Feasibility Study (USEPA RI/FS SOW) lists the following potential COCs in addition to those listed in Section 3.2: pH, total sulfate, ferric and ferrous sulfate, and sulfuric acid. These Potential COCs should be added to the list of COPCs in the DQO.	All studies
Section 3.3; Pg 36; Groundwater Transport	24	The last sentence incorrectly includes the ponds as a source, as the source of the AMD in the ponds would be the sources identified in the first sentence of the paragraph.	LCSA, Water Balance
Section 3.3; Pg 36; Surface Water Runoff	25	The fate and transport of sediments should be considered as a separate mechanism than surface water.	Surface Water and Sediment, ACSA, LCSA, DSA

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 4.1; Pg 44; Number 4	26	The Nevada access road, from Hwy 395 to the mine site, was built and maintained in part using waste material originating from Leviathan Mine and should be included as part of the Off-Site Study Area.	DSA
Section 5.1.1; Pg 48; 3rd Paragraph; 2nd Sentence	27	The relationship between mining activities, groundwater migration, acid generation, and slope stability within the ACSA should be included in the DQO Report as an identified data gap requiring further investigation.	ACSA, Water Balance, Geotechnical
Section 5.1.2; Pg 49; Previous Data Collection Activities in the ACSA; 1st Paragraph	28	Comparing concentrations with cleanup criteria or screening criteria would be more useful in determine whether additional samples are needed.	QAPP
Section 5.1.3; Pg 50; ACSA Conceptual Model; 2nd Paragraph; 1st 3 Sentences	29	Additionally, the statement “may be the source of the water to both seeps” indicates the source of water is not known and that source water within the ACSA should be included in the DQO Report as an identified data gap requiring further investigation.	ACSA, Hydrogeology, Water Balance
Section 5.1.3; Pg 50; ACSA Conceptual Model; 2nd Paragraph; 3rd Sentence	30	The sentence states that “it is unknown where the water becomes acidic or where the migration pathway of water through the overburden piles is located…” Acid generation and the migration pathway within the ACSA should be included in the DQO Report as an identified data gap requiring further investigation.	ACSA
Section 5.1.3; Pg 50; ACSA Conceptual Model; 3rd Paragraph; 3rd Sentence	31	The report states: “Where these areas exist at the ground surface they will need to be evaluated for human and ecological health exposure. Otherwise investigation of the overburden piles is not considered necessary.” This statement should be revised to “Where these areas exist at the ground surface or where water comes into contact with these areas should be investigated to evaluate human and ecological health exposure.”	ACSA

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 5.2.2; Pg 52; Previous Data Collection Activities in the PSA; 2nd Paragraph	32	The report should show a comparison table of all soil and GW data of various study areas.	Hydrogeology
Section 5.2.3; Pg. 52; 1st Paragraph; 3rd and 4th Sentences	33	The relationships among groundwater in the adit, flow through the surrounding materials, and “pit flows” within the PSA should be included in the DQO Report as an identified data gap requiring further investigation.	PSA, Hydrogeology, Water Balance
Section 5.2.3; Pg 52; PSA Conceptual Model; 2nd Paragraph; 2nd Sentence	34	Groundwater migrating beyond the pit boundary contradicts the claim of the pit being a groundwater sink. It appears as though the direction of groundwater migration within the PSA is unknown and sufficient data are not available. The direction of groundwater migration within the PSA should be included in the DQO Report as an identified data gap requiring further investigation.	PSA, Hydrogeology, Water Balance
Pg 53; 3rd Paragraph	35	The recharge potential of the pit and the recharge potential relating to any remnant underground workings should be included in the DQO Report as an identified data gap requiring further investigation.	PSA, Hydrogeology, Water Balance
Section 5.3.2; Pg 55; 1st Paragraph	36	Bioassessment monitoring has been conducted in the LCSA and should be added as a data collection bullet.	LCSA, Biological Investigations
Section 5.3.3; Pg 56; 2nd Paragraph	37	Whether the ponds or pipelines leak, and if so, to what extent is a data gap that could be investigated as part of the RI/FS.	LCSA, Water Balance
Section 5.3.3; Pg 57; 1st Paragraph	39	The source of this water appears to be a data gap requiring further investigation. The area of this pond should be assessed in relation to the toe of the large landslide described in the Aspen Creek Study Area. Please provide data to demonstrate the size and volume of this pond. Please describe the other water quality data that exists for this pond.	LCSA and Hydrogeology, Water Balance

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 5.4; Pg 57; General Comment	40	The OSA should not be limited to the Bryant Creek channel; it should include the Nevada road as it is, in part, constructed with mine waste. The OSA should delineate the entire downstream extent of stream sediment and overbank impacts from mine waste.	DSA
Section 5.4; Pg 57; 1st Paragraph; 1st Sentence	41	The report states: "It is suspected that a certain amount of the Delta discharge comes from water in the current channel of Leviathan Creek." Supporting data need to be provided to continue to make this claim.	LCSA, Water Balance
Pg 69	42	Problem Statement: While the report states: "…data necessary to evaluate the long-term effectiveness of the ASB compared to other remedial and mitigation alternatives should be collected." There is no mention of the same "necessary evaluation" for the Study Area 3.	LCSA
Pg 97; Table 8-12; DS #7	43	There are five ponds. The required data should include liner inspection and/or testing.	LCSA, Water Balance
Pg 98; Table 8-13; DS #3	44	Again, the extent of contamination needs to be defined.	LCSA, Hydrogeology
Pg 100; Table 8-14; DS #3	45	Again, the extent of contamination/plume delineation should not presume shallow upper aquifer. Investigation should be conducted to find the extent of contamination wherever it may be.	Hydrogeology
Pg 100; Table 8-14; DS #4	46	Groundwater samples alone seem insufficient for the "population of interest". Other geological samples may also be necessary to provide information on groundwater flow path.	Hydrogeology
Pg 100; Table 8-14; DS #7	47	More specific liner testing seems appropriate.	LCSA, Water Balance
Section 8.3.7; Pg 103; 5th Bullet	48	Hydrological / geochemical - this list should also include groundwater flow direction, horizontal hydraulic gradients, vertical hydraulic gradients, and identification of preferential flow paths.	Hydrogeology
Section 8.4; Pg 103	49	This section needs to incorporate the Nevada Road as part of the OSA.	DSA

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
Section 2.4.3.6	50	Strategies to address data gaps identified in the hydrogeologic model should be provided in the narrative. Specific areas to be addressed, with maps, should be provided. Are fracture sets in bedrock an important conduit for groundwater flow? How is the recent emergence of the Aspen seep explained by the current model? Can another Aspen Seep develop in the future?	Hydrogeology and ACSA
		Does the ponded water discovered just upstream from the Aspen-Leviathan Creeks confluence fit into the hydrogeologic model for the site?	
Section 2.4.4.4	51	Geochemical data from sediments behind Ruehnstroth Dam should be obtained to determine the presence or absence of contamination and the potential exposure to off-site residential and Washoe tribal persons. Or has this off-site areas been eliminated from further concern?	DSA, Surface Water and Sediment
Section 2.4.6.3	52	Stabilization of the entire slide mass may be infeasible, however the continued movement of this rock mass may initiate more “Aspen Seep” type discharges that are also undesirable. A thorough understanding of the geotechnical possibilities (large-scale benching similar to Delta Slope) is warranted to aid in preventing future releases (stated in 2.4.6.4). Do not rule out at this point.	ACSA, LCSA , Geotechnical
Section 3.3	53	Explain why mercury is not viewed as a potentially volatile constituent?	CSM, Risk Assessment Approach
Section 5.1.3	54	Is there a geophysical technique that could be employed over the ACSA waste piles to determine whether hot spots with high concentrations of pyrite or other AMD/ARD producing rock exist? The RI should be directed to find selective remedies from further detailed study of this area, or not.	ACSA, Sitewide
Section 5.2.3	55	Has the adit been mapped to determine locations where groundwater enters and whether there are extensive areas with massive pyrite mineralization? Would plugging this adit have any value? If groundwater flow was diverted away from this working would less acidity result in the outflow from the adit discharge.	PSA
Section 3.2; Pg 35	56	Acidity or pH should be added as chemicals of potential concern (COPC) since it is site-related and can be directly toxic.	Sitewide
Section 5.1.2; Pg 49	57	a. Please add the benthic macroinvertebrate sampling within Aspen Creek to the list of previous data collected.	ACSA, Biological Investigation

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
		In addition, a table or figure that shows the comparison of surface water data to the regulatory standards by chemical should be added.	QAPP
Table 8-4; Pg 77	58	As noted above, please include additional biota sampling as well for decision statement #4	ACSA, Bilogical Investigation
Section 8.2.1; Pg 81	59	Please include aquatic receptors as well to evaluate the impact of un-treated ARD reaching Leviathan Creek	LCSA, Biological Investigations
Section 8.2.7; Pg 91	60	Please include collection and analyses for surface water samples as well.	LCSA, DSA, Surface Water and Sediment
Table 8-12; Pg 96	61	Please include biota sampling as well to evaluate ingestion pathways for birds and mammals.	CSM, Surface Water and Sediment
	62	Decision Rules for each of the study areas identified in the DQO Report address components of Leviathan Mine hydrogeology in a general sense. However, the decision rules are limited to a focus on 'shallow groundwater' (for example, Leviathan Creek Study Area Decision Rules 3 and 4). This focus on the 'shallow groundwater' (identified in the Report as being mostly within mine waste or overburden) may not provide for collection of information necessary to: (1) Investigate groundwater contamination downgradient from Leviathan Mine (2) Verify whether site related contaminants have migrated to groundwater below the 'shallow aquifer'. (3) Evaluate the potential for contaminants to migrate off site through groundwater below the 'shallow aquifer'.	Hydrogeology, Water Balance
	63	The DQO report appears to conclude that groundwater that may be present beneath the mine wastes does not require investigation. This conclusion is premature as presented. This conclusion must be supported by reliable data. I	Hydrogeology, Water Balance
	64	Stormwater. Section I.A.2.d of the SOW identifies the need for stormwater monitoring.	Storm Water

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
	65	While sampling media including streams in an undisturbed mineralized area would be ideal, it remains to be seen how realistic this ideal is given the history of exploration and mining in the region. The utility of water, sediment and biota sampling from reference streams within volcanic terrain without an historical mine or an undeveloped ore deposit should also be described.	BSA
	66	Ruhenstroth Dam Sediment. No decision rules or other text identify the need to characterize sediment deposits such as those at the Ruhenstroth Dam Site.	DSA, Surface Water and Sediment
	67	Data gaps related to the volume of mine waste, type of mine waste in each of the areas (waste rock, tailings, ore, overburden) are not clearly identified, nor are the investigation techniques necessary to evaluate them (for example field inspection, mine waste sampling, drilling, geophysical surveys). Waste Characteristics. Waste characteristics are described in the SOW as including the (1) Type, quantity and chemical composition of wastes placed in the area, including degradation and reaction byproducts; (2) Physical and chemical characteristics of the waste including mine waste classification in accordance with federal and state regulations; (3) Migration and dispersal characteristics of the waste including: erosion, sorption, biodegradability, acid generating potential, hydrolysis rates and chemical transformations; (4) Biological effects of the waste on revegetation efforts and contaminant uptake potential.	ACSA, LCSA, Storm Water
	68	Unless there is convincing evidence that groundwater is not transmitted through the geologic units at the site, the scope of the groundwater investigation should be broadened.	Hydrogeology, Water Balance
	69	It is not clear that mine waste samples will be collected at depth to evaluate the vertical extent of COCs, assess the chemical and physical (including geotechnical) waste characteristics, and verify waste thickness inferred through other means.	ACSA, LCSA

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
	70	Use of geophysical surveys appears to be restricted in the current document to the Pit Study Area. The DQO Report is unclear as to why geophysical surveys are not extended to the Leviathan and Aspen Creek study areas. Geophysical surveys should be considered for the entire site.	ACSA, LCSA, PSA
	71	Decision rules and scope of sampling descriptions do not describe samples to evaluate the windblown dust pathway. This inconsistency should be resolved by developing decision rules and descriptions of sampling procedures to evaluate exposure to wind blown dust.	Sitewide
	72	The CSM should be revised to show the erosion and sediment deposition pathway. Decision rules should be developed to describe sampling that will evaluate the effects of erosion on surface water and sediment contamination.	ACSA, LCSA, DSA, Storm Water
	73	Seasonal and Annual Contaminant Mass Transport. Specific data gaps should be identified based on evaluation of the existing data, and then appropriate decision rules should be developed to guide additional investigations.	Sitewide, Storm Water, Surface Water and Sediment
	74	The DQO Report should include statements that additional evaluation of decision rules specific to human health risk assessment will occur after data are acquired, and that statistical sampling requirements will be identified to support human health risk assessment.	Sitewide, Section 6
	75	The ponds are not sources of acid drainage. The ponds store acid drainage emitted by sources. If the text is attempting to hypothesize that the ponds are leaking, then a separate sentence should be used to specify this.	LCSA, Water Balance
	76	Decision rules guiding the geotechnical evaluation of the pit highwalls and mine waste slopes are not developed in the DQO Report. At Section I.E the RI SOW identifies the need to review groundwater level data, complete site wide geophysical surveys, visually inspect existing structures, complete subsurface explorations to characterize native material beneath mine wastes and other areas of interest, and assess subsurface mine voids and their interaction and connection with other structures, all in support of geotechnical evaluation of the site.	PSA, Geotechnical

TABLE 44
STAKEHOLDER COMMENTS
TO DATA GAPS
Leviathan Mine Site
Alpine County California

Drawing or Para. No.	No.	Comments	RI Approach Section Where Comment Is Addressed
	77	Existing Evaporation Pond Berms. While specific data gaps related to stability of the ponds are not identified, Decision Rule 5 for the Leviathan Creek Study Area provides for collecting the information needed to evaluate existing evaporation pond berms.	LCSA, Geotechnical
	78	Because management of the mine wastes will need to be addressed in accordance with ARARs, stability of the slopes in mine wastes must be evaluated to support the FS. For example, identifying any areas where cut and/or fill or other engineering methods will be necessary to prevent the failure of slopes and associated hazards to human health and the environment is necessary to evaluate remedies. Appropriate decision rules should be developed to guide preparation of the RI work plan.	LCSA, ACSA, Geotechnical
	79	The decision rules do not include evaluation of the stability of the landslide that extends from the overburden piles to Leviathan Creek within the Aspen Creek Study Area. Sciacca (1984) identified tension fractures in the overburden that appear to indicate that the overburden piles may be affected by movement within the slide mass. Stability of the landslide must be evaluated to support the FS. Appropriate decision rules should be developed to guide preparation of the RI work plan.	ACSA, Geotechnical

TABLE 45
SELECTION OF EXPOSURE PATHWAYS
Leviathan Mine Site
Alpine County, California

Notes	Medium	Exposure Point[1]	Receptor Population	Receptor Age	Exposure Route	On-property/ Off-property [2]	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Groundwater	Groundwater	Trespasser	Adult	Ingestion/Dermal Contact	On-property	None	Incomplete exposure pathway
	On-property Soil	On-property Soil	Trespasser	Adult	Ingestion/Dermal Contact	On-property	Quant	Potentially complete exposure pathway
		Plants	Trespasser	Adult	Ingestion	On-property	Quant	Potentially complete exposure pathway
		Wildlife	Trespasser	Adult	Ingestion	On-property	Quant	Potentially complete exposure pathway
		Ambient Air (Particulates)	Trespasser	Adult	Inhalation	On-property	Quant	Potentially complete exposure pathway
Current	Surface Water	Surface Water	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway
		Aquatic Organisms	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Wildlife	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Plants	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
	Sediment	Sediment	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway
		Aquatic Organisms	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Wildlife	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Plants	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
	Groundwater	Groundwater	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	Off-property	None	Incomplete exposure pathway
	Deposited Soil from Creek Overflow	Soil near Creek	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Ambient Air (Particulates)	Recreational Visitor	Adult/Child	Inhalation	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
	Off-property Soil near Access Roads	Off-property Soil	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Recreational Visitor	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Ambient Air (Particulates)	Recreational Visitor	Adult/Child	Inhalation	Off-property	Quant	Potentially complete exposure pathway, pending additional data

TABLE 45
SELECTION OF EXPOSURE PATHWAYS
Leviathan Mine Site
Alpine County, California

Notes	Medium	Exposure Point[1]	Receptor Population	Receptor Age	Exposure Route	On-property/ Off-property [2]	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Off-property Soil near Access Roads	Off-property Soil	Resident	Adult/Child	Ingestion/Dermal Contact	Off-site	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Resident	Adult/Child	Ingestion	Off-site	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Resident	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
		Ambient Air (Particulates)	Resident	Adult/Child	Inhalation	Off-site	Quant	Potentially complete exposure pathway, pending additional data
Current	Surface Water	Surface Water	Rancher	Adult/Child	Ingestion/Dermal Contact	Off-site	Quant	Potentially complete exposure pathway, pending additional data
		Aquatic Organisms	Rancher	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
		Wildlife	Rancher	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
		Plants	Rancher	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
	Ranch Soil	Ranch Plants	Rancher	Adult/Child	Ingestion	Off-site	Quant	Potentially complete exposure pathway, pending additional data
		Cattle	Rancher	Adult/Child	Ingestion	Off-site	Quant	Potentially complete exposure pathway
		Ranch Soil	Rancher	Adult/Child	Ingestion/Dermal Contact	Off-site	Quant	Potentially complete exposure pathway
		Ambient Air (Particulates)	Rancher	Adult/Child	Inhalation	Off-site	Quant	Potentially complete exposure pathway
	Sediment	Sediment	Rancher	Adult/Child	Ingestion/Dermal Contact	Off-site	None	Incomplete exposure pathway
		Aquatic Organisms	Rancher	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
		Wildlife	Rancher	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
		Plants	Rancher	Adult/Child	Ingestion	Off-site	None	Incomplete exposure pathway
Current	Surface Water	Surface Water	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway
		Aquatic Organisms	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
	Sediment	Sediment	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway
		Aquatic Organisms	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
	Groundwater	Groundwater	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	None	Incomplete exposure pathway

TABLE 45
SELECTION OF EXPOSURE PATHWAYS
Leviathan Mine Site
Alpine County, California

Notes	Medium	Exposure Point[1]	Receptor Population	Receptor Age	Exposure Route	On-property/ Off-property [2]	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Deposited Soil from Creek Overflow	Soil near Creek	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Ambient Air (Particulates)	Washoe Tribe Member	Adult/Child	Inhalation	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
	Off-property Soil near Access Roads	Off-property Soil	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Ambient Air (Particulates)	Washoe Tribe Member	Adult/Child	Inhalation	Off-property	Quant	Potentially complete exposure pathway, pending additional data
Future	Groundwater	Groundwater	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	On-property	None	Incomplete exposure pathway
	On-property Soil	On-property Soil	Recreational Visitor	Adult/Child	Ingestion/Dermal Contact	On-property	Quant	Potentially complete exposure pathway
		Plants	Recreational Visitor	Adult/Child	Ingestion	On-property	Quant	Potentially complete exposure pathway
		Wildlife	Recreational Visitor	Adult/Child	Ingestion	On-property	Quant	Potentially complete exposure pathway
		Ambient Air (Particulates)	Recreational Visitor	Adult/Child	Inhalation	On-property	Quant	Potentially complete exposure pathway
Future	Surface Water	Surface Water	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway
		Aquatic Organisms	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
	Sediment	Sediment	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway
		Aquatic Organisms	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway

TABLE 45
SELECTION OF EXPOSURE PATHWAYS
Leviathan Mine Site
Alpine County, California

Notes	Medium	Exposure Point[1]	Receptor Population	Receptor Age	Exposure Route	On-property/ Off-property [2]	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Groundwater	Groundwater	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
	Deposited Soil from Creek Overflow	Soil near Creek	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Ambient Air (Particulates)	Washoe Tribe Member	Adult/Child	Inhalation	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
	Off-property Soil near Access Roads	Off-property Soil	Washoe Tribe Member	Adult/Child	Ingestion/Dermal Contact	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Plants	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Wildlife	Washoe Tribe Member	Adult/Child	Ingestion	Off-property	Quant	Potentially complete exposure pathway, pending additional data
		Ambient Air (Particulates)	Washoe Tribe Member	Adult/Child	Inhalation	Off-property	Quant	Potentially complete exposure pathway, pending additional data

Notes

1. Specific exposure points will be defined further once data collection and evaluation is complete.

2. This column refers to the location of the exposure. For the purpose of this Work Plan, the Leviathan Mine site is comprised of two general areas: (1) the active portion of the mine property (referred to as “on-property” and defined by the disturbed area of the mine property) and (2) the area beyond the disturbed portion of the property that was actively mined (referred to as “off-property” and defined as all other areas affected by mining activities). There are also two specific off-site areas that are beyond the area defined as the Leviathan Mine site: the River Ranch property and the off-site residential area.

Abbreviations

Quant = Quantitative

TABLE 46

HABITAT TYPES OCCURRING WITHIN THE STUDY AREA

Leviathan Mine Site

Alpine County, California

USDA Ecoregion	CWHR System	Delineated Habitat Types
Jeffrey pine	Jeffrey pine	Forested
Lodgepole pine	Lodgepole pine	
(along margins of wet areas)	Montane hardwood	
Mountain hemlock	Montane hardwood-conifer	
Red fir	Sierran mixed conifer	
White pine	Subalpine conifer	
Whitebark pine	White fir	
	Piñon juniper	
	Aspen	
Big sagebrush	Bitterbrush	Scrub-shrub
Low sagebrush	Montane chaparral	
Sedge meadows and willow	Sagebrush	
(along wet areas)	Low sage	
—	Annual grassland	Grassland
	Pasture	
	Perennial grassland	
Sedge meadows	Wet meadow	Wetland
—	Barren	Barren
—	Lacustrine	Open water
—	Riverine	River

Abbreviations

CWHR = California Wildlife Habitat Relationships

USDA = U.S. Department of Agriculture

TABLE 47

DELINEATED HABITAT TYPES

Leviathan Mine Site
Alpine County, California

Habitat Type	Study Area (acres)				Percentage			
	PSA, LCSA, ACSA	Potential Impact Area[1]	Off-Site Study Area[2]	Total	Mine Operating Units	Potential Impact Area[1]	Off-Site Study Area[2]	Total
Forested	133	38.9	384	556	24%	7%	69%	44%
Scrub-shrub	0	5	243	248	0%	2%	98%	20%
Grassland	24	3.66	197	225	11%	2%	88%	18%
Wetland	0	1.17	3	4	0%	29%	71%	0%
Open water	11	0	1	12	92%	0%	8%	1%
Barren	194	4	13	211	92%	2%	6%	17%
Total	**362**	**53**	**894**	**1,256**				**100%**

Notes
1. 100-foot-wide corridor centered on roads and streams within the study area.
2. Excludes "potential impact areas" within off-site study area.

Abbreviations
ACSA = Aspen Creek Study Area
LCSA = Leviathan Creek Study Area
PSA = Pit Study Area

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site

Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Amphibians and Reptiles														
California newt	CSC			X		X								
Great Basin spadefoot				X	X	X		X				X		
Long-toed salamander	FE, CE, CFP			X	X	X						X		
Mount Lyell salamander	CSC			X	X	X	X					X	X	
Northern leopard frog	CSC, USFWS-S			X	X	X						X		
Pacific chorus frog				X		X	X	X				X		
Sierra Nevada yellow-legged frog	CSC, FC, USFS-S			X	X	X	X					X		
Western toad				X	X	X	X	X				X		
Yosemite toad	CSC, FC, USFS-S			X	X	X	X					X		
California mountain kingsnake	CSC, USFWS-S					X	X					X		
Common garter snake	FE, CE, CFP, CSC					X	X					X		
Common kingsnake						X		X						
Desert horned lizard						X	X	X				X	X	
Gopher snake	CSC					X		X					X	
Long-nosed lizard						X	X							
Night snake						X	X	X				X		
Northern alligator lizard						X		X					X	
Racer						X	X	X						
Rubber boa	CT, USFWS-S					X	X	X				X		
Sagebrush lizard	BLM-S					X		X				X		
Side-blotched lizard						X	X					X		
Striped whip snake						X		X					X	

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Amphibians and Reptiles (continued)														
Western aquatic garter snake						X		X						
Western fence lizard						X	X					X		
Western rattlesnake						X	X	X				X		
Western terrestrial garter snake						X	X	X				X		
Western whiptail														
Fish														
Lahontan cutthroat trout	FT			X	X						X			
Paiute cutthroat trout	FT			X							X			
Rainbow trout				X	X									
Brown trout				X	X									
Mountain/Tahoe sucker	CSC			X										
Paiute sculpin				X										
Mountain whitefish				X										
Lahontan redside shiner				X										
Lahontan speckled dace				X										
Aquatic Invertebrates														
Black fly											X			
Emphids											X			
Mayfly											X			
Midges										X	X			
Mites										X	X			

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Terrestrial Invertebrates														
Insects		X		X										
Snails/slugs		X												
Spiders				X			X	X	X			X	X	X
Worms							X	X	X			X	X	X
Mammals														
Allen's chipmunk							X	X						
American badger	CSC					X	X	X				X	X	
American beaver		X					X					X		
American marten	CSC, USFWS-S				X	X	X					X		
American pika		X					X	X				X	X	
Belding's ground squirrel		X					X	X				X	X	
Big brown bat				X			X	X				X	X	
Black bear			X		X		X					X		
Black-tailed jackrabbit	CSC	X					X	X				X		
Bobcat						X	X	X				X		
Brazilian free-tailed bat				X			X	X				X	X	
Broad-footed mole	CSC		X				X					X		
Brush mouse		X					X	X						
Bushy-tailed woodrat		X					X	X				X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site

Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Mammals (continued)														
California ground squirrel		X					X	X				X	X	
California myotis				X			X	X				X	X	
Canyon mouse		X						X						
Common muskrat		X										X		
Common porcupine		X					X	X				X		
Coyote			X		X	X	X	X				X	X	
Deer mouse	CSC	X					X	X	`			X	X	
Douglas squirrel		X					X							
Dusky shrew			X				X					X		
Ermine					X	X	X					X		
Fisher	CSC, FC, BLM-S, USFWS-S				X	X	X							
Fringed myotis	BLM-S			X			X	X					X	
Golden-mantled ground squirrel		X					X	X				X		
Gray fox					X	X	X	X				X		
Great basin pocket mouse	BLM-S	X						X						
Heather vole		X					X					X		
Hoary bat				X			X	X				X		
House mouse		X						X				X		
Least chipmunk		X					X	X						
Little brown bat				X			X	X				X	X	
Lodgepole chipmunk	USFWS-S	X					X							

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Mammals (continued)														
Long-eared myotis	BLM-S			X			X	X				X	X	
Long-legged myotis				X			X	X				X	X	
Long-tailed vole		X					X	X				X		
Long-tailed weasel						X	X	X				X		
Merriam's shrew			X					X						
Montane vole		X					X	X				X		
Mountain cottontail		X						X						
Mountain lion	CSC					X	X	X				X		
Mountain pocket gopher		X					X	X				X		
Mountain beaver	FE, CSC	X					X					X		
Mule deer		X					X	X				X		
Northern river otter	CSC, BLM-S				X					X		X		
Northern flying squirrel	CSC, USFWS-S						X							
Northern grasshopper mouse		X						X				X		
Northern pocket gopher		X					X	X				X		
Ord's kangaroo rat		X						X						
Pallid bat	CSC, BLM-S			X			X	X				X	X	
Pinyon mouse		X						X				X		
Pygmy rabbit	CSC, BLM-S	X						X						
Raccoon			X		X		X	X				X		
Red fox	CT, USFWS-S				X	X	X	X				X	X	
Ringtail	CFP		X		X	X	X	X				X	X	

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site

Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Mammals (continued)														
Silver-haired bat				X			X					X	X	
Snowshoe hare	CSC	X					X							
Spotted bat	CSC, BLM-S			X			X	X				X		
Striped skunk			X				X	X				X		
Townsend's big-eared bat	CSC, BLM-S			X			X	X				X	X	
Townsend's squirrel		X						X						
Vagrant shrew	CSC		X				X					X		
Water shrew			X				X					X		
Western gray squirrel		X					X							
Western harvest mouse		X					X	X				X		
Western jumping mouse		X					X	X				X		
Western pipstrelle				X			X	X				X	X	
Western small-footed myotis	BLM-S			X			X	X				X	X	
Western spotted skunk	CSC		X				X	X				X		
White-tailed jackrabbit	CSC	X					X	X				X		
White-tailed squirrel		X						X						
Wolverine	CT, CFP, USFWS-S					X	X					X		
Yellow-bellied marmot		X					X	X				X	X	
Yellow-pine chipmunk		X					X	X						
Yuma myotis	BLM-S			X			X	X				X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds														
American coot		X								X		X		
American goldfinch		X					X					X		
American kestrel				X			X							
American pipit		X		X				X				X	X	
American redstart				X			X	X						
American robin		X		X			X					X		
American widgeon		X								X		X		
Baird's sandpiper				X						X		X		
Band-tailed pigeon				X			X					X	X	
Barn swallow				X				X				X	X	
Belted kingfisher		X		X								X		
Black swift	CSC			X			X	X						
Black-backed woodpecker		X		X			X							
Black-billed magpie		X								X		X		
Black-chinned sparrow				X						X		X		
Black-headed grosbeak				X						X		X	X	
Black-throated gray warbler				X			X	X				X		
Brewer's blackbird				X			X	X				X		
Brewer's sparrow		X		X				X						
Brown creeper		X		X			X							
Brown-headed cowbird				X			X							

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Bufflehead		X					X							
Bullock's oriole							X	X				X		
Bushtit		X		X			X	X				X		
California gull		X		X				X				X		
California quail	CSC			X			X							
Calliope hummingbird		X		X			X	X				X		
Canada goose				X			X							
Canyon wren		X		X			X							
Cassin's finch						X	X							
Cassin's vireo				X				X						
Cedar waxwing				X								X	X	
Chipping sparrow		X						X				X		
Chukar		X		X			X					X		
Cinnamon teal		X								X		X		
Clark's nutcracker				X									X	
Cliff swallow				X			X							
Common merganser		X					X			X				
Common poorwill		X					X							
Common raven					X	X				X		X		
Common yellowthroat	CSC	X		X			X					X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Dark-eyed junco		X						X						
Downy woodpecker		X								X		X		
Dusky flycatcher		X		X			X					X		
European starling				X				X				X	X	
Evening grosbeak		X					X	X				X		
Forster's tern				X			X	X				X	X	
Fox sparrow				X								X		
Gadwall		X		X			X	X				X		
Golden-crowned kinglet				X			X					X		
Golden-crowned sparrow				X			X							
Gray flycatcher		X					X	X				X		
Gray-crowned rosy-finch						X	X	X				X	X	
Greater sage grouse	CSC, BLM-S			X										
Green-winged teal		X		X			X	X						
Green-tailed towhee		X		X			X							
Great blue heron	CDF-S			X			X							
Hairy woodpecker				X			X							
Harris's sparrow		X		X			X	X				X		
Hermit thrush		X		X				X				X		
Hermit warbler		X								X		X		
Herring gull		X					X	X						

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Horned lark				X			X							
House finch						X	X							
House wren		X		X			X	X				X		
Indigo bunting		X					X	X						
Juniper titmouse				X			X	X						
Killdear				X			X							
Lazuli bunting				X									X	
Lesser goldfinch		X		X			X					X		
Lesser scaup				X				X				X	X	
Lewis's woodpecker				X			X					X		
Lincoln's sparrow		X		X			X	X				X		
Loggerhead shrike	FE, CSC	X		X			X	X				X		
MacGillivray's warbler				X								X	X	X
Mallard		X		X			X	X				X		
Marsh wren	CSC			X						X		X		
Mountain bluebird				X			X	X				X		
Mountain chickadee		X		X			X					X		
Mountain quail				X			X	X				X	X	
Mourning dove				X			X					X		
Nashville warbler		X								X		X		
Northern flicker				X								X		
Northern pintail				X			X	X				X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Northern rough-winged swallow				X			X							
Northern shoveler		X					X	X				X		
Northern shrike		X					X	X				X		
Olive-sided flycatcher	CSC			X			X							
Orange-crowned warbler				X			X	X				X		
Pileated woodpecker		X		X						X		X		
Pine grosbeak					X	X				X		X	X	
Pine siskin		X		X				X				X		
Pinyon jay				X	X	X		X				X	X	
Plumbeous vireo				X						X		X		
Purple finch					X	X	X	X				X	X	
Pygmy nuthatch				X			X	X				X		
Red crossbill						X	X	X				X	X	
Red-breasted nuthatch				X										
Red-breasted sapsucker				X			X							
Red-naped sapsucker				X			X							
Red-winged blackbird	CSC	X		X			X							
Ring-billed gull				X			X							
Ring-necked duck		X		X			X							
Ring-necked phalarope		X		X			X							
Rock wren		X		X			X							
Ruby-crowned kinglet		X		X			X							
Rufous hummingbird		X		X								X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Savannah sparrow	CE, CSC			X								X		
Sooty grouse	CSC	X		X						X		X		
Snowy egret				X			X							
Song sparrow	CSC			X								X		
Sora				X				X					X	
Spotted sandpiper				X			X	X						
Spotted towhee	CSC	X		X			X					X		
Stellar's jay		X		X	X	X		X		X		X		
Swainson's thrush		X		X			X	X						
Townsend's solitaire		X		X			X					X		
Tree swallow		X		X						X		X		
Tundra swan				X								X	X	
Vaux's swift	CSC	X					X	X						
Violet-green swallow		X		X			X							
Virginia rail		X		X			X							
Warbling vireo		X		X			X							
Western bluebird				X				X	X			X		
Western kingbird		X								X		X		
Western meadowlark				X			X					X		
Western tanager				X			X	X				X	X	
Western wood-pewee				X						X		X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site

Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
White-breasted nuthatch				X										
White-crowned sparrow				X			X					X		
White-headed woodpecker				X				X				X		
White-throated sparrow		X		X			X	X				X		
White-throated swift		X		X			X							
Wild turkey		X		X			X							
Williamson's sapsucker		X		X			X							
Willow flycatcher	FE, CE, USFWS-S	X		X			X	X				X		
Wilson's phalarope				X			X							
Wilson's snipe		X		X			X	X				X		
Wilson's warbler				X			X	X				X	X	
Winter wren		X		X			X					X		
Wood duck		X		X			X							
Yellow warbler				X			X							
Yellow-headed blackbird	CSC			X								X		
Yellow-rumped warbler	CSC			X								X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site

Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Bald eagle	CE, CFP, CDF-S				X	X	X	X				X		
Barn owl						X		X				X	X	
Burrowing owl	CSC, BLM-S					X	X	X				X	X	
Common nighthawk						X						X		
Cooper's hawk						X	X							
Ferruginous hawk	BLM-S				X	X	X	X				X		
Flammulated owl						X		X				X	X	
Golden eagle	CFP, BLM-S, CDF-S					X	X	X				X		
Great gray owl	CE, USFWS-S, CDF-S					X	X	X				X	X	
Great horned owl					X	X	X	X				X	X	
Long-eared owl	CSC					X	X							
Merlin						X	X	X						
Northern goshawk	CSC, BLM-S, USFWS-S, CDF-S					X								
Northern harrier	CSC					X	X	X				X		
Northern pygmy owl						X		X				X	X	
Northern saw-whet owl						X	X	X				X	X	
Osprey	CDF-S					X	X					X		
Peregrine falcon	CE, CFP, USFWS-S, CDF-S					X	X	X						
Prairie falcon						X	X	X				X		
Red-tailed hawk						X	X	X				X	X	
Rough-legged hawk					X	X	X	X				X		

TABLE 48

ANIMAL SPECIES POTENTIALLY PRESENT AND THEIR PREFERRED HABITAT[1,2]

Leviathan Mine Site
Alpine County, California

Common Name	Status	Feeding Guild					Preferred Habitat							
		Herbivore	Omnivore	Insectivore	Piscivore	Carnivore	Forest	Scrub-Shrub	Grassland	Open Water	River/Stream	Wet Meadow	Barren	Agriculture
Birds (continued)														
Sharp-shinned hawk					X	X	X	X				X	X	
Spotted owl	FT, CSC, BLM-S, USFWS-S, CDF-S					X	X	X				X	X	
Turkey vulture						X	X							

Notes

1. Sources: CDFG, 2008; CDFG and CIWTG, 2008.
   CDFG (California Department of Fish and Game), 2008, California Natural Diversity Database: CDFG, Sacramento.
   CDFG and CIWTG (California Interagency Wildlife Task Group), 2008, California Wildlife Habitat Relationships System Personal Computer Program, Version 8.2: CDFG, Sacramento.
2. Highlighted cells = Animals with known toxicity reference values.

Abbreviations

BLM-S = BLM sensitive
CDF-S = California Department of Fish and Game sensitive
CE = California endangered
CFP = California fully protected
CSC = California species of special concern
CT = California threatened
FC = federal candidate
FE = federally endangered
FT = federally threatened
USFS-S = U.S. Forest Service sensitive
USFWS-S = U.S. Fish and Wildlife Service sensitive

TABLE 49

RECEPTOR EXPOSURE PARAMETERS [1,2]

Leviathan Mine Site
Alpine County, California

Receptor	Average Adult Body Size (g)	Feeding Guild	Average Home Range (ha)	Average Ingestion Rate		Average Inhalation Rate (m^3/day)	Average Surface Area (cm^2)
				Food (g/g-day)	Water (g/g-day)		
Mammals							
Deer mouse	21	Herbivore	0.06	0.27	0.19	0.02	89
Mule deer [3]	96,500	Herbivore	200	0.02	0.06	21.1	22,500 [4]
Northern river otter	7,406	Piscivore	333	0.16	0.44	2.7	4,033
Red fox	4,535	Carnivore	1,038	0.11	0.09	1.9	2,990
Raccoon	5,598	Omnivore	630	0.07	0.08	2.32	3,605
Birds							
Canada goose	3,237	Herbivore	496	0.03	0.04	0.92	2,005
Mallard	1,016	Herbivore	435	0.14	0.06	0.45	1,089
American robin	81	Insectivore	0.25	1.21	0.14	0.06	190
Bald eagle	4,151	Piscivore	2,401	0.10	0.04	1.31	2,750
Red-tailed hawk	1,134	Carnivore	672	0.36	0.06	0.45	1,084
Fish							
Lahontan cutthroat trout	3,000	Piscivore					
Mountain whitefish	2,705	Insectivore					
Amphibians and Reptiles							
Green frog*	47	Carnivore	0.01				16
Racer	122	Carnivore	2.4	0.02			910

Notes

1. Source: EPA, 1993, Wildlife Exposure Factors Handbook: U.S. Environmental Protection Agency, Office of Research and Development, EPA/600/R-93/187a, Washington, D.C.
2. Highlighted cells = To be determined
3. Source: Misuraca, M., 1999, *Odocoileus hemionus* : University of Michigan, Museum of Zoology, Ann Arbor, http://animaldiversity.ummz.umich.edu/index.html (accessed April 16, 2009).
4. Source: Parker, K.L., 1987, Body-surface measurements of mule deer and elk: Journal of Wildlife Management, v. 51, pp. 530-633.

Abbreviations

cm^2 = square centimeter
g = grams
g/g-day = grams per gram of body weight per day
ha = hectare
m^3/day = cubic meters per day

TABLE 50

PROPOSED SAMPLE COLLECTION SCHEMATIC
Leviathan Mine Site
Alpine County, California

Habitat Type	Study Area			
	PSA, LCSA, ACSA	Potential Impact Area		Background Area
		Roadside	Riparian	
Forested	Plant Soil	Plant Soil	Plant Floodplain soil/sediment	Plant Soil
Scrub-shrub	Plant Soil	Plant Soil	Plant Floodplain soil/sediment	Plant Soil
Grassland	Plant Soil	Plant Soil	Plant Floodplain soil/sediment	Plant Soil
Barren	Soil	Soil	Floodplain soil/sediment	Soil
Open water	Plant Sediment	Habitat type nonexistent here	Habitat type nonexistent here	Plant Sediment
Stream	Plant Sediment Fish Bioassay	Plant Sediment Fish Bioassay	Floodplain soil/sediment	Plant Sediment Fish Bioassay

Abbreviations
ACSA = Aspen Creek Study Area
LCSA = Leviathan Creek Study Area
PSA = Pit Study Area

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description
Tier 1[1] Priority		
BG-1	Groundwater Background	Background conditions in groundwater will be evaluated by collecting groundwater samples from monitoring wells located in areas not affected by mining but completed in geologic materials with chemical characteristics similar to those observed at the site.
BG-2	Soil Background	Background conditions in surface soils will be evaluated by collecting soil samples in undisturbed portions of the site and/or in off-site areas with similar soil types.
BG-3	Surface Water and Sediment Background	Background conditions in surface water and sediment will be evaluated by collecting co-located surface water and sediment samples in areas upgradient of the disturbed portion of the site and/or in analog watersheds with similar geologic characteristics.
WB-1	Meteorological Monitoring	A meteorological station will be established at the site to be used in conjunction with data from the SNOTEL monitoring location at Monitor Pass.
HY-1	Well Reconnaissance, Redevelopment, and Sampling	A field reconnaissance will be conducted to locate and redevelop existing monitoring wells. This activity will include a limited monitoring program that will be conducted until the sitewide hydrogeology is defined and a more complete groundwater monitoring system is installed at the site.
HY-2	Deep Exploratory Borings	Deep exploratory borings will be conducted using mud rotary, air percussion, sonic drilling, or similar techniques at a number of locations across the site to develop a better understanding of the subsurface lithology, hydrostratigraphy, depth of overburden and/or waste rock materials, in situ groundwater quality, and other subsurface geologic characteristics that may influence groundwater flow and chemical migration (e.g., the presence of calcite-bearing rocks).
SW-1	Surface Water Delineation	Reconnaissance and mapping of streams, seeps, and ponds will be conducted to clearly delineate surface water bodies and surface water contributions to Leviathan Creek from upstream at Station 1 to the confluence of Leviathan and Barney Riley creeks.

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description
Tier 1[1] Priority (continued)		
SW-2	Sediment Mapping	Concurrent with the physical mapping of surface water bodies, sediments will be evaluated and mapped.
SS-1	Reconnaissance Mapping of Erosional Features	Given the limited information on storm water and snowmelt runoff at the site, reconnaissance mapping of erosion features is proposed to identify areas where runoff may be occurring.
ACSA-1	Soil Mapping, Sampling, and Chemical Analyses	The RI will include field reconnaissance and mapping of soil types on the overburden piles to identify areas with the greatest acid generation potential. Based on information gathered during this mapping effort, a soil sampling program for chemical analysis will be implemented.
ACSA-2	Investigation of Mine Features	Mine features that warrant investigation in the ACSA consist primarily of overburden and waste rock piles. The physical characteristics will be confirmed.
ACSA-3	Source Investigation of Aspen Seep	This task includes an investigation (to assess Aspen Seep Bioreactor pond leakage) of the source of flow to and from the Aspen Seep by assessing the shallow groundwater flow system in the area upslope and lateral to the present location of the Aspen Seep.
PSA-1	Soil Mapping, Sampling, and Chemical Analyses	This task includes field reconnaissance and mapping of soil types on the overburden piles and a soil sampling program.
PSA-2	Investigation of Mine Features	The mine features in the PSA will be investigated and the physical characteristics will be confirmed.
PSA-3	Investigation of Sources to the Pit, PUD, and Adit	The RI program will include an investigation of the source of flow to the Pit, PUD, and Adit, including an assessment of the shallow groundwater flow system in the vicinity of the Adit and the floor of the Pit.
LCSA-1	Soil Mapping, Sampling, and Chemical Analyses	The proposed scope of this task includes field reconnaissance and mapping of soil characteristics of waste rock materials (including seeps) in the LCSA to identify areas with the greatest acid generation potential.

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description
Tier 1[1] Priority (continued)		
LCSA-2	Investigation of Mine Features	Original mine features in the LCSA will be investigated.
LCSA-3	Investigation of Sources to the CUD and DS	The RI program for the LCSA will investigate the source of flow to the CUD and DS by conducting an assessment of the shallow groundwater flow system in the area upslope from the CUD and DS.
DSA-1	Soil Mapping, Sampling, and Chemical Analyses	Surface soil mapping, sampling, and chemical analyses for COPCs will be performed in the floodplains of Leviathan, Aspen, and Upper Bryant Creeks and along Leviathan Mine Road.
Tier 2[2] Priority		
BG-4	Plant and Fish Tissue Background	Background conditions in biological media will be evaluated by first defining habitat types that are representative of conditions at background areas consisting of undisturbed areas of the site and/or in off-site reference areas with similar habitat types.
WB-2	Streamflow Measurements	Additional streamflow measurements in stream reaches adjacent to the site will be collected to better characterize those segments that are gaining and losing under various conditions, including seasonal fluctuations.
WB-3	Measurement of Surface Water/Groundwater Interactions	The addition of tracers to streams, synoptic sampling, mini-piezometers or well points may be installed along stream segments.
BIO-1	Plant Sampling	Soil samples in each habitat type will be collected and analyzed.
BIO-2	Habitat-Related Soil Sampling	Soil samples in each habitat type will be collected and analyzed.

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description
Tier 2[2] Priority (continued)		
HY-3	Monitoring Well Installation and Hydraulic Testing	Monitoring wells will be constructed in the boreholes using the well construction protocols described in the SOPs. After monitoring wells have been installed and appropriately developed, wells will be hydraulically tested with an appropriate method (e.g., using single-well slug or pressure-pulse tests) to estimate the hydraulic properties of the subsurface materials.
SS-2	Storm Water and Snowmelt Monitoring	This task consists of storm water and snowmelt monitoring.
ACSA-4	Shallow Groundwater Investigation	It is anticipated that a number of shallow groundwater monitoring wells will be installed near the interface between the overburden and underlying bedrock. Monitoring wells will be developed and tested following completion.
ACSA-7	Storm Water and Snowmelt Runoff Investigations	Storm water and snowmelt runoff investigations in the ACSA will be performed in association with the sitewide storm water investigations.
ACSA-8	Water Balance Studies	Inflow and outflow components to the water balance in the ACSA will be refined in association with the sitewide water balance studies.
PSA-4	Shallow Groundwater Investigation	It is anticipated that a number of shallow groundwater monitoring wells will be installed in the PSA.
PSA-6	Water Balance Studies	Inflow and outflow components to the water balance in the PSA will be refined in association with the sitewide water balance studies.
PSA-7	Storm Water and Snowmelt Runoff Investigations	Storm water and snowmelt runoff investigations in the PSA will be conducted in association with the sitewide investigations.
LCSA-5	Shallow Groundwater Investigation	It is anticipated that several shallow groundwater monitoring wells may be installed near the interface between the waste piles and underlying bedrock.

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description
Tier 3[3] Priority		
LCSA-7	Water Balance Studies	Inflow and outflow components to the water balance in the LCSA will be refined in association with the sitewide water balance studies.
LCSA-9	Storm Water and Snowmelt Runoff Investigations	Storm water and snowmelt investigations in the LCSA will be conducted in association with the sitewide investigations described above.
BIO-3	Fish Tissue Sampling	The collection of composite whole-body fish tissue samples is proposed at existing sediment and water quality sampling stations located in Leviathan, Aspen, and Mountaineer creeks, and the headwaters of Bryant Creek.
BIO-4	Habitat-Related Sediment Sampling	Sediment samples will be collected for analysis of COPCs and for conducting sediment bioassays.
BIO-5	Habitat-Related Surface Water Sampling	Surface water samples will be collected at all sediment sampling locations and will be analyzed for COPCs and conventional parameters (e.g., alkalinity, hardness, pH, and dissolved oxygen).
HY-4	Groundwater Monitoring	Water levels will be measured on a regular schedule or using transducers and data logging equipment, and groundwater samples will be collected on a minimum semiannual basis during the spring and fall seasons.
SW-3	Surface Water Geochemical Characterization	This investigation consists of the surface water characterization task.
SW-4	Sediment Geochemical Characterization	Sediment sampling will be conducted within Aspen, Leviathan, and upper Bryant Creeks.
ACSA-5	Biological Investigations	Biological investigations in the ACSA will be focused on potential exposure pathways to ecological receptors outlined in the ecological risk CSM.
ACSA-6	Surface Water and Sediment Sampling in Aspen Creek	Surface water and sediment sampling activities in Aspen Seep will be performed as described in the sitewide program for surface water/sediment and biological investigations.

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description
Tier 3[3] Priority (continued)		
PSA-5	Biological Investigations	Biological investigations in the PSA will be performed in association with the sitewide biological investigations described.
LCSA-4	Investigation of Ponding near Leviathan Creek	Similar to the investigation of other source areas, an assessment will be conducted of the shallow groundwater flow system surrounding the pond, including the area adjacent to Leviathan Creek.
LCSA-6	Surface Water and Sediment Sampling in Leviathan Creek	This task includes surface water and sediment sampling in the LCSA.
LCSA-8	Biological Investigations	Biological investigations in the LCSA will be focused on potential exposure pathways to ecological receptors outlined in the CSMs.
DSA-2	Surface Water and Sediment Sampling	Downstream surface water and sediment sampling in the DSA will be performed in association with the sitewide surface water and sediment investigations described above.
DSA-3	Biological Investigations	Biological investigations in the DSA will be focused on potential exposure pathways to ecological receptors outlined in the CSMs.
GT-1	Visual Inspection and Evaluation	A visual inspection and assessment of existing engineered structures, overburden and waste rock piles, pit high walls, and landslide areas will be performed to identify potential problem areas and evaluate the need for further geotechnical investigations or mitigative measures.
GT-2	Investigation for Storage Pond Expansion	Additional geotechnical work may be necessary to assess geotechnical considerations for raising impoundment berms or deepening the impoundments to increase storage capacity. This task may move up in the prioritization if deemed necessary in order to develop and analyze options under the Focused Feasibility Study Work Plan for capture and storage of winter flows from the CUD and DS.

TABLE 51
RI/FS TASK PRIORITIZATION
Leviathan Mine Site
Alpine County, California

Task ID	Name	Description

Notes

1. Tier 1 Priority—These activities include initiation of the background study, investigation and confirmation of mine features and reconnaissance and mapping activities necessary as prerequisites to more intrusive investigations to follow.

2. Tier 2 Priority—These activities include second phase and more intrusive investigation work based in most cases on the results of work conducted in Tier 1. The water balance data collection, storm water sampling, source investigation work and the installation of the groundwater monitoring system are Tier 2 activities.

3. Tier 3 Priority—These activities consist of bioassessments and surface water and sediment investigation and investigation of any remaining sources. This would be the point in the process to assure that all of the data requirements of the RI and the risk assessment have been met. In the later part of Tier 3 as necessary to begin to assess applicable and/or relevant and appropriate requirements (ARARs), geotechnical investigations may be conducted.

Abbreviations

ACSA = Aspen Creek Study Area
BG = Background Investigation
BIO = Biological Investigation
COPCs = chemicals of potential concern
CSM = conceptual site model
CUD = Channel Underdrain
DS = Delta Seep
DSA = Downstream Study Area
GT = Geotechnical Investigation
HY = Hydrogeologic Investigation
LCSA = Leviathan Creek Study Area
PSA = Pit Study Area
PUD = Pit Underdrain
RI = remedial investigation
SOPs = Standard Operating Procedures
SS = Surface Soil Investigation
SW = Surface Water Investigation
WB = Water Balance Investigation