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Forest Service
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File Code: 2540
Date: April 22, 2013

Mr. Steve Rosenbaum
California Regional Water Quality Control Board-
Central Valley Region
11020 Sun Center Drive, Suite #200
Rancho Cordova, CA 95670-6114

Dear Mr. Rosenbaum:

Attached please find a complete set of 2012 water quality monitoring reports by the U.S. Department of Agriculture, Forest Service, Plumas National Forest, for the Walker Mine Tailings in Plumas County, California. The four reports are (1-3) Quarterly Monitoring Reports for May, July, and September 2012 and (4) the Annual Monitoring Report for 2012.

Results of the 2012 sampling shows a slight decrease in pollutants early in the year, when compared to the 2011 results, and as the flow generated by the snow melt subsided across the tailings a marked decrease in pollutants was also observed and recorded in the subsequent testing periods. The reduction in pollutants that followed the runoff is the expected result of construction of the Dolly Creek diversion structure and channel separating the surface flow from the tailings material. Copper remains the pollutant of concern and the sample results indicate that significant levels of copper continue entering Dolly Creek from the Walker Mine Site.

All field sampling and testing was performed by Sierra Environmental of Quincy, CA and water samples were then analyzed by Fruit Growers Laboratories in Chico, CA.

Please call Ryan Nupen of this office at (530) 283-7712 if you have any questions.

Sincerely,

Earl Ford

Earl Ford

Forest Supervisor
Plumas National Forest

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ANNUAL MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Monitoring Period: Calendar Year 2012

Findings:

(1) Surface Water. Samples were collected in May, July and September 2012. Adjusting for hardness at the compliance station on Little Grizzly Creek (R-5), the calculated limitation for dissolved copper for the three sampling periods ranged from 0.003 ~~ug/L~~ mg/L to 0.037 ~~ug/L~~ mg/L for the month of May. Lab error prevented analysis below 10 ug/L for copper not 10, 5 for the sampling periods of July and September. The limitation for copper, 10 ug/L, set in Waste Discharge Requirements Order No. 5-00-028 was not exceeded during the yes it was sampling period of May (the average dissolved copper concentration at R-5 was .040~~ug/L~~ mg slightly down from an average of 0.043~~ug/L~~ mg in 2011). The limitations for zinc were not detected in the R-5 samples collected. It's the first time in the last 3 years that it was not detected. The limitations for iron were not detected at R-2 Surface water.

Copper does not appear to be seeping out of the tailings because in 2007 and 2008 the average copper concentrations at R-3 were (4.3 ug/L and 0.9ug/L) and R-4 (5.2ug/L and 3.2ug/L) Low concentrations of dissolved copper were detected at R-3, the background station on Little Grizzly Creek, and R-4, Little Grizzly Creek above the confluence with Dolly Creek, during two of the three sampling events (see Table 1 and attached Map). After 2009 we started to dump Dolly creek between R-3 and R-4. Reviewing the 98 copper testing results from 1991 to present for R-3 and R-4 indicates no significant trends. The average dissolved copper concentration for the two sites over this period is very different (0.0028 ug/L for R-3 and 0.0035 ug/L for R-4). Copper concentrations above the laboratory detection limits were found in the waters of Little Grizzly Creek above the confluence with Dolly Creek just 38% (R-3) and 40% (R-4) of the time. Only 39% of the sampling events show higher dissolved copper concentrations at R-4 than at R-3 and about half the time that copper is detected at R-3 it is not detected at all downstream at R-4. There remains little concrete explanation for the detection of copper at the R-3 station. The only apparent contamination of Little Grizzly Creek at that location is the occasional drift of tailings material blown by the wind into this upstream area. Even with this minor contamination pathway, it does not seem plausible that concentrations of copper in samples taken at R-3 could be detected.

In all of the three sampling events (May, July and September) dissolved copper was found at R-1 during May only, due to a laboratory error copper was not detected above 10ug/L during the July and September events at the Dolly Creek above the tailings area but may have been present in lower concentration. The concentrations of copper

that were properly analyzed did not exceed the limitations established for freshwater aquatic life protection.

The reduction in copper concentrations between stations R-2 and R-5, the compliance station on Little Grizzly Creek – presumably due to dilution - was 94.4% in May and 92.1% in July. There was no flow at R-2 during the September. According to the California DWR Northern Sierra Precipitation for 2012 was above average, Table 3 displays flow rates for the sampling periods from 1991 through 2012.

(2) Groundwater. Groundwater samples were collected from three monitoring wells (W-3, W-5 and W-7) in July and September of 2012 (see attached map). A summary of the groundwater test results for sampling performed in 1994, 1995, 2000-2004, 2007-2012 is presented in Table 4 (samples were not collected from 1996-1999 or 2005-2006.

Copper, and iron were detected in W-3 during the sampling of July period. There was also a notable decrease in dissolved iron in W-5 where the July test result were 24.4ug/L in 2011 and 9.37ug/L In 2012. In well W-7 the analysis done in July showed that it had no copper, iron, or zinc detected in it.

The detection of dissolved iron has been relatively common in most of the wells. For the 79 samples analyzed for iron from 2000 to 2004, and 2007-2012, iron was detected in 49 samples (62% detection). The mean and median dissolved concentrations for samples with detected iron are 4.76mg/L and 0.675mg/L (respectively). The median falls well below the prescribed water quality limitation at R-5 of 1000 ug/L but the mean was greatly increased due to the unexpectedly high laboratory results for W-5 in 2007, 2008 , 2009 , 2010 and 2011this coincided with an increase of iron in W-7 the background well. For zinc, the mean and median detected dissolved concentrations are 1673.3 ug/L and 5.5 ug/L with a maximum detected concentration of 60.0 ug/L. All of these values are well below the prescribed limitation for zinc which is 66 ug/L. Zinc concentrations are dependent upon the measured water hardness, which averaged 67.2 mg/L as CaCO3 for the 2000-2004 and 2007-2008 surface water samples at R-5 (with a median of 75 mg/L as CaCO3). Another way in which the presence of zinc can be predicted is by looking at the presence of copper at Walker Mine Tailings. Because of the physical similarities between copper and zinc and given the overall water quality records at this site, the presence of zinc when copper is present is 82% of the time.

Well W-7 is situated upgradient and off of the tailings site and is used as the background well. When compared with W-7 sample results, dissolved iron and zinc concentrations detected in downgradient wells W-3 and W-5 (both wells situated on the tailings) do not demonstrate an increase in the concentration of these metals as groundwater passes through the tailings material. For zinc, an increased downgradient concentration was observed in just 1 of the 20 sample events conducted from 2000 to 2004. For iron, an increased downgradient concentration in W-3 or W-5 is documented in just 4 of the 20 events.

In analyzing the groundwater sample results for copper, it is best to look closely at the samples collected between 2002 to 2004 and 2007 to 2011. These samples were

analyzed using methods and instrumentation that allowed a very sensitive detection level of 1.0 ug/L or less (the 2000 samples were analyzed with a detection level of 5.0 ug/L and the 2001 detection level was 10 ug/L).This year a laboratory error prevented us from going that low for the sampling months of July and September.

Additionally, only one of the 30 groundwater samples collected between 2000 and 2004 resulted in a dissolved copper concentration of more than 5.0 ug/L (the detection level used for the 2000 analyses). The sample at W-3 for September 2001 resulted in a dissolved copper concentration of 12 ug/L. Well W-3 is situated on the tailings very close to the Dolly Creek channel. The well-documented high concentrations of dissolved copper in the Dolly Creek surface water are a likely source for the elevated copper concentration in this groundwater sample.

As stated above, the low levels of dissolved copper were observed in forty-four of the seventy- nine samples taken in 1994 to 1995 and 2000 to 2012 from the groundwater. Of the seventy-nine instances thirty-two were under 3.4 ug/L. Moreover, a trend of increasing copper concentration as groundwater flows through the tailings is not demonstrated by the well data. For dissolved copper, an increased downgradient concentration in wells W-3 and W-5, when compared with the background well W-7, was observed in 10 of the 27 sample events conducted from 2002 - 2004 and 2007 - 2012. This 37% trend indicates – as do the rest of the groundwater metal data – that low groundwater copper concentrations are distributed practically at random across the tailings pile.

From September 2007 to present, copper concentrations have varied in W-5 it was present in 7 of the 12 samples. Copper concentrations has also varied in W-7 since September of 2007 to September 2009. Copper concentrations were not detected in well W-7 for 2010 and 2012. It is hypothesized that during diversion of Dolly Creek and construction of the new lined channel the copper may have been mobilized locally by vibration and/or compaction of the strata that decreased pore space or caused pumping that disturbed the groundwater and temporarily increased the concentrations.

With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards Little Grizzly Creek all along its course with the tailings area. These site conditions indicate that the potential exists for contamination of Little Grizzly Creek due to groundwater seeping from the tailings pile.

The result of previous sampling has not indicated any significant trends for dissolved metal concentrations entering little Grizzly Cr. Additionally, despite the almost continuous line of groundwater seeps along the base of the tailings area and the Little Grizzly Creek channel bank, the metals concentration results are nearly identical (as discussed above) for samples taken from Little Grizzly Creek above and below the tailings interface (at R-3 and R-4, both upstream of the confluence with Dolly Creek).

One can basically conclude that even though copper and zinc are present in the tailings material throughout the site, they are not entering into solution (except in surface water along the Dolly Creek channel). This is confirmed by the surface water-sampling program, in which samples taken at the base of the tailings in Little Grizzly Creek (R-4) generally indicate that these constituents are at non-detectable levels. It's only after Little Grizzly Creek mixes with Dolly Creek that soluble copper and zinc are detected.

Therefore, the groundwater pathway is demonstrated to be a decidedly unlikely pathway for tailings pollution on Little Grizzly Creek. The Forest Service will continue to monitor groundwater metals concentrations in wells W-5 and W-7 due to increased iron concentrations.

The water level in each well was measured in 2012 during each of the three sampling events. Maps displaying the groundwater flow gradient and direction were produced for each event (attached). Generally, the groundwater in the tailings area drains in two directions, towards the tailings dam near the end of Dolly Creek and towards the settling pond near R-6. The groundwater gradient steepens by the end of the summer season, dropping nearly five feet at the dam and ten feet at the settling pond.

Table 5 lists the measured groundwater depths for the years in which this data has been collected (2000 - 2012). Groundwater elevations at W-3 are important to look at from the standpoint of the proposed anaerobic wetland. The depth to groundwater at W-3 averages 5.38 feet and the seasonal water table drop is typically about two feet. With the surface flow from Dolly Creek no longer contributing to the recharge of groundwater in the tailings it is expected that summer and fall groundwater levels will continue to drop at this location.

In September and October of 2009 the Dolly Creek inlet structure was retrofitted to remedy leakage and loss of surface flow. The retrofit included installation of a concrete settling basin and concrete outlet trough attached to the existing lined channel. Both additions were placed on a low permeability fill. The result of this retrofit is the capture of all surface flow and interception of some shallow groundwater. Results were immediate with a substantial reduction in flow from the toe of the inlet structure spillway and the simultaneous loss of flow over the tailings dam spillway at R-2.

(3) Channel Substrate Analysis (Pebble Count). One of the measured changes that should occur as a result of rehabilitating the tailings area is a decreased transport of tailings material to Little Grizzly Creek. Though most of the material moves during times of high flows when sampling does not normally occur, evidence of its occurrence should be measurable by analyzing channel substrate size classes. In past years, a "Wolman pebble count" has been conducted to analyze the channel substrate.

Based on the data collected and visible evidence made at the time the transects were established, most of the sands are being washed downstream during winter and spring flows, but material from the tailings area apparently continues to wash into Little Grizzly Creek for an extended period of time and some of it is trapped around the coarser

material of the R-5 channel section. Pebble counts will again be performed at the two established transects in the future. It is expected that the amount of sand sized material will now diminish with the completion of the diversion and lined channel separating Dolly Creek from the tailings material.

Copper Concentrations at R-3 and R-4
Little Grizzly Creek Above and Below Walker Tailings

Table 1

Date	R-3 Copper mg/L	R-4 Copper mg/L		Date	R-3 Copper mg/L	R-4 Copper mg/L
May 91	0	0.0020		May 00	0	0
Jun 91	0	0		Jul 00	0.0230	0
Jul 91	0	0		Sep 00	0	0
Aug 91	0	0.0030		May 01	0	0
Sep 91	0	0		Jul 01	0	0
Oct 91	0	0		Sep 01	0	0
Nov 91	0	0		May 02	0.0051	0
Dec 91	0	0.0030		Jul 02	0.0039	0.0013
Apr 92	0	0		Sep 02	0	0.0037
May 92	0	0.0390		June 03	0.0017	0.0013
Jun 92	0.0039	0		Jul 03	0	0.0027
Jul 92	0	0		Sep 03	0.0032	0.0010
Aug 92	0.0036	0		May-04	0.0034	0.0420
Sep 92	0.1200	0.1200		Jul-04	0	0
Oct 92	0	0.0024		Sep-04	0	0
Nov 92	0	0		Jun-05	0	0
May 93	0	0		Jul-05	0	0
Jun 93	0.0028	0		Sep-05	0	0
Jul 93	0.0024	0.0070		Jun-06	0.0032	0.0012
Aug 93	0	0		Jul-06	0.0033	0.0011
Sep 93	0	0.0083		Sep-06	0	0
Oct 93	0	0		May 07	0.0049	0.0043
Nov 93	0	0.0040		July 07	0.0012	0.0035
May 94	0	0		Sep 07	0.0069	0.0078
Jun 94	0.0090	0.0057		Jun-08	0.0017	0.0050
Jul 94	0	0		Jul-08	0.0005	0.0029
Aug 94	0	0		Sep-08	0.0005 .0026	~~0.0016~~
Sep 94	0	0		May-09	0.0006	0.0020
Oct 94	0	0		Jul-09	0.0008	0.0030
Jun 95	0	0		Sep-09	0.0033	0.0035
Jul 95	0	0		Jul-10	0.0000	~~0.0006~~
Aug 95	0.0041	0		Aug-10	~~0.0034~~	0.0027
Sep 95	0	0		Sep-10	~~0.0034~~	0.0031
Oct 95	0	0		Jul-11	0.0079	0.0096
Nov 95	0	0.0023		Sep-11	0.0015	0.0068
May 96	0	0		Oct-11	0.0014	0.0079
June 96	0	0		May-12	0.0050 0.0047	0.0050
July 96	0.0029	0		Jul-12	N/D	N/D
Aug 96	0.0022	0		Sep-12	N/D	N/D
Sept 96	0	0				
May 97	0	0		x	0.0029	0.0036
June 97	0	0		n	93	93
July 97	0	0		s	0.0127	0.0137
Aug 97	0	0		max	0.1200	0.1200
Sept 97	0	0		min	ND	ND
Oct 97	0	0				
June 98	0	0				
July 98	0.0110	0.0034				
Aug 98	0.0046	0.0015				
Sept 98	0	0				
Oct 98	0.0130	0.0088				
Jun 99	0	0				
Jul 99	0	0				
Aug 99	0	0				
Sept 99	0	0				
Oct 99	0	0				

0.0042

0.0048

56

doesn't match up w/ lab data

Summary of Copper Data for R-1, R-2 and R-5
1991-2011

Table 2

	R-1 Cu Conc. (mg/L)				R-2 Cu Conc. (mg/L)				R-5 Cu Conc. (mg/L)		
Year	May/June	July	September		May/June	July	September		May/June	July	September
1991	0.110	0.044	0.023		0.572	0.256	0.362		0.040	0.060	0.102
1992	0.034	0.034	0.033		0.250	0.360	0.240		0.000	0.066	0.000
1993	0.024	0.110	0.047		0.370	0.450	0.230		0.036	0.140	0.099
1994	0.074	0.029	0.021		0.500	0.210	0.088		0.050	0.051	0.017
1995	0.086	0.055	0.042		0.190	0.220	0.100		0.024	0.070	0.053
1996	0.065	0.017	0.014		0.150	0.180	0.066		0.032	0.076	0.031
1997	0.002	0.011	0.013		0.092	0.082	0.060		0.015	0.036	0.029
1998	0.050	0.015	0.011		0.150	0.180	0.080		0.012	0.055	0.040
1999	0.016	0.014	0.017		0.017	0.180	0.071		0.002	0.068	0.028
2000	0.014	0.016	0.009		0.310	0.220	0.096		0.033	0.085	0.033
2001	0.020	0.012	0.014		0.270	0.130	0.042		0.029	0.030	0.019
2002	0.030	0.015	0.009		0.450	0.310	0.092		0.024	0.110	0.022
2003	0.024	0.027	0.011		0.097	0.320	0.100		0.034	0.120	0.030
2004	0.028	0.021	0.008		0.003	0.220	0.052		0.380	0.067	0.000
2005	0.019	0.016	0.005		0.260	0.290	0.100		0.038	0.090	0.030
2006	0.024	0.012	0.007		0.240	0.230	0.078		0.048	0.095	0.031
2007	0.017	0.014	0.015		0.076	0.059	0.034		0.012	0.021	0.012
2008	0.018	0.005	0.004		0.042	0.014	0.010		0.026	0.004	0.003
2009	0.045	0.008	0.045		0.103	0.083	N/A		0.003	0.012	0.004
2010	N/A	0.004	0.004		N/A	N/A	0.103		N/A	0.004	0.002
2011	0.023	0.019	0.010		0.128	0.095	N/A		0.007	0.007	0.006
2012	0.017	<0.01	<0.01		0.037	<0.01	<0.01		0.003	<0.01	<0.01
x	0.04	0.02	0.02	x	0.21	0.20	0.11	x	0.04	0.06	0.03
n	21	21	21	n	21	20	19	n	21	21	21
s	0.03	0.02	0.01	s	0.16	0.11	0.08	s	0.08	0.04	0.03
max	0.110	0.110	0.047	max	0.572	0.450	0.362	max	0.380	0.140	0.102
min	0.002	0.004	0.004	min	0.003	0.014	0.010	min	0.000	0.004	0.000

Summary of Flow Rates at R-1, R-2 and R-5
1991-2011

Table 3

	R-1 Flow Rate (cfs)				R-2 Flow Rate (cfs)				R-5 Flow Rate (cfs)		
Year	May/June	July	September		May/June	July	September		May/June	July	September
1991	0.88	0.52	0.60		1.28	0.31	0.28		19.62	0.84	1.35
1992	0.18	0.14	0.11		0.12	0.06	0.02		1.06	0.43	0.22
1993	7.28	1.31	0.73		7.28	1.25	0.57		46.10	3.53	1.10
1994	0.31	0.14	0.14		0.72	0.15	0.01		7.30	0.45	0.44
1995	6.97	2.48	1.05		8.22	2.38	2.01		97.20	7.46	1.88
1996	12.30	1.10	0.90		15.60	1.30	1.00		80.90	3.40	1.70
1997	5.05	1.24	0.66		5.69	1.18	0.86		54.09	1.43	1.34
1998	9.60	1.80	1.00		10.20	2.00	0.90		120.00	7.10	2.10
1999	5.24	1.30	0.78		5.74	1.13	0.72		34.97	3.74	1.35
2000	2.00	0.70	0.40		2.20	0.70	0.40		23.40	2.10	1.00
2001	0.44	0.18	0.24		0.42	0.13	0.28		3.99	0.52	0.73
2002	1.25	0.37	0.34		1.62	0.31	0.18		18.13	1.12	0.56
2003	3.41	0.77	0.45		3.78	0.75	0.38		22.05	1.67	1.20
2004	1.37	0.14	0.07		1.29	0.34	0.08		13.39	1.99	0.23
2005	2.88	0.66	0.52		2.91	0.98	0.57		22.78	2.34	1.16
2006	10.20	0.99	0.26		14.10	1.25	0.26		12.30	2.45	0.43
2007	0.19	0.07	0.07		0.19	0.08	0.06		1.48	0.19	0.14
2008	0.20	0.23	0.29		0.09	0.11	0.06		2.66	0.60	0.38
2009	1.33	0.50	0.26		0.44	0.13	0.00		29.05	3.16	1.40
2010	1.01	0.44	0.35		0.13	ND	ND		8.80	0.93	1.82
2011	10.25	1.40	1.24		0.33	0.02	ND		54.79	3.71	1.40
2012	1.46	0.61	0.34		0.04	NA	NA		9.47	0.35	0.17
x	3.81	0.78	0.49	x	3.75	0.73	0.45	x	31.07	2.25	1.00
n	22	22	22	n	22	20	19	n	22	22	22
s	3.91	0.62	0.34	s	4.67	0.69	0.49	s	32.45	2.01	0.61
max	12.30	2.48	1.24	max	15.60	2.38	2.01	max	120.00	7.46	2.10
min	0.18	0.07	0.07	min	0.04	0.02	0.00	min	1.06	0.19	0.14

GROUNDWATER QUALITY AT WALKER MINE TAILINGS

Table 4

		Copper		Iron		Zinc	
Well No.	Sample Date	Total (mg/L)	Filtered (mg/L)	Total (mg/L)	Filtered (mg/L)	Total (mg/L)	Filtered (mg/L)
W-3	07/18/1994	0.0200	-	1.4000	-	ND	-
W-3	08/24/1994	0.0200	ND	1.4000	ND	ND	ND
W-3	09/22/1994	ND	ND	0.7300	0.1700	ND	ND
W-3	10/25/1994	ND	ND	1.1000	0.7000	ND	ND
W-3	06/24/1995	ND	ND	1.6000	ND	ND	ND
W-3	11/13/1995	ND	ND	0.3600	0.0400	ND	ND
W-3	05/24/2000	-	ND	-	0.0210	ND	ND
W-3	09/13/2000	-	ND	-	ND	ND	ND
W-3	05/22/2001	-	ND	-	ND	-	ND
W-3	09/25/2001	-	0.0120	-	ND	-	ND
W-3	05/10/2002	-	ND	-	ND	-	ND
W-3	09/26/2002	-	0.0021	-	ND	-	ND
W-3	05/23/2003	-	0.0020	-	ND	-	0.0032
W-3	09/18/2003	-	0.0025	-	ND	-	ND
W-3	05/21/2004	-	0.0015	-	0.0620	-	0.0069
W-3	09/05/2004	-	0.0024	-	ND	-	0.0016
W-3	5/31/2007	-	0.0030	-	0.3600	-	0.0120
W-3	9/17/2007	-	0.0510	-	0.0330	-	0.0210
W-3	5/19/2009		0.0043	-	0.0881	-	0.0019
W-3	9/22/2009	-	0.0005	-	0.6810	-	0.0018
W-3	6/21/2010	-	ND	-	ND	-	ND
W-3	9/30/2010	-	ND	-	0.6000	-	0.0009
W-3	6/21/2011	-	0.0015	-	0.7400	-	0.0060
W-3	10/2/2011	-	0.0037	-	0.5500	-	0.0027
W-3	6/12/2012	_	0.0020	_	0.0500	_	ND
W-3	9/27/2012	_	ND	_	0.6800	_	ND
W-4	08/24/1994	0.8900	0.5500	93.0000	0.4100	0.0800	0.0400
W-4	09/22/1994	1.7000	0.6200	120.0000	0.4100	0.1500	0.0500
W-4	10/25/1994	0.9800	ND	100.0000	32.0000	0.1200	ND
W-4	06/24/1995	ND	ND	28.0000	28.0000	ND	ND
W-4	11/13/1995	ND	ND	47.0000	25.0000	ND	ND
W-4							
W-5	07/18/1994	0.1100	-	32.0000	-	ND	-
W-5	08/24/1994	0.0400	ND	31.0000	0.1000	ND	ND
W-5	09/22/1994	0.0500	ND	30.0000	ND	ND	ND
W-5	10/25/1994	0.0600	ND	32.0000	2.2000	ND	ND
W-5	06/24/1995	ND	ND	2.5000	1.9000	ND	ND
W-5	11/13/1995	ND	ND	17.0000	0.1500	ND	ND
W-5	05/24/2000	-	ND	-	0.0680	ND	ND
W-5	09/13/2000	-	ND	-	0.7400	ND	ND
W-5	05/22/2001	-	ND	-	1.2000	-	ND
W-5	09/25/2001	-	ND	-	ND	-	ND
W-5	05/10/2002	-	ND	-	0.1400	-	ND
W-5	09/26/2002	-	0.0013	-	0.1200	-	ND
W-5	05/23/2003	-	0.0015	-	ND	-	ND
W-5	09/18/2003	-	0.0028	-	ND	-	0.0056
W-5	05/21/2004	-	0.0012	-	ND	-	0.0054
W-5	09/05/2004	-	0.0011	-	ND	-	ND
W-5	5/31/2007	-	0.0020	-	9.4000	-	0.0088
W-5	9/17/2007	-	0.0060	-	19.0000	-	0.0140
W-5	6/3/2008	-	0.0013	-	11.200	-	0.0077
W-5	9/9/2008	-	0.0006	-	15.700	-	0.0107
W-5	5/19/2009	-	0.0019	-	21.400	-	0.0024
W-5	9/22/2009	-	0.0101	-	15.100	-	0.0048
W-5	6/21/2010	-	ND	-	1.1000	-	ND
W-5	9/30/2010	-	ND	-	30.000	-	0.0017
W-5	6/21/2011	-	ND	-	32.500	-	0.0130
W-5	10/2/2011	-	0.0045	-	24.400	-	0.0072
W-5	5/23/2012	_	ND		9.370		ND
W-5	9/27/2012	_	ND		24.800		ND
W-6	08/24/1994	0.4600	ND	14.0000	ND	0.0400	ND
W-6	09/22/1994	0.9900	0.0100	31.0000	0.6900	0.0800	ND
W-6	10/25/1994	0.7200	0.0100	23.0000	0.2700	0.0200	ND
W-6	06/24/1995	ND	ND	ND	ND	ND	ND
W-6	11/13/1995	0.0900	ND	3.9000	0.0600	ND	ND

W-7	07/18/1994	ND	ND	1.9000	-	0.0200	-
W-7	08/24/1994	0.0200	ND	30.0000	0.4500	0.0500	ND
W-7	09/22/1994	0.0400	ND	43.0000	0.9600	0.0700	ND
W-7	10/25/1994	0.0400	ND	52.0000	1.1000	0.0600	ND
W-7	06/24/1995	ND	ND	ND	ND	ND	ND
W-7	11/13/1995	0.0100	ND	14.0000	0.6700	0.0200	0.0100
W-7	05/24/2000	-	ND	-	0.0790	-	ND
W-7	09/13/2000	-	ND	-	0.1800	-	ND
W-7	05/22/2001	-	ND	-	0.1400	-	ND
W-7	09/25/2001	-	ND	-	ND	-	ND
W-7	05/10/2002	-	ND	-	0.2800	-	ND
W-7	09/26/2002	-	0.0021	-	0.1000	-	0.0034
W-7	05/23/2003	-	0.0010	-	ND	-	0.0034
W-7	09/18/2003	-	ND	-	ND	-	0.0039
W-7	05/21/2004	-	0.0023	-	ND	-	0.0090
W-7	09/05/2004	-	ND	-	ND	-	0.0049
W-7	5/31/2007	-	0.0030	-	ND	-	0.0051
W-7	9/17/2007	-	0.0053	-	0.0880	-	0.0110
W-7	6/3/2008	-	0.0013	-	ND	-	0.0053
W-7	9/9/2008	-	0.0005	-	0.0310	-	0.0205
W-7	5/19/2009	-	0.0034	-	2.9600	-	0.0072
W-7	9/22/2009	-	0.0012	-	0.8280	-	0.0037
W-7	7/10/2010	-	ND	-	ND	-	ND
W-7	9/30/2010	-	ND	-	ND	-	0.0019
W-7	6/21/2011	-	0.0037	-	0.1800	-	0.0100
W-7	10/2/2011	-	ND	-	ND	-	ND

Groundwater Depths at Walker Mine Tailings
1993 - 2012

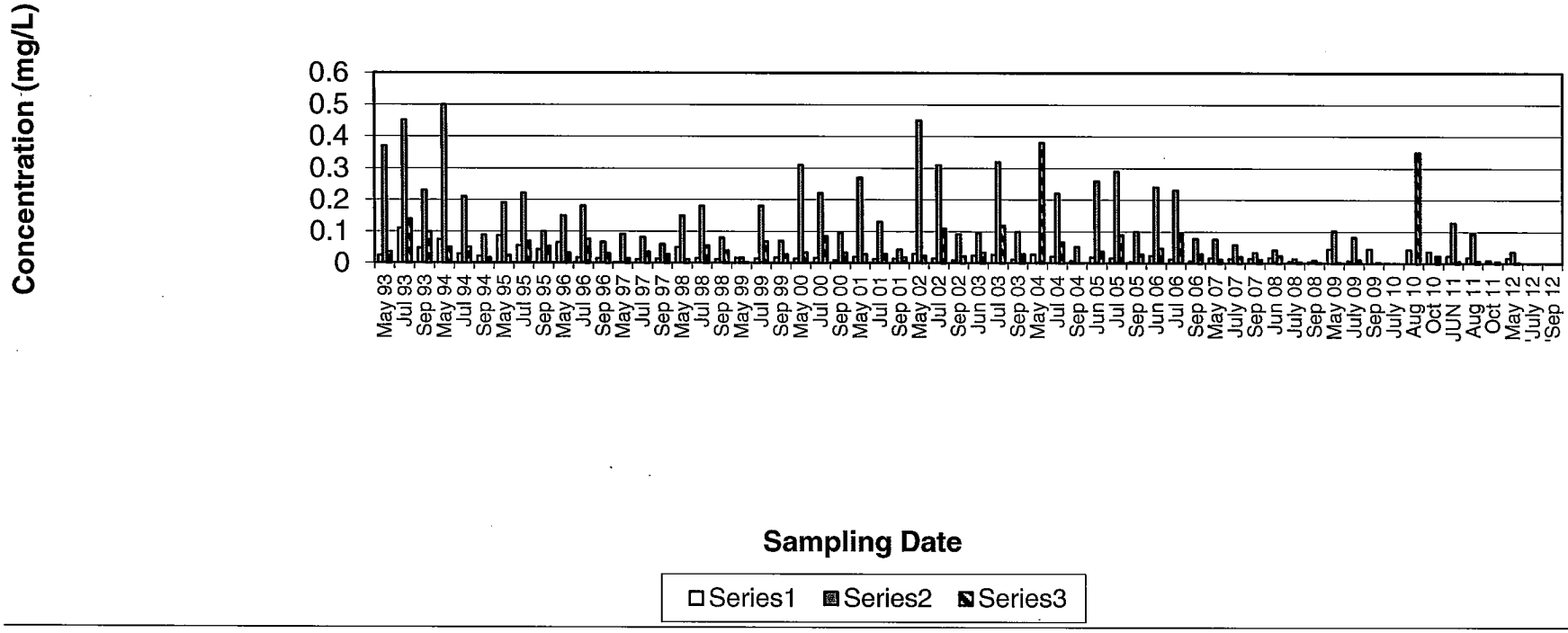
Monitoring Well Number: Depth to Water (ft)

Well W-1 was lost during construction summer 2007

Depth to Groundwater From Top of Casing	W-1	W-2	W-3	W-4	W-5	W-6	W-7	Average Depth (ft)
Top of Casing Elevation	5759.24	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91	
07-17-1993	13.34	2.14	5.12	16.96	7.90	5.64	1.06	7.45
07-18-1994	15.06	3.00	6.11	23.43	11.94	6.74	1.71	9.71
08-24-1994	15.35	3.26	6.59	24.52	12.88	7.63	2.07	10.33
09-22-1994	15.49	2.94	6.62	25.25	13.46	8.14	2.05	10.56
10-25-1994	15.59	2.60	6.28	25.90	13.97	8.33	1.91	10.65
06-24-1995	11.17	0.86	3.76	11.61	4.43	3.33	0.13	5.04
11-13-1995	14.75	2.34	5.98	22.64	11.32	7.09	1.03	9.31
05-24-2000	12.54	0.95	4.22	16.58	6.62	3.73	0.33	6.42
09-13-2000	14.80	2.77	6.08	22.76	11.34	7.09	0.25	9.30
05-22-2001	14.06	1.61	4.89	21.88	10.26	5.05	0.57	8.33
09-25-2001	15.27	3.16	6.69	25.21	13.39	8.25	1.68	10.52
05-10-2002	13.18	0.94	4.02	19.56	8.35	3.73	0.56	7.19
09-26-2002	14.96	2.92	6.40	24.37	12.59	7.87	1.43	10.08
05-23-2003	12.45	0.68	3.86	16.86	6.39	3.75	0.00	6.28
09-18-2003	14.54	2.58	6.08	22.84	11.35	7.16	0.79	9.33
05-21-2004	13.11	1.16	4.51	18.93	8.17	4.34	0.13	7.19
09-05-2004	14.57	2.63	6.30	23.52	11.89	7.44	1.20	9.65
06-16-2005	12.31	0.82	3.89	16.95	6.69	3.70	0.00	6.34
07-22-2005	13.26	1.63	5.26	18.96	8.45	5.66	0.42	7.66
09-15-2005	14.09	2.02	5.50	21.94	10.70	6.52	0.68	8.78
06-14-2006	11.19	0.68	4.39	14.24	5.68	4.20	0.00	5.77
06-24-2006	12.63	1.48	5.27	17.63	7.77	5.80	0.23	7.26
09-19-2006	13.88	2.31	6.05	21.34	10.29	7.06	0.59	8.79
05-31-2007	13.67	1.24	4.89	21.34	9.72	5.03	0.63	8.07
07-26-2007	14.11	2.19	5.90	22.86	11.32	6.18	1.44	9.14
09-17-2007	N/A	2.37	6.33	24.27	12.52	7.84	1.51	9.14
06-03-2008	N/A	0.47	4.23	20.77	9.41	4.21	0.87	6.66
07-31-2008	N/A	2.25	5.92	22.69	11.17	6.73	2.05	8.47
09-09-2008	N/A	2.49	6.29	23.93	12.20	7.59	2.05	9.09
05-19-2009	N/A	0.78	4.01	18.89	6.98	3.94	0.46	5.84
07-13-2009	N/A	1.62	5.36	20.17	9.23	5.82	1.39	7.27
09-22-2009	N/A	2.49	6.24	23.23	11.63	7.45	1.85	8.82
07-10-2010	N/A	1.70	4.61	17.73	7.38	4.63	0.75	6.13
08-12-2010	N/A	2.22	5.99	20.83	9.83	6.50	1.61	7.83
10-22-2010	N/A	0.78	4.01	18.84	6.98	3.94	0.46	5.84
06-30-2011	N/A	0.65	3.96	14.44	5.48	3.91	0.00	5.69
08-07-2011	N/A	1.59	5.31	17.66	7.76	5.82	0.31	7.63
10-02-2011	N/A	2.45	6.07	21.28	10.22	6.78	0.65	9.36
5/23/2012	8.78	1.16	4.56	19.54	8.52	4.52	0.39	7.85
7/18/2012	9.82	2.26	5.79	21.36	10.17	6.21	1.49	9.27
9/27/2012	11.53	3.86	7.07	23.99	12.30	7.69	1.62	11.07
Average Depth	13.41	1.90	5.38	20.68	9.72	5.93	0.94	8.28
n	28	41	41	41	41	41	41	41
s	1.73	0.87	0.97	3.33	2.47	1.56	0.68	1.57
max	15.59	3.86	7.07	25.90	13.97	8.33	2.07	10.65
min	8.78	0.47	3.76	11.61	4.43	3.33	0.00	5.04

Copper Concentrations at R-1, R-2, & R-5
Dolly Creek and Little Grizzly Creek
1993-2012

Chart 1



	R-1	R-2	R-5
May 91	0.11	0.572	0.04
Jul-91	0.044	0.256	0.06
Sep-91	0.023	0.362	0.102
May-92	0.034	0.25	0
Jul-92	0.034	0.36	0.066
Sep-92	0.033	0.24	0
May-93	0.024	0.37	0.036
Jul-93	0.11	0.45	0.14
Sep-93	0.047	0.23	0.099
May-94	0.074	0.5	0.05
Jul-94	0.029	0.21	0.051
Sep-94	0.021	0.088	0.017
May-95	0.086	0.19	0.024
Jul-95	0.055	0.22	0.07
Sep-95	0.042	0.1	0.053
May-96	0.065	0.15	0.032
Jul-96	0.017	0.18	0.076
Sep-96	0.014	0.066	0.031
May-97	0.002	0.092	0.015
Jul-97	0.011	0.082	0.036
Sep-97	0.013	0.06	0.029
May-98	0.05	0.15	0.012
Jul-98	0.015	0.18	0.055
Sep-98	0.011	0.08	0.04
May-99	0.016	0.017	0.002
Jul-99	0.014	0.18	0.068
Sep-99	0.017	0.071	0.028
May-00	0.014	0.31	0.033
Jul-00	0.016	0.22	0.085
Sep-00	0.009	0.096	0.033
1-May	0.02	0.27	0.029
1-Jul	0.012	0.13	0.03
1-Sep	0.014	0.042	0.019
2-May	0.03	0.45	0.024
2-Jul	0.015	0.31	0.11
2-Sep	0.009	0.092	0.022
3-Jun	0.024	0.097	0.034
3-Jul	0.027	0.32	0.12
3-Sep	0.011	0.1	0.03
4-May	0.028	0.003	0.38
4-Jul	0.021	0.22	0.067
4-Sep	0.008	0.052	0
5-Jun	0.019	0.26	0.038
5-Jul	0.016	0.29	0.09
5-Sep	0.0045	0.1	0.03
6-Jun	0.024	0.24	0.048
6-Jul	0.012	0.23	0.095
6-Sep	0.007	0.078	0.031
7-May	0.017	0.076	0.012
7-Jul	0.014	0.059	0.021
7-Sep	0.015	0.034	0.012
8-Jun	0.0182	0.042	0.0255
8-Jul	0.0049	0.0138	0.0044
8-Sep	0.0041	0.0097	0.0028
9-May	0.0448	0.103	0.0034
9-Jul	0.0076	0.0825	0.0118
9-Sep	0.045	0	0.0035
10-Jul	0	0	0
10-Aug	0.043	0	0.35
10-Oct	0.037	0	0.024
11-Jun	0.0232	0.128	0.0071
11-Aug	0.019	0.095	0.0074
11-Oct	0.00959	0	0.00586
12-May	0.017	0.037	0.003
'July 12	ND	NA	ND
'Sep 12	ND	NA	ND

MAY 2012

SURFACE AND GROUNDWATER TEST RESULTS AND SUPORTING DOCUMENTATION

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Reporting Frequency: Quarterly

Monitoring Period: May 2012

Findings:

(1) Surface Water. Samples were collected on May 23, 2012. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, did not exceed the limitation for copper (see Table 1). The remaining R-5 constituents fell within the prescribed limitations for dissolved iron and zinc. The release of copper from the tailings area to Dolly Creek, as measured at R-2, continued to exceed the limitation (see Table 1. Surface Water Summary Report). Concentrations of zinc were detected in 2 of the 5 samples taken but none of these concentrations exceeded the limitation of zinc. The concentration of iron was not detected at R-2 but was within the limitation at the remainder of the stations.

(2) Groundwater. Groundwater samples were collected for this monitoring event. Metals were only detected in wells W3 and W5, No metals were detected in W7. Samples were collected on 05/23/2012. Table 2 (Ground Water Summary) summarizes the findings for groundwater samples collected from the site. No concentrations of dissolved copper (<0.0 ug/l) were found at the sampling well (W-5 and W-7). Additionally, concentrations of dissolved zinc were not found in wells (W-3, W-5 and W7). Dissolved iron was found in wells (W-1,W-3 and W-5) with a maximum concentration of 9.37 mg/l. Dissolved iron at W-5 decrease from (32.50 mg/L to 9.37 mg/l) over the dissolved iron from the June of 2011sample. Dissolved iron in W-7 drastically decreased by a 180% from June 2011 it was found with a measured concentration of 0 mg/l compared to a detection of 0.18 mg/l from last year. These results will require out-year testing of W-5 and W-7 to continually monitor the marked change that has occurred in the groundwater iron concentrations at these locations.
Groundwater elevations were measured in six of seven wells at the site; W-1 was destroyed during construction in 2007. Depths to water level remain slightly lower in comparison of those taken in June of 2011. The results continue to show a definite gradient towards Little Grizzly Creek along the Dolly Creek Channel to the settling pond (R-6). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards little Grizzly Creek all along of its course adjacent to the tailings area.

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

WALKER MINE TAILINGS, PLUMAS COUNTY

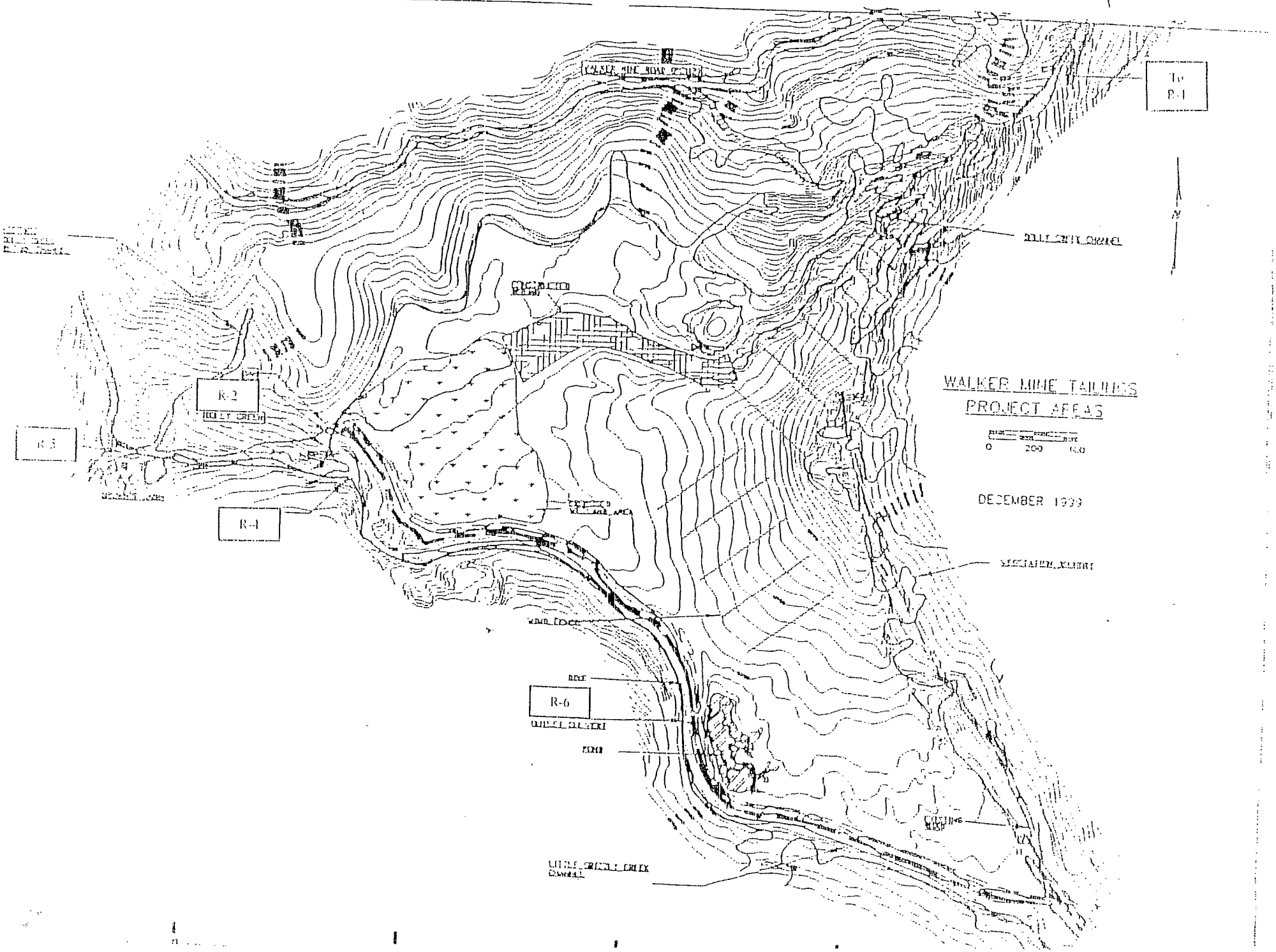
May-12

CONSTITUENT	UNITS	DETECTION LIMITS	R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	Limitation @R-5[3]
Field Parameters									
Flow	cfs	N/A	1.46	0.04	9.47	10.71	10.51	0	N/A
pH	number	N/A	7.98	8.29	7.91	7.99	8.08	N/A	N/A
Specific Conductance	umhos/cm	N/A	89.2	144	50.6	55.4	57.6	N/A	N/A
Air Temperature	℉	N/A	66	63	59.5	61	66	N/A	N/A
Water Temperature	℃	N/A	12.5	21.5	13.3	11.8	12.7	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	2.5	50.5	57.3	25.7	32.3	32.3	N/A	N/A
Total Alkalinity as CaCO3	mg/l	10	50	50	30	30	30	N/A	N/A
Sulfate	mg/l	2	ND	20	ND	ND	ND	N/A	N/A
Turbidity	NTU	0.2	1.9	1.9	1	1.1	1	N/A	2
Dissolved Iron	mg/l	0.05 ok	0.13	ND	0.17	0.22	0.24	N/A	1000
Copper	ug/l	1 1.0	17	37	5	5	3	N/A	3.41
Dissolved Zinc	ug/l	10.0 2.0	ND	10	10	ND	ND	N/A	45.41

[1] R-3 is the background station located above the tailiings area on Little Grizzly Creek.

[2] R-5 is the compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.

[3] * Lab error prevented analysis below 10 ug/l for copper


WALKER MINE TAILINGS
PROJECT AREAS
0
200
DECEMBER 1999
R-2
R-4
R-6
N

WALKER MINE TAILINGS MONITORING PROGRAM

9-276-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

DISCHARGE MEASUREMENT NOTES

Sta. No. R-1

Dolly Creek above Tailings @ Road 112

Date 5/23 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather .....

Other .....

Gage ..... Air 66°F @ 1614

..... Record removed ..... Water 12.5 °C @ 1616

Observer ..... Intake flushed .....

Control .....

pH 7.98

CONDUCTANCE 89.2 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1610

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.7										
	2		.45				0				
	2.5		.80				0				
	3		.8				0				
	3.5		.75				0				
	4		.75				.03				
	4.5		.9				.11				
	5		1.0				.66				
	5.5		.9				.87				
	6		.9				1.51				
	6.5		.7				0				
	7		.25				0				
RB	7.4										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2764P
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-2

Dolly Creek below Tailings Dam

Date 5/23 2012 Party Elyam

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Clear

Other ..... Air 63 °F @ 1343

Gage ..... Water 21.5 °C @ 1345

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.29

CONDUCTANCE 144 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1335

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.5	1.5	—								
	2.0	0.5	0.2				0				
	2.5	0.5	0.15				0.02				
	3.0	0.5	0.2				0.04				
	3.5	0.5	0.25				0.10				
	4.0	0.5	0.3				0.10				
	4.5	0.5	0.2				0.02				
	5.0	0.5	0.15				0				
RB	5.15	0.15	—								

Note - Tailings dam spillway has developed a leak - see Will Kelly all year. See flow here

9-2767
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-3

Little Grizzly Creek above Tailings

Date 5/23 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh-McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions; Cross section .....

Flow ..... Weather .....

Other .....

Gage ..... Air 59.5 °F @ 1520

..... Water 13.3 °C @ 1522

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.91

CONDUCTANCE 50.6 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1516

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.9	—	—								
	3.0	0.1	0				0				
	3.5	0.5	0.1				0.17				
	4.0	0.5	0.25				0.52				
	4.5	0.5	0.30				1.86				
	5.0	0.5	0.30				2.71				
	5.5	0.5	0.30				2.49				
	6.0	0.5	0.50				3.62				
	6.5	0.5	0.60				1.47				
	7.0	0.5	0.50				4.74				
	7.5	0.5	0.70				3.73				
	8.0	0.5	0.55				1.46				
	8.5	0.5	0.60				3.00				
	9.0	0.5	0.50				2.62				
	9.5	0.5	0.40				2.01				
	10.0	0.5	0.45				2.99				
	10.5	0.5	0.40				2.61				
	11.0	0.5	0.65				1.23				
	11.5	0.5	0.60				1.22				
	12.0	0.5	0.60				0				
	12.5	0.5	0.30				0				
	13.0	0.5	0.15				0				
RB	13.4										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2767
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-4

Little Grizzly Creek below Tailings

Date 5/23, 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Clear

Other ..... Air 61 F °C@ .....

Gage ..... Water 12.8 °C@ 1412

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.99

CONDUCTANCE 55.4 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1410

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Depth at which velocity was taken	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle of	Area	Discharge
LB	2.0		—				—				
	2.5	0.5	0.05				0				
	3.0	0.5	0.35				0.25				
	3.5	0.5	0.50				0.30				
	4.0	0.5	0.45				0.45				
	4.5	0.5	0.55				0.62				
	5.0	0.5	0.50				0.80				
	5.5	0.5	0.70				1.13				
	6.0	0.5	0.70				1.36				
	6.5	0.5	0.80				1.39				
	7.0	0.5	0.85				1.54				
	7.5	0.5	0.80				1.87				
	8.0	0.5	0.80				2.01				
	8.5	0.5	1.10				1.95				
⊙	9.0	0.5	1.15				1.57				
	9.5	0.5	1.15				1.45				
	10.0	0.5	1.10				1.77				
	10.5	0.5	1.10				1.62				
	11.0	0.5	0.95				1.38				
	11.5	0.5	0.85				1.12				
	12.0	0.5	0.70				0.91				
	12.5	0.5	0.45				0.81				
	13.0	0.5	0.55				0.44				
	13.5	0.5	0.25				0.45				
	14.0	0.5	0.30				0.07				
	14.5	0.5	0.35				0				
	15.0	0.5	0.15				0				
RB	15.5	0.5	0.05								
RB	15.7										

9-2762
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-5

Little Grizzly Creek @ Brown's Cabin

Date 5/23 8012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney.

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather .....

Other ..... Air 66°F @ 1700

Gage ..... Water 12.7°C @ 1702

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.08

CONDUCTANCE 57.6 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1652

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Quantitation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.55	—	—				—				
	3.0	0.45	0.10				0				
	3.5	0.5	0.35				0.33				
	4.0	0.5	0.40				0.93				
	4.5	0.5	0.30				1.46				
	5.0	0.5	0.75				1.70				
	5.5	0.5	0.65				1.62				
	6.0	0.5	0.90				1.76				
	6.5	0.5	0.75				2.55				
	7.0	0.5	0.80				1.92				
	7.5	0.5	0.85				2.22				
	8.0	0.5	1.05				1.32				
	8.5	0.5	1.05				1.10				
	9.0	0.5	0.70				1.25				
	9.5	0.5	0.75				1.64				
	10.0	0.5	0.90				1.48				
	10.5	0.5	0.80				1.72				
	11.0	0.5	0.70				1.82				
	11.5	0.5	0.50				1.51				
	12.0	0.5	0.30				1.53				
	12.5	0.5	0.35				1.21				
	13.0	0.5	0.25				1.11				
	13.5	0.5	0.20				0.65				
	14.0	0.5	0.20				0.39				
	14.5	0.5	0.20				0.30				
	15.0	0.5	0.10				0				
RB	15.4	—	—				—				

9-275-F
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. ....
Comp. by ....
Checked by ....

Sta. No. R-6

Sediment Basin Outlet

Date 5/23, 2012 Party Flynn

Width .... Area .... Vel. .... G. H. .... Disch. ....

Method .... No. secs. .... G. H. change .... in .... hrs. Susp. ....

Method coef. .... Hor. angle coef. .... Susp. coef. .... Meter No. ....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter ....
Date rated .... for rod, other.
Meter .... ft. above bottom of weight.
Spin before meas. .... after ....
Meas. plots .... % diff. from rating ....
Wading, cable, ice, boat, upstr., downstr., side bridge .... feet, mile, above, below gage, and ....
Check-bar, found ....
changed to .... at ....
Correct ....
Levels obtained ....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section ....

Flow No Flow .... Weather ....

Other .... Air .... °C@ ....

Gage .... Water .... °C@ ....

.... Record removed .... Intake flushed ....

Observer ....

Control ....

pH ....

CONDUCTANCE .... umhos/cm

G. H. of zero flow .... ft.

"No Flow"

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge

	Limitation at R-5		
Tubidity at R-3 =			1
R-5 hardness =			32.3
Turbidity limitation at R-3 + 1			2
Turbidity limitation at R-5 =			2
Iron limitation at R-5 =			0.24
(EXP((LOG(Hardness at R-5,2.71828)*0.8545)-1.702))*0.96			
Copper limitation at R-5 =			3.41
(EXP((LOG(Hardness at R-5,2.71828)*0.8473)+0.884))*0.986			
Zinc limitation at R-5 =			45.35
	LN 50 =		3.912
	times		0.85
			3.34
	minus		1.702
			1.64
	EXP(D21)		5.16
	times		0.96
			4.95
			4.95

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
MAY 2012

		DETECTION		WELL SITES					
CONSTITUENT	**UNIT**	**LIMIT**	**W-1**	**W-2**	**W-3**	**W-4**	**W-5**	**W-6**	**W-7***
Field Parameters									
Ground Surface Elevation	ft	0.01	N/A	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	N/A	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	N/A	1.16	4.56	19.54	8.52	4.52	0.39
Water Surface Elevation	ft	0.01	N/A	5740.58	5734.27	5748.46	5745.57	5743.35	5754.52
Laboratory									
Total Hardness as CaCO3	mg/l	5.0	N/A	N/A	167.0	N/A	165.0	N/A	30.0
Total Alkalinity	mg/l	1.0	N/A	N/A	110.0	N/A	40.0	N/A	30.0
Sulfate	mg/l	0.5	N/A	N/A	71.0	N/A	173.0	N/A	ND
Dissolved Iron	mg/l	20.0	N/A	N/A	0.12	N/A	9.37	N/A	ND
Dissolved Copper	ug/l	0.5	N/A	N/A	2*	N/A	ND*	N/A	ND
Dissolved Zinc	ug/l	1.0	N/A	N/A	ND	N/A	ND	N/A	ND

*W-7 is located upgradient and off-site in a wet area. The data collected from this well are used for background comparisons.

[1] ND is not detected at or above the detection limit

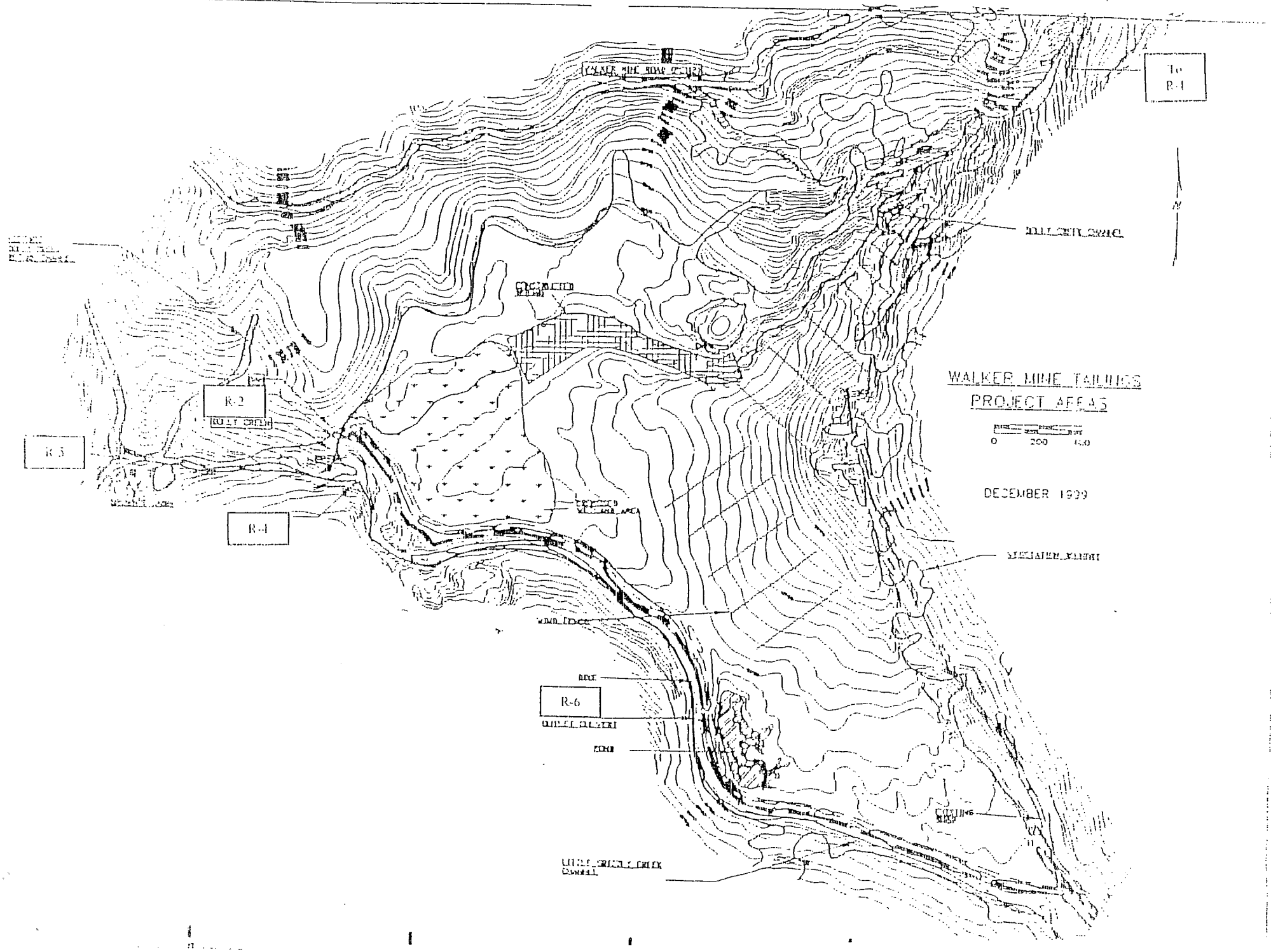
W-3*, W-5, and W-7 Lab error prevented analysis below 10 ug/l

WALKER TAILINGS
GROUNDWATER MONITORING PROGRAM

FLUID LEVEL GAUGING

SITE LOCATION: Walker Mine DATE: 5/23/12
COMPANY NAME: Sierra Env
PERSONNEL: Flynn

WELL	TIME	DEPTH TO WATER	COMMENTS
W-1A	1123	8.78	
2	1145	1.16	
3	1155	4.56	
4	1014	19.54	
5	1031	8.52	
6	0901	4.52	
7	0930	0.39	


To R-1
R-2
R-3
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
DECEMBER 1999

Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Mostly Dry / Cool - Clear

Page 1 of 1

Date: 5/23/12

Day: M T (W) Th F S S

Staff: Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [ ] Submersible Pump
- [ ] Hand Bail
- [x] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-7

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested

Dis. Cu, Fe, Zn

Number and Types of Bottle Used

Method of shipment

FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-7

Depth of Water: 0.39

Well Depth: 11.00

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW _____

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
0933								Start Purge
0935		2		6.7	6.32	84.1	8.67	Low Tb / No odor
0939		4		4.8	6.23	50.3	21.0	" "
0950		6		4.5	6.26	49.1	60.9	mod Tb / "
1000								Sample W-7

Inlet Depth: _____

Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Mostly Dry / Clear-Cool

Page 1 of 1

Date: 5/23/12

Day: M T (W) Th F S S

Staff: Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump Grundfos
- [ ] Hand Bail
- [ ] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-5

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested

Dis. Cu, Fe, Zn

Number and Types of Bottle Used

_____

Calculation Area

Height of water column =

Depth to water =

80% DTW _____

Method of shipment

FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-5

Depth of Water: 8.52

Well Depth: 40.30

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °F °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1035								Start Purge
1043		6		9.7	6.88	360	18.6	Low Tb / Mineral odor
1052		14		9.6	6.87	363	4.7	" "
1059		20		9.5	7.02	364	4.0	" "
1104								Sample W-5

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: _____ Page 1 of 1

Project Name: Walker Mine Tailings Date: 5/23/12

Project Location: Walker Mine Day: M T (W) Th F S S

Site Conditions/Weather: Mostly Dry / Clear - Cool Staff: Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump Grundfos
- [ ] Hand Bail
- [ ] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-3

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested: D.S. Cu, Fe, Zn

Number and Types of Bottle Used: _____

Calculation Area

Height of water column =

Depth to water =

80% DTW _____

Method of shipment: FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-3

Depth of Water: 4.56

Well Depth: 34.25

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1102								Start Purge
1210		6		11.5	7.55	284	10.12	Low Tb / No odor
1220		13		11.2	7.93	281	4.81	" "
1229		20		11.3	8.01	280	5.73	" "
1232								Sample W-3
								Field Dups as W-1 @ 0910

Inlet Depth: _____

Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Mostly Dry / Cool - Clear

Page 1 of 1

Date: 5/23/12

Day: M T (W) Th F S S

Staff: Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [ ] Submersible Pump
- [ ] Hand Bail
- [x] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-7

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested

Dis. Cu, Fe, Zn

Number and Types of Bottle Used

_____

Calculation Area

Height of water column =

Depth to water =

80% DTW _____

Method of shipment

FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-7

Depth of Water: 0.39

Well Depth: 11.00

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
0933								Start Purge
0935		2		6.7	6.32	84.1	8.67	Low Tb / No odor
0939		4		4.8	6.23	50.3	21.0	" "
0950		6		4.5	6.26	49.1	60.9	mod Tb / "
1000								Sample W-7

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Mostly Dry / Clear-Cool

Page 1 of 1

Date: 5/23/12

Day: M T (W) Th F S S

Staff: Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump Grundfos
- [ ] Hand Bail
- [ ] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-5

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested

Dis. Cu, Fe, Zn

Number and Types of Bottle Used

Method of shipment

FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Calculation Area

Height of water column =

Depth to water =

80% DTW _____

Well Number: W-5

Depth of Water: 8.52

Well Depth: 40.30

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °F °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1035								Start Purge
1043		6		9.7	6.88	360	18.6	Low Tb / Mineral odor
1052		14		9.6	6.87	363	4.7	" "
1059		20		9.5	7.02	364	4.0	" "
1104								Sample W-5

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: _____ Page 1 of 1

Project Name: Walker Mine Tailings Date: 5/23/12

Project Location: Walker Mine Day: M T (W) Th F S S

Site Conditions/Weather: Mostly Dry / Clear - Cool Staff: Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump Grundfos
- [ ] Hand Bail
- [ ] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-3

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested: D.S. Cu, Fe, Zn

Number and Types of Bottle Used: _____

Calculation Area

Height of water column =

Depth to water =

80% DTW _____

Method of shipment: FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-3

Depth of Water: 4.56

Well Depth: 34.25

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1102								Start Purge
1210		6		11.5	7.55	284	10.12	Low Tb / No odor
1220		13		11.2	7.93	281	4.81	" "
1229		20		11.3	8.01	280	5.73	" "
1232								Sample W-3
								Field Dups as W-1 @ 0910

Inlet Depth: _____

Signed: _____ Date: _____

June 12, 2012

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Lab ID : CH 1272985
Customer : 7-10917

Laboratory Report

Introduction: This report package contains total of 13 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(9 pages)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
R1	05/23/2012	05/24/2012	CH 1272985-001	GW
R2	05/23/2012	05/24/2012	CH 1272985-002	GW
R3	05/23/2012	05/24/2012	CH 1272985-003	GW
R4	05/23/2012	05/24/2012	CH 1272985-004	GW
R5	05/23/2012	05/24/2012	CH 1272985-005	GW
W1	05/23/2012	05/24/2012	CH 1272985-006	GW
W3	05/23/2012	05/24/2012	CH 1272985-007	GW
W5	05/23/2012	05/24/2012	CH 1272985-008	GW
W7	05/23/2012	05/24/2012	CH 1272985-009	GW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	05/29/2012:207746 All analysis quality controls are within established criteria.
	05/29/2012:205837 All preparation quality controls are within established criteria.
200.8	05/29/2012:207745 All analysis quality controls are within established criteria, except: The following note applies to Copper: 220 The CCB was greater than the DQO. However, all results were either five times greater than the CCB concentration or ND relative to the PQL.

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CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
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June 12, 2012
Plumas National Forest

Lab ID : CH 1272985
Customer : 7-10917

Inorganic - Metals QC

200.8	05/30/2012:207816 All analysis quality controls are within established criteria.
	05/29/2012:205878 All preparation quality controls are within established criteria.

Inorganic - Wet Chemistry QC

2130B	05/25/2012:207652 All analysis quality controls are within established criteria.
	05/25/2012:205843 All preparation quality controls are within established criteria.
2320B	05/30/2012:207817 All analysis quality controls are within established criteria.
	05/30/2012:205905 All preparation quality controls are within established criteria, except: The following note applies to Alkalinity (as CaCO3): 440 Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
300.0	05/29/2012:207749 All analysis quality controls are within established criteria.
	05/29/2012:205901 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2012-06-13

June 12, 2012

Lab ID : CH 1272985-001
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-16:10
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : R1
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	17	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	50.5	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	12	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	5	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	0.13	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	50	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	70	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	ND	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749
Turbidity	1.9	0.2	NTU		2130B	05/25/12:205843	2130B	05/25/12:207652

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-002
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-13:35
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : R2
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P:1]								
Copper	37	1	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Total Hardness as CaCO3	57.3	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	18	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	3	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	ND	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	10	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	50	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	60	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	20	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749
Turbidity	1.9	0.2	NTU		2130B	05/25/12:205843	2130B	05/25/12:207652

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-003
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-15:16
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : R3
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	5	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	25.7	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	7	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	2	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	0.17	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	10	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	30	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	40	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	ND	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749
Turbidity	1.0	0.2	NTU		2130B	05/25/12:205843	2130B	05/25/12:207652

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-004
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-14:10
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : R4
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	5	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	32.3	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	8	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	3	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	0.22	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	30	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	40	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	ND	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749
Turbidity	1.1	0.2	NTU		2130B	05/25/12:205843	2130B	05/25/12:207652

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-005
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-16:52
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : R5
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P:1]								
Copper	3	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	32.3	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	8	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	3	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	0.24	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	30	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	40	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	ND	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749
Turbidity	1.0	0.2	NTU		2130B	05/25/12:205843	2130B	05/25/12:207652

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-006
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-09:10
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : W1
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	1	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	169	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	58	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	6	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	0.06	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	110	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	130	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	71	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-007
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-12:32
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : W3
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P:1]								
Copper	2	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	167	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	57	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	6	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	0.12	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	110	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	130	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	71	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012

Lab ID : CH 1272985-008
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-11:04
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : W5
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	ND	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	165	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	61	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	3	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	9.37	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	40	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	50	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	173	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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FAX: (559)734-8435

June 12, 2012

Lab ID : CH 1272985-009
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : May 23, 2012-10:00
Sampled By : Flynn/Nupen
Received On : May 24, 2012-14:00
Matrix : Ground Water

Description : W7
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	ND	1	ug/L		200.8	05/29/12:205878	200.8	05/30/12:207816
Total Hardness as CaCO3	30.7	2.5	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Calcium	9	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Magnesium	2	1	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Iron	ND	0.05	mg/L		200.7	05/29/12:205837	200.7	05/29/12:207746
Zinc	ND	10	ug/L		200.8	05/29/12:205878	200.8	05/29/12:207745
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	30	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Bicarbonate	40	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Carbonate	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Hydroxide	ND	10	mg/L		2320B	05/30/12:205905	2320B	05/30/12:207817
Sulfate	ND	2	mg/L		300.0	05/29/12:205901	300.0	05/29/12:207749

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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June 12, 2012
Plumas National Forest-Walker Mine

Lab ID : CH 1272985
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	(CH 1272985-001)	MS	mg/L	12.00	91.9 %	75-125	
			MSD	mg/L	12.00	103 %	75-125	
			MSRPD	mg/L	798.8	5.5%	≤20.0	
	200.7	05/29/12:207746AC	CCV	ppm	25.00	96.0 %	90-110	
			CCB	ppm		0.01	1.0	
			CCV	ppm	25.00	96.0 %	90-110	
			CCB	ppm		-0.009	1.0	
			CCV	ppm	25.00	95.9 %	90-110	
			CCB	ppm		-0.008	1.0	
Iron	200.7	(CH 1272985-001)	MS	ug/L	3992	95.6 %	75-125	
			MSD	ug/L	3992	107 %	75-125	
			MSRPD	ug/L	798.8	10.5%	≤20.0	
	200.7	05/29/12:207746AC	CCV	ppm	5.000	97.5 %	90-110	
			CCB	ppm		0.0021	0.05	
			CCV	ppm	5.000	98.1 %	90-110	
			CCB	ppm		0.0006	0.05	
			CCV	ppm	5.000	98.0 %	90-110	
			CCB	ppm		0.0013	0.05	
Magnesium	200.7	(CH 1272985-001)	MS	mg/L	12.00	95.2 %	75-125	
			MSD	mg/L	12.00	107 %	75-125	
			MSRPD	mg/L	798.8	7.8%	≤20.0	
	200.7	05/29/12:207746AC	CCV	ppm	25.00	98.4 %	90-110	
			CCB	ppm		0.003	1.0	
			CCV	ppm	25.00	98.9 %	90-110	
			CCB	ppm		0.004	1.0	
			CCV	ppm	25.00	98.7 %	90-110	
			CCB	ppm		0.002	1.0	
Copper	200.8	(CH 1272627-001)	MS	ug/L	5.000	97.7 %	75-125	
			MSD	ug/L	5.000	94.5 %	75-125	
			MSRPD	ug/L	4.992	0.16	≤1	
	200.8	05/29/12:207745AC	CCV	ppb	120.0	95.2 %	90-110	
			CCB	ppb		1.46	1	220
			CCV	ppb	120.0	95.7 %	90-110	
			CCB	ppb		1.72	1	
	200.8	05/30/12:207816AC	CCV	ppb	120.0	101 %	90-110	
			ICB	ppb		-0.21	1	
			CCV	ppb	120.0	100 %	90-110	
			CCV	ppb	120.0	101 %	90-110	
			CCB	ppb		-0.32	1	
			CCB	ppb		-0.39	1	
			CCV	ppb	120.0	98.8 %	90-110	
			CCB	ppb		0.08	1	
Zinc	200.8	(CH 1272627-001)	MS	ug/L	5.000	103 %	75-125	
			MSD	ug/L	5.000	108 %	75-125	
			MSRPD	ug/L	4.992	0.24	≤10	
	200.8	05/29/12:207745AC	CCV	ppb	120.0	95.8 %	90-110	
			CCB	ppb		0.7	10	
			CCV	ppb	120.0	94.6 %	90-110	
			CCB	ppb		0.8	10	
Wet Chem								
Turbidity	2130B	(SP 1205129-001)	Dup	NTU		1.1%	2.47	
	2130B	05/25/12:207652jam	CCB	NTU		0.075	0.2	
			CCV	NTU	2.000	103 %	90-110	
			CCB	NTU		0.097	0.2	
			CCV	NTU	2.000	102 %	90-110	

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June 12, 2012 | Lab ID : CH 1272985
Plumas National Forest-Walker Mine | Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	(CH 1272822-001)	Dup	mg/L		4.8%	3.42	440
	2320B	05/30/12:207817AMB	CCV	mg/L	234.9	92.3 %	90-110	
			CCV	mg/L	234.9	91.9 %	90-110	
Bicarbonate	2320B	(CH 1272822-001)	Dup	mg/L		4.5%	4.78	
Carbonate	2320B	(CH 1272822-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(CH 1272822-001)	Dup	mg/L		0.0	10	
Sulfate	300.0	05/29/12:205901CHL	LCS	mg/L	50.00	91.8 %	90-110	
			MS	mg/L	1000	100 %	78-137	
		(CH 1272985-001)	MSD	mg/L	1000	96.4 %	78-137	
			MSRPD	mg/L	100.0	3.9%	≤12.3	
	300.0	05/29/12:207749CHL	ICV	ppm	100.0	91.5 %	90-110	
			ICB	ppm		-0.16	2	
			CCB	ppm		-0.54	2	
			CCV	ppm	50.00	94.6 %	90-110	
			CCB	ppm		-0.11	2	
			CCV	ppm	50.00	96.9 %	90-110	

Definition

ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

220	: The CCB was greater than the DQO. However, all results were either five times greater than the CCB concentration or ND relative to the PQL.
440	: Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

1272985

Chico - Condition Upon Receipt (Attach to COC)

Sample Receipt at CH:

1. Number of ice chests/packages received: 0TC
2. Were samples received in a chilled condition? Temps: ROI / / / /
   Acceptable is above freezing to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received..
3. Do the number of bottles received agree with the COC? Yes No N/A
4. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
5. Were sample custody seals intact? N/A Yes No

Sign and date the COC, place in a ziplock and put in the same ice chest as the samples.
Sample Receipt Review completed by (initials): CP

Sample Receipt at SP:

1. Were samples received in a chilled condition? Temps: 20 / / / /
   Acceptable is above freezing to 6° C. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
2. Do the number of bottles received agree with the COC? Yes No N/A
3. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
4. Were sample custody seals intact? N/A Yes No

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? Yes No
2. Did bottle labels correspond with the client's ID's? Yes No
3. Were all bottles requiring sample preservation properly preserved? Yes No N/A FGL
4. VOA's Checked for Headspace? Yes No N/A
5. Were all analyses within holding times at time of receipt? Yes No
6. Have rush or project due dates been checked and accepted? N/A Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): CP

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted:
   Initiated By:
   Problem:

   Resolution:

(7-10917)
Plumas National Forest-Walker Mine
CH 1272985
NMB-05/25/2012-11:02:14

FGL ENVIRONMENTAL

Monthly
www.fglinc.com

CHAIN OF CUSTODY

Laboratory Copy (1 of 3)

72914:06/04/2012

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Client: **Plumas National Forest-Walker Mine**

Address: Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Phone: (530)283-7712 Fax:

Contact Person: Ryan Nupen

Project Name: **Water Quality Monitoring**

Purchase Order Number:

Quote Number:

Sampler(s) Flynn / Nupen

Sampling Fee: _____ Pickup Fee: _____

Compositor Setup Date: __/__/__ Time: __/__

Lab Number: **CH** 1272985 7-10917

Method of Sampling: Composite(C) Grab(G)

Type of Sample **SEE REVERSE SIDE**

Potable(P) Non-Potable(NP) Ag Water(AgW)

Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)

Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling	Type of Sample	Potable(P)	Non-Potable(NP)	Ag Water(AgW)	Bacti Type	Bacti Reason	Metals, Diss-Cu,Hardness,Fe,Zn 250ml(P) Filtered Not Preserved	Wet Chemistry-SO4 Alk. (CaCO3) 16oz(P),	Wet Chemistry-Turbidity 250 ml(AGT)
1	R1	5/23/12	1610	G	GW						1	1	1
2	R2		1335	G	GW						1	1	1
3	R3		1516	G	GW						1	1	1
4	R4		1410	G	GW						1	1	1
5	R5		1652	G	GW						1	1	1
6	W-1		0910								1	1	
7	W3		1232	G	GW						1	1	
8	W5		1104	G	GW						1	1	
9	W7		1000	G	GW						1	1	
	~~W-1~~		~~0910~~	~~G~~	~~GW~~						~~1~~	~~1~~	

Remarks:

Seasonal: June-September

Metals Filtered Not Preserved

ok to Run past hold time

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
[signature]	5/23/12	1745	[signature]	5/23/12	2pm	[signature]		
Received By:	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**
[signature]	5/23/12	1746	CP			[signature]	5/25	1015

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Types of Samples

LIQUIDS

(DW)	Drinking Water
(GW)	Ground Water
(MW)	Monitoring Water
(SW)	Surface Water
(TB)	Travel Blank
(WW)	Waste Water
(AgW)	Ag Water

SOLIDS

(Oil)	Oil
(S)	Soil
(Sld)	Solid
(Slg)	Sludge

TISSUE

(LF)	Leaf Tissue
(Pet)	Petiole Tissue
(Prd)	Produce
(Tsu)	Tissue

BACTI

(Sys)	System
(Src)	Source
(W)	Waste

OTHER

(AF)	Air Filter
(Oth)	Other_____
(Swp)	Swipe

Types of Perservatives

KEEP ALL SAMPLES COOL

BLUE	HCl pH ≤ or NH4 Cl
YELLOW	H2SO4 pH ≤ 2
RED	HNO3 pH 2
BLACK	Monochloroacetic Buffer
GREEN	NaOH pH ≥ 12 or NaOH + Zinc Acetate
BLACK	Na2S203
WHITE	Other_____

Types of Containers

(at)	Amber Glass TFE-Cap
(av)	Amber Glass VOA TFE-Cap
(b)	Brass Tube
(g)	Glass Jar
(gt)	Glass TFE-Cap
(m)	Metal Tube
(o)	Other_____
(p)	Plastic
(s)	Bag
(v)	Glass VOA TFE-Cap

Conversions

8oz.=	half print	= 1 cup
16oz. =	pint	= 2 cups
32oz. =	quart	= 4 cups
1 L. =	1000 ml	-1 quart

CONTAINER - PRESERVATIVE:

The type of container(s) to be used is listed with the Test Description on the Chain of Custody.

Eg. Oil & Grease, EPA 624
cont. 32oz.(p)-H2SO4 & 40ml(av)--HCl

The number of containers to fill is specified by a number(s) in the sample Location/Description --Test Description Intersection.

Eg. I 1,2 I

This example is read as ONE (1) container of size 32oz. made of Plastic (p); preserved with H2SO4 plus TWO (2) containers of size 40 ml type amber glass VOA (av) preserved with HCl.

COLOR CODING OF PRESERVATIVE LABELS:

All Containers which contain a preservative are marked with a Color printed Label. The color scheme conforms to industry standards, where applicable, and is provided as a quick reference for locating the correct container. The appropriate colors for the different preservatives can be found to the left under TYPE OF PRESERVATIVES.

REQUESTED INFORMATION:

The person responsible for sampling should fill out the Section pertaining to the sampler. For each sampling event, the date and time of the sampling should be recorded in the space provided. If the sample is a liquid, the potability of the sample should be indicated if the water is for human consumption. If there are any additions or changes to the test descriptions indicated, please make the appropriate modifications on this form. The sampler should SIGN and DATE the Chain of Custody prior to the samples being relinquished to the transporter. The FIELD copy should be retained by a responsible party at the sampling site. The remaining Chain of Custody should be returned to FGL with the samples.

Location: R-1					
Date: 05/23/2012					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating: Poor					
Channel Width (ft):		5.7	**X-sectional Area (ft^2):**		4.04
Hydraulic Depth (ft):		0.71	**Average Velocity (fps):**		0.29
			Discharge (cfs):		1.46
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
1.7	Lew				
2	0.4	0.45	0.180	0.000	0.000
2.5	0.5	0.8	0.400	0.000	0.000
3	0.5	0.8	0.400	0.000	0.000
3.5	0.5	0.75	0.375	0.000	0.000
4	0.5	0.75	0.375	0.030	0.011
4.5	0.5	0.9	0.450	0.110	0.050
5	0.5	1	0.500	0.660	0.330
5.5	0.5	0.9	0.450	0.870	0.392
6	0.5	0.9	0.450	1.510	0.680
6.5	0.5	0.7	0.350	0.000	0.000
7	0.45	0.25	0.113	0	0.000
7.4					
Percent Error (%)		46.5%			

Location: R-2							
Date: 05/23/2012							
Measurement Method: 6/10							
Meter Type: Marsh McBirney							
Measurement Rating: Poor							
Channel Width (ft):		3.65	**X-sectional Area (ft^2):**		0.73		
Hydraulic Depth (ft):		0.20	**Average Velocity (fps):**		0.04		
			Discharge (cfs):		0.04		
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**		
1.50	1.50						
2.00	0.50	0.20	0.100	0.000	0.000		
2.50	0.50	0.15	0.075	0.020	0.002		
3.00	0.50	0.20	0.100	0.040	0.004		
3.50	0.50	0.25	0.125	0.100	0.013		
4.00	0.50	0.30	0.150	0.100	0.015		
4.50	0.50	0.20	0.100	0.020	0.002		
5.00	0.50	0.15	0.075	0.000	0.000		
5.15	0.15						
Percent Error (%)		35.7%					

Location: R-3						
Date: 05/23/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		10.50	**X-sectional Area (ft^2):**		3.76	
Hydraulic Depth (ft):		0.36	**Average Velocity (fps):**		1.78	
			Discharge (cfs):		9.47	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.90		0.00		0		
3.00	0.10	0	0.010	0.000	0.000	
3.50	0.50	0.10	0.125	0.170	0.021	
4.00	0.50	0.25	0.150	0.520	0.078	
4.50	0.50	0.30	0.150	1.860	0.279	
5.00	0.50	0.30	0.150	2.710	0.407	
5.50	0.50	0.30	0.250	2.490	0.623	
6.00	0.50	0.50	0.300	3.620	1.086	
6.50	0.50	0.60	0.250	1.470	0.368	
7.00	0.50	0.50	0.350	4.740	1.659	
7.50	0.50	0.70	0.275	3.750	1.031	
8.00	0.50	0.55	0.300	1.460	0.438	
8.50	0.50	0.60	0.250	3.000	0.750	
9.00	0.50	0.50	0.200	2.620	0.524	
9.50	0.50	0.40	0.225	2.010	0.452	
10.00	0.50	0.45	0.200	2.990	0.598	
10.50	0.50	0.40	0.325	2.610	0.848	
11.00	0.50	0.65	0.250	1.230	0.308	
11.50	0.50	0.50	0.000	0.220	0.000	
12.00	0.50	0.6	0.000	0.000	0.000	
12.50	0.50	0.3	0.000	0.000	0.000	
13.00	0.50	0.15	0.000	0.000	0.000	
13.40						
Percent Error (%)		10.9%				

Location: R-4							
Date: 05/23/2012							
Measurement Method: 6/10							
Meter Type: Marsh McBirney							
Measurement Rating: Poor							
Channel Width (ft):		13.70	**X-sectional Area (ft^2):**		8.60		
Hydraulic Depth (ft):		0.63	**Average Velocity (fps):**		0.97		
			Discharge (cfs):		10.71		
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**		
2.00	LEW						
2.50	0.50	0.05	0.025	0.000	0.000		
3.00	0.50	0.35	0.175	0.250	0.044		
3.50	0.50	0.50	0.250	0.300	0.075		
4.00	0.50	0.45	0.225	0.450	0.101		
4.50	0.50	0.55	0.275	0.620	0.171		
5.00	0.50	0.50	0.250	0.800	0.200		
5.50	0.50	0.70	0.350	1.130	0.396		
6.00	0.50	0.70	0.350	1.360	0.476		
6.50	0.50	0.80	0.400	1.390	0.556		
7.00	0.50	0.85	0.425	1.540	0.655		
7.50	0.50	0.80	0.400	1.870	0.748		
8.00	0.50	0.80	0.400	2.010	0.804		
8.50	0.50	1.10	0.550	1.950	1.073		
9.00	0.50	1.15	0.575	1.570	0.903		
9.50	0.50	1.15	0.575	1.430	0.822		
10.00	0.50	1.10	0.550	1.770	0.974		
10.50	0.50	1.10	0.550	1.620	0.891		
11.00	0.50	0.95	0.475	1.380	0.656		
11.50	0.50	0.85	0.425	1.120	0.476		
12.00	0.50	0.70	0.350	0.910	0.319		
12.50	0.50	0.45	0.225	0.810	0.182		
13.00	0.50	0.55	0.275	0.440	0.121		
13.50	0.50	0.25	0.125	0.450	0.056		
14.00	0.50	0.30	0.150	0.070	0.011		
14.50	0.50	0.35	0.175	0.000	0.000		
15.00	0.50	0.15	0.075	0.000	0.000		
15.50	0.50	0.05					
15.70							
Percent Error (%)		6.1%					

Location: R-5						
Date: 05/23/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating:		GOOD				
Channel Width (ft):		12.85	**X-sectional Area (ft^2):**		6.95	
Hydraulic Depth (ft):		0.54	**Average Velocity (fps):**		1.26	
			Discharge (cfs):		10.51	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.55	LEW					
3.00	0.45	0.10	0.045	0.000	0.000	
3.50	0.50	0.35	0.175	0.330	0.058	
4.00	0.50	0.40	0.200	0.930	0.186	
4.50	0.50	0.30	0.150	1.460	0.219	
5.00	0.50	0.75	0.375	1.700	0.638	
5.50	0.50	0.65	0.325	1.680	0.546	
6.00	0.50	0.90	0.450	1.760	0.792	
6.50	0.50	0.75	0.375	2.550	0.956	
7.00	0.50	0.80	0.400	1.920	0.768	
7.50	0.50	0.85	0.425	2.220	0.944	
8.00	0.50	1.05	0.525	1.320	0.693	
8.50	0.50	1.05	0.525	1.100	0.578	
9.00	0.50	0.70	0.350	1.250	0.438	
9.50	0.50	0.75	0.375	1.640	0.615	
10.00	0.50	0.90	0.450	1.480	0.666	
10.50	0.50	0.80	0.400	1.720	0.688	
11.00	0.50	0.70	0.350	1.820	0.637	
11.50	0.50	0.50	0.250	1.510	0.378	
12.00	0.50	0.30	0.150	1.530	0.230	
12.50	0.50	0.35	0.175	1.210	0.212	
13.00	0.50	0.25	0.125	1.110	0.139	
13.50	0.50	0.2	0.100	0.650	0.065	
14.00	0.50	0.2	0.100	0.390	0.039	
14.50	0.50	0.2	0.100	0.300	0.030	
15.00	0.50	0.1	0.050	0.000	0.000	
15.4						
Percent Error (%)		7.5%				

JULY 2012

SURFACE AND GROUNDWATER TEST RESULTS AND SUPORTING DOCUMENTATION

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Reporting Frequency: Quarterly

Monitoring Period: July 2012

Findings:

(1) Surface Water. Samples were collected on July 18, 2012. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin for copper, was not detected. Lab error prevented analysis below 10 ug/l (see Table 1). Of the remaining R-5 constituents iron fall within the prescribed limitations, zinc was not detected. There was no measureable flow at R-2 (tailings dam spillway) which reduced the release of copper from the tailings area to Dolly Creek in August. Concentrations of zinc were not detected in all of the four samples taken. Iron concentration was detected on all four samples, They were all below the limitation of 1000 ug/l.

(2) Groundwater. Samples were not collected on July 18, 2012. Table 2 summarizes the depth of the groundwater from the site.
Groundwater elevations were measured in six of seven wells at the site; W-1 was lost during construction in 2007. Water depths were slightly lower than 2011 (see table 2 Ground Water Summary). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards little Grizzly Creek all along its course with the tailings area.

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

WALKER MINE TAILINGS, PLUMAS COUNTY

Jul-12

CONSTITUENT	UNITS	DETECTION LIMITS	R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	Limitation @R-5[3]
Field Parameters									
Flow	cfs		0.61	N/A	0.35	1.08	3.71	N/A	N/A
pH	number		8.07	N/A	7.97	7.96	8.36	N/A	N/A
Specific Conductance	umhos/cm		105	N/A	87.5	119	132	N/A	N/A
Air Temperature	℉		69	N/A	60	58	66	N/A	N/A
Water Temperature	℃		11.3	N/A	13.5	10.4	15.6	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	2.5	66.2	NO FLOW	46.4	74.6	72.1	N/A	N/A
Total Alkalinity as CaCO3	mg/l	10	80	NO FLOW	70	80	80	N/A	N/A
Sulfate	mg/l	2	ND	NO FLOW	ND	10	10	N/A	N/A
Turbidity	NTU	0.2	4.5	NO FLOW	1.4	2.1	1.8	N/A	2.4
Dissolved Iron	mg/l	0.05 OK	0.13	NO FLOW	0.25	0.26	0.25	N/A	1000
Copper	ug/l	10 1.0 mg/L	ND	NO FLOW	ND	ND	ND	N/A	6.77
Dissolved Zinc	ug/l	20.0 2.0 mg/L	ND	NO FLOW	ND	ND	ND	N/A	89.54

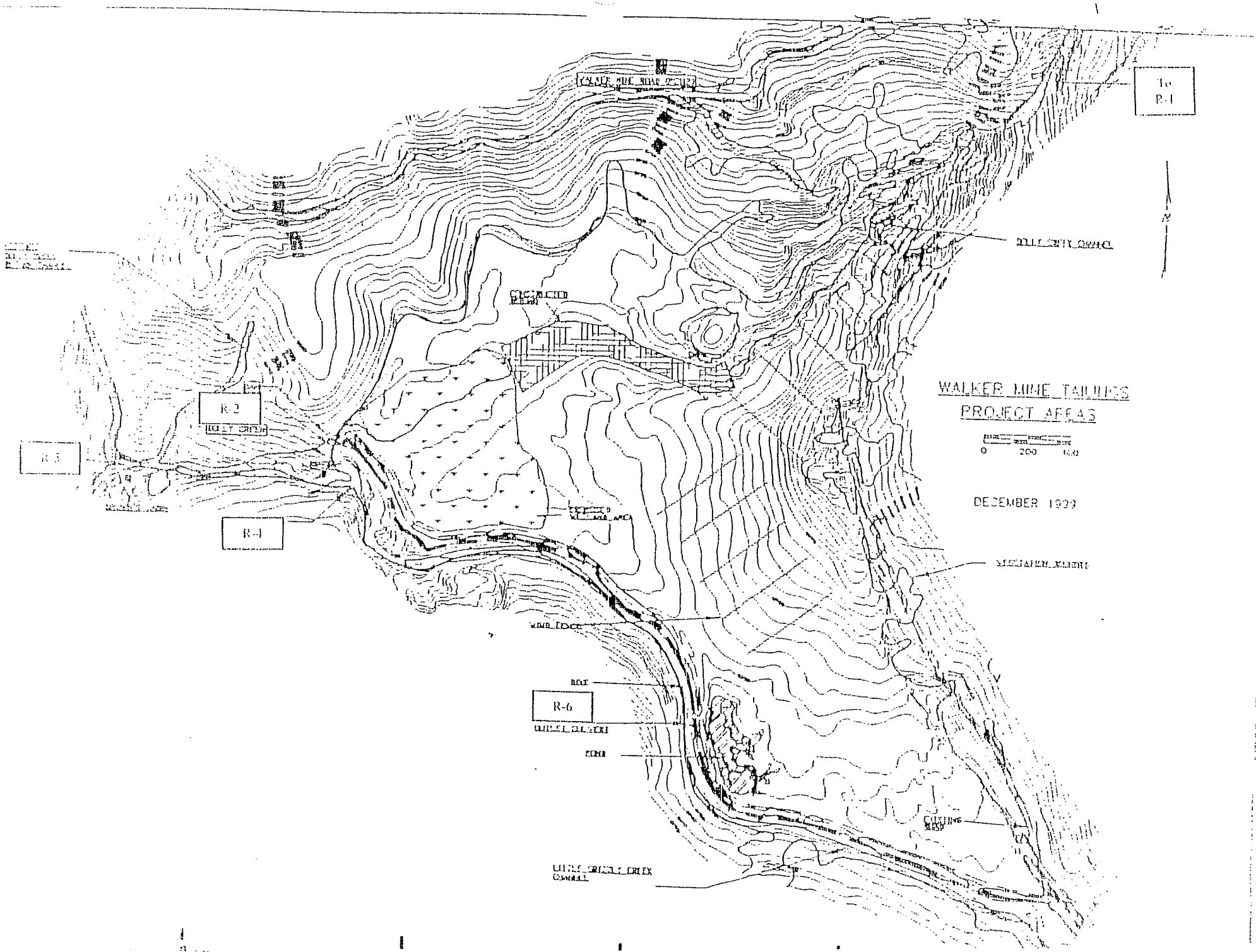
[1] R-3 is the background station located above the tailiings area on Little Grizzly Creek.

[2] R-5 is the compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.

[3] The compliance values for copper and zinc are calculated with the R-5 hardness value of 75 mg/l as CaCO3.

Lab error prevented analysis below 10 ug/l for copper.

	Limitation at R-5		
Tubidity at R-3 =			1.4
			72.1
R-5 hardness =		72.1	
Turbidity limitation at R-3 + 1			2.4
Turbidity limitation at R-5 =			1.8
			1000
Iron limitation at R-5 =			0.25
(EXP((LOG(Hardness at R-5,2.71			6.77
Copper limitation at R-5 =			
(EXP((LOG(Hardness at R-5,2.71			89.54
Zinc limitation at R-5 =			
			3.912
	LN 50 =		0.855
	times		3.343
			1.702
	minus		1.641
			5.159
	EXP(D21)		0.96
	times		4.953
			4.953


To R-1
R-2
R-3
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
DECEMBER 1999

9-276-F
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. ....
Comp. by ....
Checked by ....

Sta. No. R-2
Dolly Creek below Tailings Dam
Date 7/18/2012 Party Flynn
Width .... Area .... Vel. .... G. H. .... Disch. ....
Method ~~OKO~~ No. secs. .... G. H. change .... in .... hrs. Susp. ....
Method coef. .... Hor. angle coef. .... Susp. coef. .... Meter No. ....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter ~~Marsh McBirney~~
Date rated .... for rod, other.
Meter .... ft. above bottom of weight.
Spin before meas. .... after ....
Meas. plots .... % diff. from rating ....
~~Wading~~, cable, ice, boat, upstr., downstr., side bridge .... feet, mile, above, below gage, and ....
Check-bar, found ....
changed to .... at ....
Correct ....
Levels obtained ....

Measurement rated excellent (2%), ~~good (5%)~~, fair (8%), poor (over 8%), based on following conditions: Cross section ....
Flow .... Weather ....
Other .... Air .... °C @ ....
Gage .... Water .... °C @ ....
.... Record removed .... Intake flushed ....
Observer ....
Control ....
pH ....
CONDUCTANCE .... umhos/cm
G. H. of zero flow .... ft.

No Samples – No Flow

River at— .0 .10 .20 .30 .40 .50 .60 .70 .75

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge

.80 .85 .90 .92 .94 .96 .97 .98 .99 1.00 .99 .98 .97 .96 .94 .92 .90 .85 .80

WALKER MINE TAILINGS MONITORING PROGRAM

9-2762-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-4

Little Grizzly Creek below Tailings

Date 7/18/2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm - Clear

Other ..... Air 58° F @ 1029

Gage ..... Water 10.4 °C @ 1027

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.96

CONDUCTANCE 119 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1018

River at — LB

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.0										
	2.5		0.10				0				
	3		0.15				0.02				
	3.5		0.10				0				
	4		0.10				0.14				
	4.5		0.15				0.24				
	5		0.15				0.25				
	5.5		0.25				0.33				
	6		0.35				0.56				
	6.5		0.40				0.70				
	7		0.30				0.71				
	7.5		0.60				0.72				
	8		0.50				0.24				
	8.5		0.53 ~~0.35~~				0.43				
	9		0.40				0.53 ~~0.46~~				
	9.5		0.30				0.55				
	10		0.40				0.15				
	10.5		0.40				0.15				
	11		0.30				0.04				
RB	11.4										

WALKER MINE TAILINGS MONITORING PROGRAM

9-276-P
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-3

Little Grizzly Creek above Tailings

Date 7/18 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather .....

Other ..... Air 60°F @ 1151

Gage ..... Water 13.5 °C @ 1153

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.97

CONDUCTANCE 87.5 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1140

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.7										
	3.0		0.10				0				
	3.5		0.15				0				
	4.0		0.30				0				
	4.5		0.20				0				
	5.0		0.35				0.12				
	5.5		0.75				0.09				
	6.0		0.85				0.11				
	6.5		0.60				0.29				
	7.0		0.55				0.11				
	7.5		0.60				0.22				
	8.0		0.70				0.18				
	8.5		0.15				0.08				
RB	9.0										

9-2767
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

Meas. No. .....

Comp. by .....

Checked by .....

DISCHARGE MEASUREMENT NOTES

Sta. No. R-1

Dolly Creek above Tailings @ Road 112

Date 7/18, 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm - Clear

Other ..... Air 69°F @ 1319

Gage ..... Water 11.3 °C @ 1317

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.07

CONDUCTANCE 105 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1315

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for bar, angle or	Area	Discharge
LB	1.90										
	2.0		0.25				0				
	2.5		0.65				0				
	3.0		0.70				0				
	3.5		0.60				0				
	4.0		0.85				0				
	4.5		0.97				0				
	5.0		0.95				0.10				
	5.5		0.80				0.26				
	6.0		0.80				0.28				
	6.5		~~0.79~~ 0.69				0.32				
	7.0		0.36				0				
RB	7.5										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2765
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-5

Little Grizzly Creek @ Brown's Cabin

Date 7/8 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method ..... No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm Clear

Other ..... Air 66°F @ 1402

Gage ..... Water 15.6°C @ 1404

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.36

CONDUCTANCE 132 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1400

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	3.4										
	3.5		<0.05				0				
	4.0		0.12				0.12				
	4.5		0.25				0.70				
	5.0		0.42				0.54				
	5.5		0.35				0.30				
	6.0		0.32				0.28				
	6.5		0.30				0.35				
	7.0		0.30				0.38				
	7.5		0.40				0.06				
	8.0		0.52				0				
	8.5		0.65				0				
	9.0		0.62				0				
	9.5		0.65				0.08				
	10.0		0.43				0.29				
	10.5		0.61				0.48				
	11.0		0.35				0.43				
	11.5		0.32				0.51				
	12.0		0.30				0.46				
	12.5		0.10				0				
	13.0		0.05				0				
RB	13.1										

9-275-F
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. ....
Comp. by ....
Checked by ....

Sta. No. R-6
Sediment Basin Outlet

Date 7/18, 2012 Party Flynn

Width .... Area .... Vel. .... G. H. .... Disch. ....

Method .... No. secs. .... G. H. change .... in .... hrs. Susp. ....

Method coef. .... Hor. angle coef. .... Susp. coef. .... Meter No. ....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter ....
Date rated .... for rod, other.
Meter .... ft. above bottom of weight.
Spin before meas. .... after ....
Meas. plots .... % diff. from rating ....
Wading, cable, ice, boat, upstr., downstr., side bridge .... feet, mile, above, below gage, and ....
Check-bar, found ....
changed to .... at ....
Correct ....
Levels obtained ....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section ....

Flow No Flow Weather ....

Other .... Air .... °C @ ....

Gage .... Water .... °C @ ....

.... Record removed .... Intake flushed ....

Observer ....

Control ....

pH ....

CONDUCTANCE .... umhos/cm

G. H. of zero flow .... ft.

No Flow – No Samples

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge

ENVIRONMENTAL

Monthly
www.fglinc.com

CHAIN OF CUSTODY

Laboratory Copy (1 of 3)

72914:07/02/2012

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Client: **Plumas National Forest-Walker Mine**
Address: Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Phone: (530)283-7712 Fax:

Contact Person: Ryan Nupen

Project Name: **Water Quality Monitoring**

Purchase Order Number:

Quote Number:

Sampler(s) Pat Flynn

Sampling Fee: _____ Pickup Fee: _____

Compositor Setup Date: __/__/__ Time: __/__

Lab Number: **CH** 12746025 7-10917

Method of Sampling: Composite(C) Grab(G)
Type of Sample **SEE REVERSE SIDE**
Potable(P) Non-Potable(NP) Ag Water(AgW)
Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)
Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling	Type of Sample	Metals, Diss-Cu,Hardness,Fe,Zn 250ml(P)	Wet Chemistry-SO4,Alk. (CaCO3) 16oz(P), 8oz(P)	Wet Chemistry-Turbidity 250 ml(AGT)
1	R1	7/18/12	1315	G	GW	1	1,1	1
2				G	GW			
2	R3	7/18/12	1140	G	GW	1	1,1	1
3	R4		1018	G	GW	1	1,1	1
4	R5		1400	G	GW	1	1,1	1
6								
7								
8								
9								

Remarks: OK to run Post 10 Holding time
Seasonal: June-September
Routine TAT
Stream Water Samples
don't run pH -

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
[signature]	7/18/12	1620	[signature]	7/19/12	0915	WB	7-20-12	1330
Received By:	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**
[signature]	7/18/12	1620				CP		

Rel CP 7-20-12 1700

Rec on ice 7-20-12 1700

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Types of Samples

LIQUIDS

(DW)	Drinking Water
(GW)	Ground Water
(MW)	Monitoring Water
(SW)	Surface Water
(TB)	Travel Blank
(WW)	Waste Water
(AgW)	Ag Water

SOLIDS

(Oil)	Oil
(S)	Soil
(Sld)	Solid
(Slg)	Sludge

TISSUE

(LF)	Leaf Tissue
(Pet)	Petiole Tissue
(Prd)	Produce
(Tsu)	Tissue

BACTI

(Sys)	System
(Src)	Source
(W)	Waste

OTHER

(AF)	Air Filter
(Oth)	Other_____
(Swp)	Swipe

Types of Perservatives

KEEP ALL SAMPLES COOL

BLUE	HCl pH ≤ or NH4 Cl
YELLOW	H2SO4 pH ≤ 2
RED	HNO3 pH 2
BLACK	Monochloroacetic Buffer
GREEN	NaOH pH ≥ 12 or NaOH + Zinc Acetate
BLACK	Na2S203
WHITE	Other_____

Types of Containers

(at)	Amber Glass TFE-Cap
(av)	Amber Glass VOA TFE-Cap
(b)	Brass Tube
(g)	Glass Jar
(gt)	Glass TFE-Cap
(m)	Metal Tube
(o)	Other_____
(p)	Plastic
(s)	Bag
(v)	Glass VOA TFE-Cap

Conversions

8oz.=	half print	= 1 cup
16oz. =	pint	= 2 cups
32oz. =	quart	= 4 cups
1 L. =	1000 ml	-1 quart

CONTAINER - PRESERVATIVE:

The type of container(s) to be used is listed with the Test Description on the Chain of Custody.

Eg. Oil & Grease, EPA 624
cont. 32oz.(p)-H2SO4 & 40ml(av)--HCl

The number of containers to fill is specified by a number(s) in the sample Location/Description --Test Description Intersection.

Eg. | 1,2 |

This example is read as ONE (1) container of size 32oz. made of Plastic (p); preserved with H2SO4 plus TWO (2) containers of size 40 ml type amber glass VOA (av) preserved with HCl.

COLOR CODING OF PRESERVATIVE LABELS:

All Containers which contain a preservative are marked with a Color printed Label. The color scheme conforms to industry standards, where applicable, and is provided as a quick reference for locating the correct container. The appropriate colors for the different preservatives can be found to the left under TYPE OF PRESERVATIVES.

REQUESTED INFORMATION:

The person responsible for sampling should fill out the Section pertaining to the sampler. For each sampling event, the date and time of the sampling should be recorded in the space provided. If the sample is a liquid, the potability of the sample should be indicated if the water is for human consumption. If there are any additions or changes to the test descriptions indicated, please make the appropriate modifications on this form. The sampler should SIGN and DATE the Chain of Custody prior to the samples being relinquished to the transporter. The FIELD copy should be retained by a responsible party at the sampling site. The remaining Chain of Custody should be returned to FGL with the samples.

Chico - Condition Upon Receipt (Attach to COC)

Sample Receipt at CH:

1. Number of ice chests/packages received: OTC
2. Were samples received in a chilled condition? Temps: RRT / ____ / ____ / ____ / ____
   Acceptable is above freezing to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received..
3. Do the number of bottles received agree with the COC? Yes No N/A
4. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
5. Were sample custody seals intact? N/A Yes No

Sign and date the COC, place in a ziplock and put in the same ice chest as the samples.
Sample Receipt Review completed by (initials): ____

Sample Receipt at SP:

1. Were samples received in a chilled condition? Temps: 3 / ____ / ____ / ____ / ____
   Acceptable is above freezing to 6° C. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
2. Do the number of bottles received agree with the COC? Yes No N/A
3. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
4. Were sample custody seals intact? N/A Yes No

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? Yes No
2. Did bottle labels correspond with the client's ID's? Yes No
3. Were all bottles requiring sample preservation properly preserved? Yes No N/A FGL
4. VOA's Checked for Headspace? Yes No N/A
5. Were all analyses within holding times at time of receipt? Yes No
6. Have rush or project due dates been checked and accepted? N/A Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): ____

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: ____
   Initiated By: ____
   Problem:

   Resolution:

(7-10917)
Plumas National Forest-Walker Mine
CH 1274625
IV-07/23/2012-09:15:19

Table 2. GROUND WATER SUMMARY

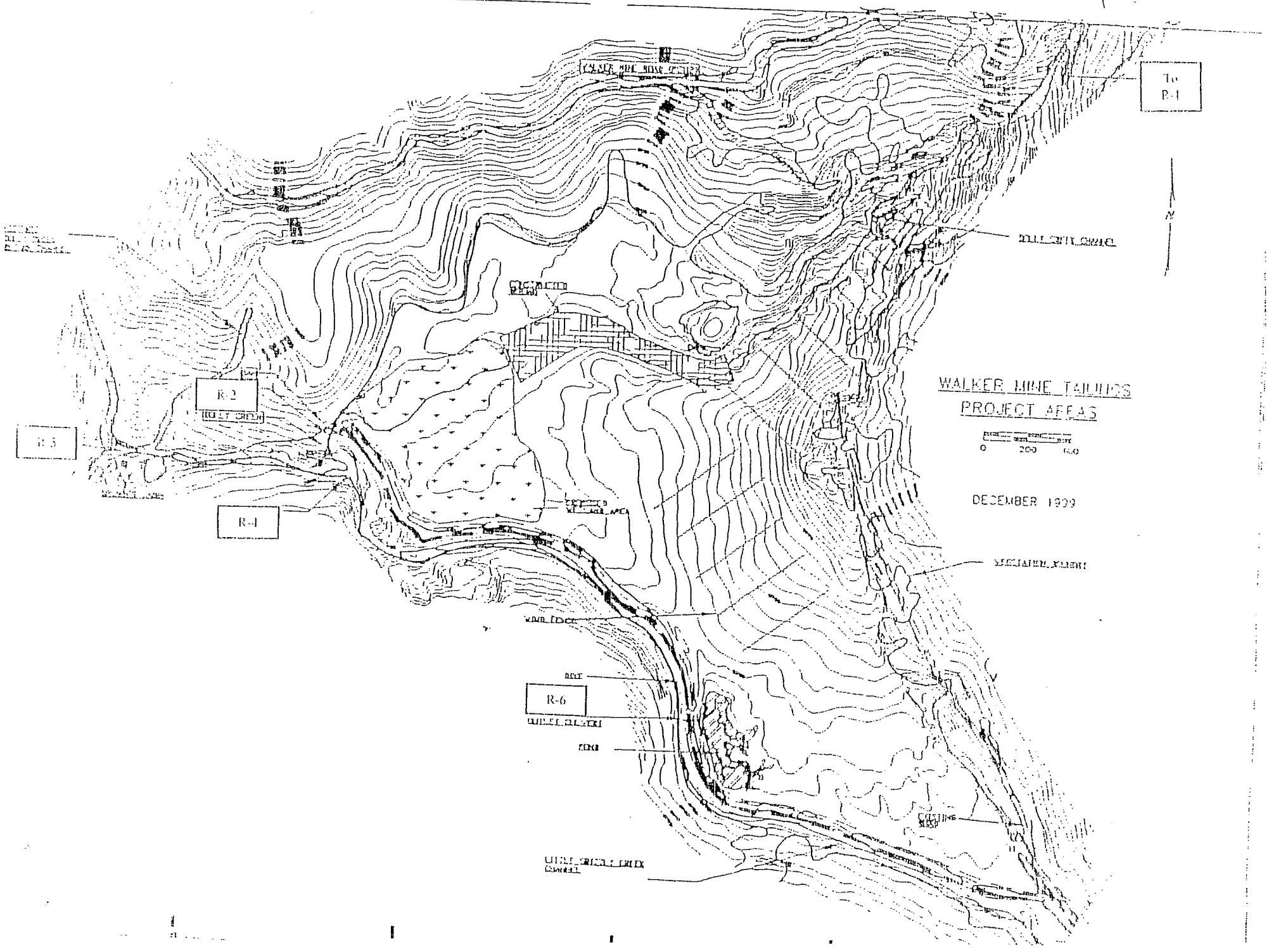
U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
JULY 2012

CONSTITUENT	UNIT	DETECTION LIMIT	W-1	W-2	W-3	W-4	W-5	W-6	W-7*
				WELL SITES					
Field Parameters									
Ground Surface Elevation	ft	0.01	N/A	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	N/A	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	N/A	2.26	5.79	21.36	10.17	6.21	1.49
Water Surface Elevation	ft	0.01	N/A	5739.48	5733.04	5746.64	5743.92	5741.66	5753.42
Laboratory									
Total Hardness as CaCO3	mg/l	2.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Alkalinity	mg/l	10.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sulfate	mg/l	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Iron	mg/l	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Copper	ug/l	10.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Zinc	ug/l	20.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

The data collected from this well are used for background comparisons. During this month no tests were done for dissolved metals

[1] N/A is not detected at or above the detection limit

* Lab error prevented analysis below 10 ug/l for copper


To R-1
R-2
R-3
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
400
DECEMBER 1999
N

WALKER TAILINGS
GROUNDWATER MONITORING PROGRAM

FLUID LEVEL GAUGING

SITE LOCATION: Walker Mine DATE: 7/18/12
COMPANY NAME: Sierra Env
PERSONNEL: Pat Flynn

WELL	TIME	DEPTH TO WATER	COMMENTS
W-1A	0900	9.82	
2	0914	2.26	
3	0922	5.79	
4	0842	21.36	
5	0850	10.17	
6	0817	6.21	
7	0832	1.49	

August 9, 2012

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Lab ID : CH 1274625
Customer : 7-10917

Laboratory Report

Introduction: This report package contains total of 8 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(4 pages)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
R1	07/18/2012	07/20/2012	CH 1274625-001	GW
R3	07/18/2012	07/20/2012	CH 1274625-002	GW
R4	07/18/2012	07/20/2012	CH 1274625-003	GW
R5	07/18/2012	07/20/2012	CH 1274625-004	GW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CH 1274625-001	Turbidity	48	69.75 Hours
CH 1274625-002	Turbidity	48	71.33 Hours
CH 1274625-003	Turbidity	48	72.7 Hours
CH 1274625-004	Turbidity	48	69 Hours

All samples arrived at room temperature. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

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August 9, 2012
Plumas National Forest

Lab ID : CH 1274625
Customer : 7-10917

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	07/23/2012:210622 All analysis quality controls are within established criteria
	07/23/2012:208021 All preparation quality controls are within established criteria

Inorganic - Wet Chemistry QC

2130B	07/21/2012:210605 All analysis quality controls are within established criteria
	07/21/2012:208027 All preparation quality controls are within established criteria
2320B	07/26/2012:210859 All analysis quality controls are within established criteria
	07/26/2012:208176 All preparation quality controls are within established criteria
300.0	07/29/2012:210999 All analysis quality controls are within established criteria
	07/30/2012:210999 All analysis quality controls are within established criteria
	07/29/2012:208330 All preparation quality controls are within established criteria

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2012-08-10

August 9, 2012

Lab ID : CH 1274625-001
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : July 18, 2012-13:15
Sampled By : Pat Flynn
Received On : July 20, 2012-13:30
Matrix : Ground Water

Description : R1
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	ND	10	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Total Hardness as CaCO3	66.2	2.5	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Calcium	15	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Magnesium	7	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Iron	0.13	0.05	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Zinc	ND	20	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	80	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Bicarbonate	100	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Carbonate	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Hydroxide	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Sulfate	ND	2	mg/L		300.0	07/29/12:208330	300.0	07/29/12:210999
Turbidity	4.5	0.2	NTU		2130B	07/21/12:208027	2130B	07/21/12:210605

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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August 9, 2012

Lab ID : CH 1274625-002
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : July 18, 2012-11:40
Sampled By : Pat Flynn
Received On : July 20, 2012-13:30
Matrix : Ground Water

Description : R3
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	ND	10	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Total Hardness as CaCO3	46.4	2.5	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Calcium	12	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Magnesium	4	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Iron	0.25	0.05	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Zinc	ND	20	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	70	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Bicarbonate	80	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Carbonate	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Hydroxide	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Sulfate	ND	2	mg/L		300.0	07/29/12:208330	300.0	07/29/12:210999
Turbidity	1.4	0.2	NTU		2130B	07/21/12:208027	2130B	07/21/12:210605

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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August 9, 2012

Lab ID : CH 1274625-003
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : July 18, 2012-10:18
Sampled By : Pat Flynn
Received On : July 20, 2012-13:30
Matrix : Ground Water

Description : R4
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	ND	10	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Total Hardness as CaCO3	74.6	2.5	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Calcium	20	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Magnesium	6	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Iron	0.26	0.05	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Zinc	ND	20	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	80	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Bicarbonate	100	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Carbonate	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Hydroxide	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Sulfate	10	2	mg/L		300.0	07/29/12:208330	300.0	07/29/12:210999
Turbidity	2.1	0.2	NTU		2130B	07/21/12:208027	2130B	07/21/12:210605

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

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August 9, 2012

Lab ID : CH 1274625-004
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : July 18, 2012-14:00
Sampled By : Pat Flynn
Received On : July 20, 2012-13:30
Matrix : Ground Water

Description : R5
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	ND	10	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Total Hardness as CaCO3	72.1	2.5	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Calcium	19	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Magnesium	6	1	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Iron	0.25	0.05	mg/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Zinc	ND	20	ug/L		200.7	07/23/12:208021	200.7	07/23/12:210622
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	80	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Bicarbonate	100	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Carbonate	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Hydroxide	ND	10	mg/L		2320B	07/26/12:208176	2320B	07/26/12:210859
Sulfate	10	2	mg/L		300.0	07/29/12:208330	300.0	07/30/12:210999
Turbidity	1.8	0.2	NTU		2130B	07/21/12:208027	2130B	07/21/12:210605

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.

nelac

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August 9, 2012
Plumas National Forest-Walker Mine

Lab ID : CH 1274625
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	(SP 1207349-001)	MS	mg/L	12.00	88.0 %	75-125	
			MSD	mg/L	12.00	81.8 %	75-125	
			MSRPD	mg/L	798.8	1.0%	≤20.0	
	200.7	07/23/12:210622AC	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.009	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.004	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.004	1.0	
Copper	200.7	(SP 1207349-001)	MS	ug/L	800.0	98.2 %	75-125	
			MSD	ug/L	800.0	97.1 %	75-125	
			MSRPD	ug/L	798.8	1.1%	≤20.0	
	200.7	07/23/12:210622AC	CCV	ppm	1.000	98.5 %	90-110	
			CCB	ppm		-0.00008	0.01	
			CCV	ppm	1.000	99.0 %	90-110	
			CCB	ppm		-0.0004	0.01	
			CCV	ppm	1.000	98.9 %	90-110	
			CCB	ppm		0.00005	0.01	
Iron	200.7	(SP 1207349-001)	MS	ug/L	3992	99.8 %	75-125	
			MSD	ug/L	3992	98.2 %	75-125	
			MSRPD	ug/L	798.8	1.7%	≤20.0	
	200.7	07/23/12:210622AC	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		0.0005	0.05	
			CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.0002	0.05	
			CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.0010	0.05	
Magnesium	200.7	(SP 1207349-001)	MS	mg/L	12.00	101 %	75-125	
			MSD	mg/L	12.00	99.5 %	75-125	
			MSRPD	mg/L	798.8	0.6%	≤20.0	
	200.7	07/23/12:210622AC	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.005	1.0	
			CCV	ppm	25.00	104 %	90-110	
			CCB	ppm		0.004	1.0	
			CCV	ppm	25.00	104 %	90-110	
			CCB	ppm		0.005	1.0	
Zinc	200.7	(SP 1207349-001)	MS	ug/L	800.0	102 %	75-125	
			MSD	ug/L	800.0	99.4 %	75-125	
			MSRPD	ug/L	798.8	2.8%	≤20.0	
	200.7	07/23/12:210622AC	CCV	ppm	1.000	101 %	90-110	
			CCB	ppm		0.0051	0.02	
			CCV	ppm	1.000	102 %	90-110	
			CCB	ppm		0.0050	0.02	
			CCV	ppm	1.000	102 %	90-110	
			CCB	ppm		0.0070	0.02	
Wet Chem								
Turbidity	2130B	(CH 1274625-001)	Dup	NTU		0.9%	2.47	
	2130B	07/21/12:210605AMM	CCB	NTU		0.059	0.2	
			CCV	NTU	2.000	103 %	90-110	
			CCB	NTU		0.071	0.2	
			CCV	NTU	2.000	104 %	90-110	
Alkalinity (as CaCO3)	2320B	(CC 1281908-001)	Dup	mg/L		1.1%	3.42	
	2320B	07/26/12:210859AMB	CCV	mg/L	234.9	101 %	90-110	
			CCV	mg/L	234.9	97.8 %	90-110	
Bicarbonate	2320B	(CC 1281908-001)	Dup	mg/L		1.1%	4.78	

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August 9, 2012
Plumas National Forest-Walker Mine

Lab ID : CH 1274625
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Carbonate	2320B	(CC 1281908-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(CC 1281908-001)	Dup	mg/L		0.0	10	
Sulfate	300.0	07/29/12:208330SBL	LCS	mg/L	50.00	104 %	90-110	
			MS	mg/L	1000	109 %	78-137	
		(CC 1281910-002)	MSD	mg/L	1000	104 %	78-137	
			MSRPD	mg/L	100.0	4.7%	≤12.3	
	300.0	07/29/12:210999CHL	CCB	ppm		-0.34	2	
			CCV	ppm	50.00	105 %	90-110	
			CCB	ppm		-0.23	2	
			CCV	ppm	50.00	108 %	90-110	
			CCB	ppm		-0.43	2	
			CCV	ppm	50.00	104 %	90-110	

Definition

CCV : Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB : Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.

Location: R-1					
Date: 7/18/2012					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating: good					
Channel Width (ft):		5.6	**X-sectional Area (ft^2):**		3.67
Hydraulic Depth (ft):		0.65	**Average Velocity (fps):**		0.14
			Discharge (cfs):		0.61
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
1.90	Lew				
2.00	0.3	0.25	0.075	0.000	0.000
2.50	0.5	0.65	0.325	0.000	0.000
3.00	0.5	0.7	0.350	0.000	0.000
3.50	0.5	0.6	0.300	0.000	0.000
4.00	0.5	0.85	0.425	0.000	0.000
4.50	0.5	0.87	0.435	0.000	0.000
5.00	0.5	0.85	0.425	0.100	0.043
5.50	0.5	0.8	0.400	0.260	0.104
6.00	0.5	0.8	0.400	0.880	0.352
6.50	0.5	0.7	0.350	0.320	0.112
7.00	0.5	0.36	0.180	0.000	0.000
7.50	REW				
Percent Error (%)		17.0%			

Location: R-2						
Date: 7/18/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: good						
Channel Width (ft):		0.00	**X-sectional Area (ft^2):**		0.00	
Hydraulic Depth (ft):		0.00	**Average Velocity (fps):**		0.00	
			Discharge (cfs):		0.00	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
0.00	LEW					
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	0.00	0.00	0.000	0.000	0.000	
0.00	REW					
		NO SAMPLES/ NO FLOW				
Percent Error (%)		0.0%				

Location: R-3						
Date: 7/18/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: good						
Channel Width (ft):		6.30	**X-sectional Area (ft^2):**		2.64	
Hydraulic Depth (ft):		0.42	**Average Velocity (fps):**		0.10	
			Discharge (cfs):		0.35	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.70	LEW					
3.00	0.40	0.10	0.040	0.000	0.000	
3.50	0.50	0.15	0.075	0.000	0.000	
4.00	0.50	0.30	0.150	0.000	0.000	
4.50	0.50	0.20	0.100	0.000	0.000	
5.00	0.50	0.35	0.175	0.120	0.021	
5.50	0.50	0.75	0.375	0.090	0.034	
6.00	0.50	0.85	0.425	0.110	0.047	
6.50	0.50	0.60	0.300	0.290	0.087	
7.00	0.50	0.55	0.275	0.110	0.030	
7.50	0.50	0.60	0.300	0.220	0.066	
8.00	0.50	0.70	0.350	0.180	0.063	
8.50	0.50	0.15	0.075	0.080	0.006	
9.00	0.00	0.00				
Percent Error (%)		8.6%				

Location: R-4						
Date: 07/18/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating:	GOOD					
Channel Width (ft):		9.40	**X-sectional Area (ft^2):**		2.74	
Hydraulic Depth (ft):		0.29	**Average Velocity (fps):**		0.32	
			Discharge (cfs):		1.08	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.00	LEW					
2.50	0.50	0.10	0.050	0.000	0.000	
3.00	0.50	0.15	0.075	0.020	0.002	
3.50	0.50	0.10	0.050	0.000	0.000	
4.00	0.50	0.10	0.050	0.140	0.007	
4.50	0.50	0.15	0.075	0.240	0.018	
5.00	0.50	0.15	0.075	0.250	0.019	
5.50	0.50	0.25	0.125	0.330	0.041	
6.00	0.50	0.35	0.175	0.560	0.098	
6.50	0.50	0.40	0.200	0.700	0.140	
7.00	0.50	0.30	0.150	0.710	0.107	
7.50	0.50	0.60	0.300	0.720	0.216	
8.00	0.50	0.50	0.250	0.240	0.060	
8.50	0.50	0.55	0.275	0.430	0.118	
9.00	0.50	0.40	0.200	0.530	0.106	
9.50	0.50	0.30	0.150	0.550	0.083	
10.00	0.50	0.40	0.200	0.150	0.030	
10.50	0.50	0.40	0.200	0.150	0.030	
11.00	0.45	0.30	0.135	0.040	0.005	
11.40						
Percent Error (%)		1.7%				

Location: R-5					
Date: 7/18/2012					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating:	good				
Channel Width (ft):		9.70	**X-sectional Area (ft^2):**		2.59
Hydraulic Depth (ft):		0.27	**Average Velocity (fps):**		1.20
			Discharge (cfs):		3.71
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
3.40	LEW				
3.50	0.30	0.05	0.015	0.000	0.000
4.00	0.50	0.15	0.075	1.040	0.078
4.50	0.50	0.30	0.150	0.890	0.134
5.00	0.50	0.50	0.250	1.870	0.468
5.50	0.50	0.60	0.300	2.320	0.696
6.00	0.50	0.55	0.275	1.020	0.281
6.50	0.50	0.55	0.275	1.740	0.479
7.00	0.50	0.40	0.200	1.110	0.222
7.50	0.50	0.45	0.225	2.180	0.491
8.00	0.50	0.40	0.200	0.080	0.016
8.50	0.50	0.40	0.200	2.400	0.480
9.00	0.50	0.10	0.050	1.380	0.069
9.50	0.50	0.40	0.200	1.060	0.212
10.00	0.50	0.20	0.100	0.810	0.081
10.50	0.50	0.15	0.075	0.080	0.006
11.00	REW				
11.50					
12.00					
12.50					
13.00					
13.10					
Percent Error (%)		18.8%			

SEPTEMBER 2012

SURFACE AND GROUNDWATER TEST RESULTS AND SUPORTING DOCUMENTATION

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Reporting Frequency: Quarterly

Monitoring Period: September 2012

Findings:

(1) Surface Water. Samples were collected on 09/27/2012. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, were not determined because of a Lab error that prevented analysis below 10 ug/l for copper (see Table 1). Of the remaining R-5 constituents Zinc was not detected and iron fell within the prescribed limitations for dissolved iron (120 mg/L). Concentrations of Iron were detected in 4 of the 5 samples taken but none of these concentrations exceeded the limitation of iron.

(2) Groundwater. Samples were collected on 09/27/2012. Table 2 summarizes the findings for groundwater samples collected from the site. No concentrations of dissolved copper (<1.0 ug/l) were found at the samplings well (W-3, W-5 and W-7). Additionally, concentrations of dissolved zinc was found in well (W-7 with a maximum concentration of 60 ug/l). There was no detection of dissolved zinc at (W-3 and W-5). Dissolved iron was found in W-3 and W-5 with a measured concentration of 0.68mg/l and 24.80 mg/l. Dissolved iron at W-5 increase 19% over the dissolved iron from the September of 2011 sample. Dissolved iron in W-7 was not detected in September 2010, October 2011 and September 2012. These results will require out-year testing of W-5 and W-7 to continually monitor the marked change that has occurred in the groundwater iron concentrations at these locations.

Groundwater elevations were measured in six of seven wells at the site; W-1 was destroyed during construction in 2007. Depth to water measurements decreased slightly from October 2011. The results continue to show a definite gradient towards Little Grizzly Creek along the Dolly Creek Channel to the settling pond (R-6). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards little Grizzly Creek all along of its course adjacent to the tailings area.

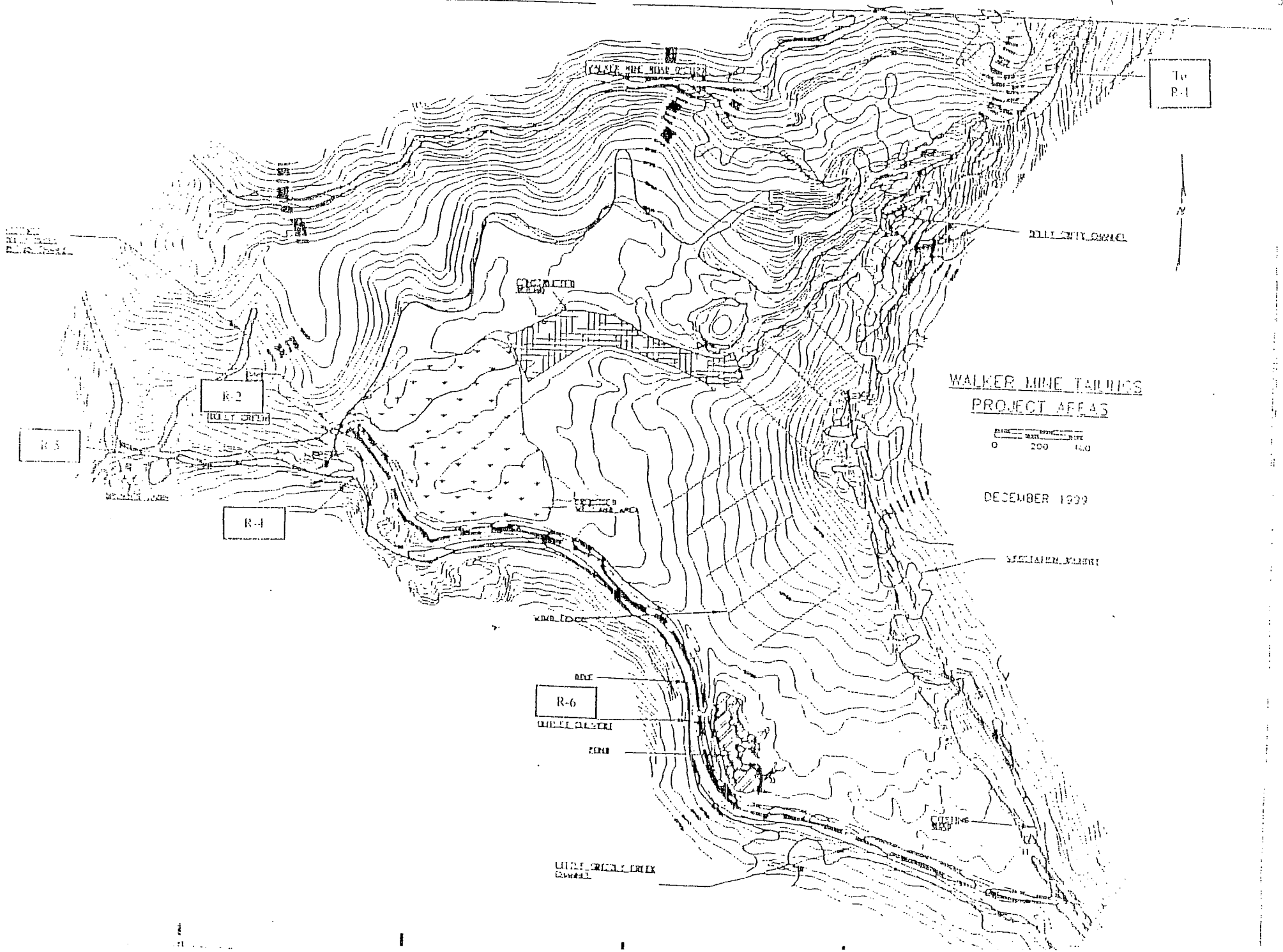

To R-1
R-2
R-3
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
DECEMBER 1999
N

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

WALKER MINE TAILINGS, PLUMAS COUNTY

Sep-12

CONSTITUENT	UNITS	DETECTION LIMITS	R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	Limitation @R-5[3]
Field Parameters									
Flow	cfs	N/A	0.34	N/A	0.17	0.58	0.64	0	N/A
pH	number	N/A	8.13	N/A	8.14	8.06	8.25	N/A	N/A
Specific Conductance	umhos/cm	N/A	107.3	N/A	93.1	126.8	127.4	N/A	N/A
Air Temperature	F	N/A	66	N/A	70	62	68	N/A	N/A
Water Temperature	C	N/A	10.6	N/A	12.4	9.6	10.1	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	2.5	66.2	N/A	53	77.1	77.1	N/A	N/A
Total Alkalinity as CaCO3	mg/l	10	70	N/A	60	80	80	N/A	N/A
Sulfate	mg/l	2	ND	N/A	ND	14	14	N/A	N/A
Turbidity	NTU	0.2	3.6	N/A	1.7	1.9	1.6	N/A	2.7
Dissolved Iron	ug/l	0.05 OK	0.2	N/A	0.3	0.16	0.12	N/A	1000
Copper	ug/l	10 1.0	ND	N/A	ND	ND	ND	N/A	7.17
Dissolved Zinc	ug/l	20.0 2.0	20	N/A	ND	ND	ND	N/A	94.78

[1] R-3 is the background station located above the tailiings area on Little Grizzly Creek.

[2] R-5 is the compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.

[3] The compliance values for copper and zinc are calculated with the R-5 hardness value of 50 mg/l as CaCO3.

Lab error prevented analysis below 10 ug/l for copper

	Limitation at R-5			
Tubidity at R-3 =			1.7	
R-5 hardness =			77.1	
Turbidity limitation at R-3 + 1			2.7	
Turbidity limitation at R-5 =			1.6	
Iron limitation at R-5 =			0.12	
(EXP((LOG(Hardness at R-5,2.71828)*0.8545)-1.702))*0.96				
Copper limitation at R-5 =			7.17	
(EXP((LOG(Hardness at R-5,2.71828)*0.8473)+0.884))*0.986				
Zinc limitation at R-5 =			94.78	
	LN 50 =		3.912	
	times		0.855	
			3.343	
	minus		1.702	
			1.641	
	EXP(D21)		5.159	
	times		0.96	
			4.953	
			4.953	

WALKER MINE TAILINGS MONITORING PROGRAM

9-276-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-1

Dolly Creek above Tailings @ Road 112

Date 9/27 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter Marsh-McBirney

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm - Clear

Other ..... Air 66°F @ 1540

Gage ..... Water 10.6°C @ 1537

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.13

CONDUCTANCE 107.3 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1532

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.7										
	2		.35				0				
	2.5		.65				0				
	3		.6				0				
	3.5		.7				.01				
	4		.8				.07				
	4.5		.9				.03				
	5		.85				.01				
	5.5		.8				.23				
	6		.75				.52				
	6.5		.6				0				
	7		.1				0				
RB	7.3										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2764a
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....

Comp. by .....

Checked by .....

Sta. No. R-2

Dolly Creek below Tailings Dam

Date 9/27 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side

bridge ..... feet, mile, above, below

gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow No Flow Weather Dry / Warm - Clear

Other ..... Air ..... °C@ .....

Gage ..... Water ..... °C@ .....

..... Record removed ..... Intake flushed ..... ft.

Observer .....

Control .....

pH .....

CONDUCTANCE ..... umhos/cm

G. H. of zero flow ..... ft.

Samples @ NA (Dry)

River at —

Angle coef. factor	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
		Dry (No Flow)									
0											

9-276-P
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-3

Little Grizzly Creek above Tailings

Date 9/27 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%) good (5%) fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow .....

Weather Warm – Clear

Other .....

Air 70°F @ 1446

Gage .....

Water 12.4°C @ 1448

Record removed ..... Intake flushed ..... Observer .....

Control .....

pH 8.14

CONDUCTANCE 93.1 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1442

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.5										
	3		.125				0				
	3.5		.225				0				
	4		.25				.03				
	4.5		.375				.04				
	5		.4				.11				
	5.5		.65				.05				
	6		.7				.03				
	6.5		.5				.16				
	7		.575				.13				
	7.5		.55				.09				
	8		.2				0				
RB	8.35										

WALKER MINE TAILINGS MONITORING PROGRAM

9-276-C
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-4

Little Grizzly Creek below Tailings

Date 9/27 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter March McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm / Clear

Other ..... Air 62° F @ 1344

Gage ..... Water 9.6 °C @ 1346

..... Record removed ..... Intake flushed U .....

Observer .....

Control .....

pH 8.06

CONDUCTANCE 126.8 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1340

.0 .10 .20 .30 .40 .50 .60 .70 .78

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.4										
	2.5		<.05				0				
	3		.05				0				
	3.5		.1				0				
	4		.1				0				
	4.5		.1				0				
	5		.05				0				
	5.5		.1				.02				
	6		.2				.15				
	6.5		.35				.29				
	7		.4				.35				
	7.5		.3				.48				
	8		.5				.47				
	8.5		.5				.16				
	9		.5				.21				
	9.5		.35				.39				
	10		.25				.37				
	10.5		.35				.17				
	11		.325				.08				
	11.5		.25				.06				
RB	11.85										

.0 .10 .20 .30 .40 .50 .60 .70 .78

WALKER MINE TAILINGS MONITORING PROGRAM

9-276a-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-5

Little Grizzly Creek @ Brown's Cabin

Date 9/27 2012 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter Marsh McBirney

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm / Clear

Other ..... Air 68°F @ 1639

Gage ..... Water 10.1 °C @ 1641

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.25

CONDUCTANCE 127.4 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1634

River at—

Angle coef. factor	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	2.3										
	2.5		.025				0				
	3		.125				.36				
	3.5		.2				.54				
	4		.5				.32				
	4.5		.2				.29				
	5		.25				.21				
	5.5		.35				.08				
	6		.45				.19				
	6.5		.45				.19				
	7		.6				.10				
	7.5		.4				.09				
	8		.5				.22				
	8.5		.45				.35				
	9		.45				.31				
	9.5		.4				.31				
	10		.25				.12				
	10.5		.025				0				
RB	10.6										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-p
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-6
Sediment Basin Outlet
Date 9/27, 2012 Party Flynn
Width ..... Area ..... Vel. ..... G. H. ..... Ditch. .....
Method ..... No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter .....
Date rated .... for rod, other.
Meter ..... ft. above bottom of weight.
Spin before meas. ..... after .....
Meas. plots .... % diff. from rating .....
Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....
Check-bar, found .....
changed to ..... at .....
Correct .....
Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....
Flow ..... Weather Dry / Warm / clear
Other ..... Air .....°C@ .....
Gage ..... Water .....°C@ .....
..... Record removed ..... Intake flushed .....
Observer .....
.....
Control .....
.....
pH .....
.....
CONDUCTANCE ..... umhos/cm
G. H. of zero flow ..... ft.

No Flow / No Samples

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
	No Flow (Dry)										

.0 .10 .20 .30 .40 .50 .60 .70 .75

ENVIRONMENTAL

www.fgtinc.com

Monthly

CHAIN OF CUSTODY

Laboratory Copy (1 of 3)

72914:09/03/2012

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Client: Plumas National Forest-Walker Mine

Address: Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Phone: (530)283-7712 Fax:

Contact Person: Ryan Nupen

Project Name: **Water Quality Monitoring**

Purchase Order Number:

Quote Number:

Sampler(s): Pat Flynn

Sampling Fee: _____ Pickup Fee: _____

Compositor Setup Date: ___/___/___ Time: ___/___

Lab Number: CH 1276221 7-10917

Method of Sampling: Composite(C) Grab(G)

Type of Sample **SEE REVERSE SIDE**

Potable(P) Non-Potable(NP) Ag Water(AgW)

Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)

Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling	Type of Sample	Potable	Bacti Type	Bacti Reason	Metals, Diss-Cu,Hardness,Fe,Zn 250ml(P) pH 25°C (HNO3)	Wet Chemistry-SO4,pH,Alk. (CaCO3) [redacted] 16oz(P), 8oz(P)	Wet Chemistry-Turbidity 250 ml(AGT)
1	R1	9/27	1532	G	DW	NP			1	1,1	1
~~2~~	~~R2~~			~~G~~	~~DW~~				~~1~~	~~1,1~~	~~1~~
2	R3	9/27	1442	G	DW				1	1,1	1
3	R4	9/27	1340	G	DW				1	1,1	1
4	R5	9/27	1634	G	DW				1	1,1	1
~~6~~	~~R6~~			~~G~~	~~DW~~				~~1~~	~~1,1~~	~~1~~
5	W3	9/27	1245	G	DW				1	1,1	
6	W5	9/27	1108	G	DW				1	1,1	
7	W7	9/27	0930	G	DW				1	1,1	

Remarks:

Seasonal: June-September

Routine TAT

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
Pat Flynn	9/28/12	1200	Ryan Nupen	10/2/12	0805	Bill N. Hal	10/2/12	1500

Received By:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:
Ryan Nupen	9/28/12	12:00	Bill N. Hal			CP		

Pel CP 10/2/12 1700

Rec entire

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: 805/392-2000
FAX: 805/525-4172

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: 209/942-0182
FAX: 209/942-0423

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: 530/343-5818
FAX: 530/343-3807

Office & Laboratory
3434 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: 805/783-2940
FAX: 805/525-4172

Field Office
Visalia, California
TEL: 559/734-9473
Mobile: 559/737-2399
FAX: 559/734-8435

ONTRAC Special B 0400

Types of Samples

LIQUIDS

(DW)	Drinking Water
(GW)	Ground Water
(MW)	Monitoring Water
(SW)	Surface Water
(TB)	Travel Blank
(WW)	Waste Water
(AgW)	Ag Water

SOLIDS

(Oil)	Oil
(S)	Soil
(Sld)	Solid
(Slg)	Sludge

TISSUE

(LF)	Leaf Tissue
(Pet)	Petiole Tissue
(Prd)	Produce
(Tsu)	Tissue

BACTI

(Sys)	System
(Src)	Source
(W)	Waste

OTHER

(AF)	Air Filter
(Oth)	Other_____
(Swp)	Swipe

Types of Perservatives

KEEP ALL SAMPLES COOL

BLUE	HCl pH ≤ or NH4 Cl
YELLOW	H2SO4 pH ≤ 2
RED	HNO3 pH 2
BLACK	Monochloroacetic Buffer
GREEN	NaOH pH ≥ 12 or NaOH + Zinc Acetate
BLACK	Na2S203
WHITE	Other_____

Types of Containers

(at)	Amber Glass TFE-Cap
(av)	Amber Glass VOA TFE-Cap
(b)	Brass Tube
(g)	Glass Jar
(gt)	Glass TFE-Cap
(m)	Metal Tube
(o)	Other_____
(p)	Plastic
(s)	Bag
(v)	Glass VOA TFE-Cap

Conversions

8oz.=	half print	= 1 cup
16oz. =	pint	= 2 cups
32oz. =	quart	= 4 cups
1 L. =	1000 ml	-1 quart

CONTAINER - PRESERVATIVE:

The type of container(s) to be used is listed with the Test Description on the Chain of Custody.

Eg. Oil & Grease, EPA 624
cont. 32oz.(p)-H2SO4 & 40ml(av)--HCl

The number of containers to fill is specified by a number(s) in the sample Location/Description --Test Description Intersection.

Eg. I 1,2 I

This example is read as ONE (1) container of size 32oz. made of Plastic (p); preserved with H2SO4 plus TWO (2) containers of size 40 ml type amber glass VOA (av) preserved with HCl.

COLOR CODING OF PRESERVATIVE LABELS:

All Containers which contain a preservative are marked with a Color printed Label. The color scheme conforms to industry standards, where applicable, and is provided as a quick reference for locating the correct container. The appropriate colors for the different preservatives can be found to the left under TYPE OF PRESERVATIVES.

REQUESTED INFORMATION:

The person responsible for sampling should fill out the Section pertaining to the sampler. For each sampling event, the date and time of the sampling should be recorded in the space provided. If the sample is a liquid, the potability of the sample should be indicated if the water is for human consumption. If there are any additions or changes to the test descriptions indicated, please make the appropriate modifications on this form. The sampler should SIGN and DATE the Chain of Custody prior to the samples being relinquished to the transporter. The FIELD copy should be retained by a responsible party at the sampling site. The remaining Chain of Custody should be returned to FGL with the samples.

Chico - Condition Upon Receipt (Attach to COC)

Sample Receipt at CH:

1. Number of ice chests/packages received: 1
2. Were samples received in a chilled condition? Temps: ROI ____ / ____ / ____ / ____
   Acceptable is above freezing to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
3. Do the number of bottles received agree with the COC? Yes No N/A
4. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
5. Were sample custody seals intact? N/A Yes No

Sign and date the COC, place in a ziplock and put in the same ice chest as the samples.
Sample Receipt Review completed by (initials): _____

Sample Receipt at SP:

1. Were samples received in a chilled condition? Temps: 6 / 6 / ____ / ____ / ____
   Acceptable is above freezing to 6° C. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
2. Do the number of bottles received agree with the COC? Yes No N/A
3. Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
4. Were sample custody seals intact? N/A Yes No

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? Yes No
2. Did bottle labels correspond with the client's ID's? Yes No
3. Were all bottles requiring sample preservation properly preserved? Yes No N/A FGL
4. VOA's Checked for Headspace? Yes No N/A
5. Were all analyses within holding times at time of receipt? Yes No
6. Have rush or project due dates been checked and accepted? N/A Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials): _____

Discrepancy Documentation:

Any items above which are "No" or do not meet specificatio

1. Person Contacted: _____
   Initiated By: _____
   Problem:

   Resolution:

(7-10917)

Plumas National Forest-Walker Mine

CH 1276221

NMB-10/03/2012-09:37:08

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
SEPTEMBER 2012

CONSTITUENT	UNIT	DETECTION LIMIT	W-1A	W-2	W-3	W-4	W-5	W-6	W-7*
				WELL SITES					
Field Parameters									
Ground Surface Elevation	ft	0.01	N/A	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	N/A	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	11.53	3.86	7.07	23.99	12.30	7.69	1.62
Water Surface Elevation	ft	0.01	N/A	5737.88	5731.76	5744.01	5741.79	5740.18	5753.29
Laboratory									
Total Hardness as CaCO3	mg/l	2.5	N/A	N/A	172.0	N/A	174.0	N/A	33.2
Total Alkalinity	mg/l	10.0	N/A	N/A	110.0	N/A	40.0	N/A	40.0
Sulfate	mg/l	2.0	N/A	N/A	76.0	N/A	157.0	N/A	ND
Dissolved Iron	mg/l	0.05	N/A	N/A	0.68	N/A	24.80	N/A	ND
Dissolved Copper	ug/l	10.0	N/A	N/A	ND	N/A	ND	N/A	ND
Dissolved Zinc	ug/l	20.0	N/A	N/A	ND	N/A	ND	N/A	60.000

*W-7 is located upgradient and off-site in a wet area. The data collected from this well are used for background comparisons.

[1] ND is not detected at or above the detection limit

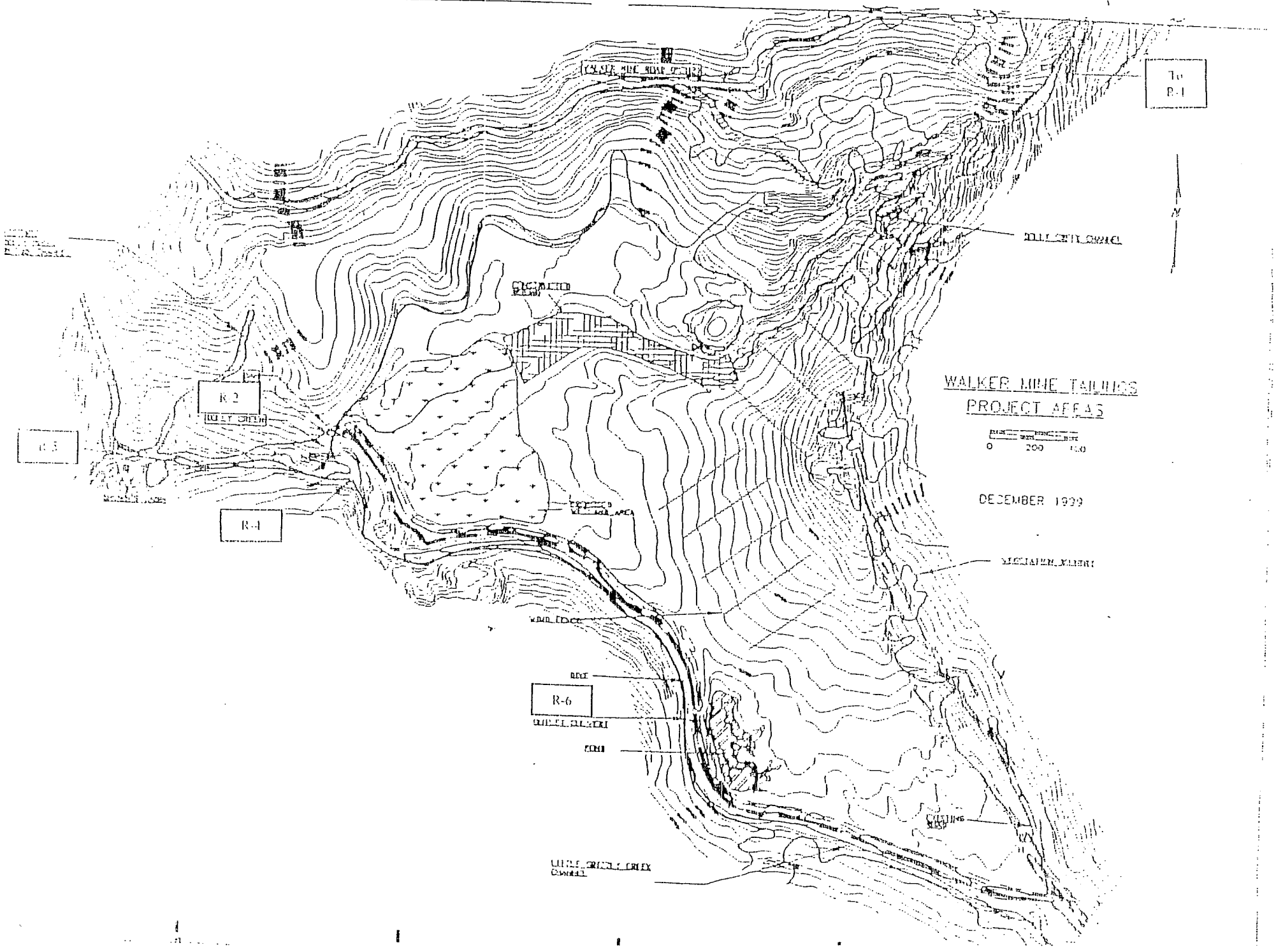
WALKER TAILINGS
GROUNDWATER MONITORING PROGRAM

FLUID LEVEL GAUGING

SITE LOCATION: Walker Mine DATE: 9/27/12
COMPANY NAME: Sierra Env.
PERSONNEL: Flynn

WELL	TIME	DEPTH TO WATER	COMMENTS
W-1A	1139	11.53	
2	1202	3.86	
3	1211	7.07	
4	1127	23.99	
5	1028	12.30	
6	1015	7.69	
7	0906	1.62	

Note: Water Level Measurements ±.01'


To R-1
R-2
R-3
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
DECEMBER 1999
N

Water-Quality Sampling Information

Project Number: —

Page 1 of 1

Project Name: Walker Mine Tailings

Date: 9/27/12

Project Location: Walker Mine

Day: M T W (Th) F S S

Site Conditions/Weather: Dry / Cool - Clear

Staff: Flynn

Comments: Outside Temp: 44°F

SAMPLING METHOD

- [ ] Centrifugal Pump
- [ ] Submersible Pump
- [ ] Hand Bail
- [x] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-7

- [ ] FB:
- [ ] DUP:

Analysis Requested

Diss. Cu, Fe, Zn
Hardness, Alk, pH

Number and Types of Bottle Used

Calculation Area

Height of water column =
Depth to water =

80% DTW

Method of shipment

FGL
(lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-7
Depth of Water: 1.62
Well Depth: 11.00
Height of Water Column: 9.38
Volume in Well: (gallons) 1.50
3 Well Volumes: (gallons) 4.50

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
0908								Start Purge
0912		2		7.8	6.55	56.3	17.39	Low Tb / No odor
0919		4		7.3	6.34	55.0	24.90	" "
0926		6		7.2	6.33	54.3	69.08	Mod Tb / "
0930								Sample W-7

Inlet Depth: _____

Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: —

Page 1 of 1

Project Name: Walker Mine Tailings

Date: 9/27/12

Project Location: Walker Mine

Day: M T W (Th) F S S

Site Conditions/Weather: Dry / Warm - Clear

Staff: Flynn

Comments: Use riser extension above 2" casing to decrease chance of airbourne contamination, while sampling. Outsite temp: 67°F

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump 2" Grundfos
- [ ] Hand Bail
- [ ] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-5

- [ ] FB:
- [ ] DUP:

Analysis Requested: Diss. Cu, Fe, Zn; Hardness, Alk, pH

Number and Types of Bottle Used

Calculation Area

Height of water column =

Depth to water =

80% DTW

Method of shipment: FGL (lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-5

Depth of Water: 12.30

Well Depth: 40.30

Height of Water Column: 28.00

Volume in Well: (gallons) 4.48

3 Well Volumes: (gallons) 13.44

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1041						348		Start pH
1099		5		10.4	7.00	[redacted]	11.3	Low Tb / No odor
1057		10		10.2	7.06	341	5.1	" "
1105		16		10.1	7.07	341	4.4	" "
1108								Sample W-5

Inlet Depth: _____

Signed: _____ Date: _____

Water-Quality Sampling Information

Page 1 of 1

Project Number: —

Project Name: Walker Mine Tailings

Date: 9/27/12

Project Location: Walker Mine

Day: M T W (Th) F S S

Site Conditions/Weather: Dry / Warm - Clear

Staff: Flynn

Comments: Riser extension (2" Pipe) used to decrease chances of airbourne contamination, while sampling
Outside Temp: 71°F

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump 2" Grundfos
- [ ] Hand Bail
- [ ] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-3

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested
Diss. Cu, Fe, Zn
Hardness, Alk, pH

Number and Types of Bottle Used

Calculation Area
Height of water column =
Depth to water =
80% DTW _____

Method of shipment
FGL
(lab name)

- [ ] Courier
- [ ] Hand Deliver

Well Number: W-3
Depth of Water: 7.07
Well Depth: 34.25
Height of Water Column: 27.18
Volume in Well: (gallons) 4.35
3 Well Volumes: (gallons) 13.05

Well Diameter: 2"

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1218								Start Purge
1224		5		14.8	7.60	298	8.3	Low TD / No odor
1235		10		12.6	7.99	290	5.4	" "
1242		15		12.1	8.03	287	4.9	" "
1245								Sample W-3

Inlet Depth: _____

Signed: _____ Date: _____

October 17, 2012

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Lab ID : CH 1276221
Customer : 7-10917

Laboratory Report

Introduction: This report package contains total of 11 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(7 pages)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
R1	09/27/2012	10/02/2012	CH 1276221-001	DW
R3	09/27/2012	10/02/2012	CH 1276221-002	DW
R4	09/27/2012	10/02/2012	CH 1276221-003	DW
R5	09/27/2012	10/02/2012	CH 1276221-004	DW
W3	09/27/2012	10/02/2012	CH 1276221-005	DW
W5	09/27/2012	10/02/2012	CH 1276221-006	DW
W7	09/27/2012	10/02/2012	CH 1276221-007	DW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CH 1276221-001	Turbidity	48	144.47 Hours
CH 1276221-002	Turbidity	48	145.3 Hours
CH 1276221-003	Turbidity	48	146.33 Hours
CH 1276221-004	Turbidity	48	143.43 Hours

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

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October 17, 2012
Plumas National Forest

Lab ID : CH 1276221
Customer : 7-10917

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	10/03/2012:214659 All analysis quality controls are within established criteria
	10/03/2012:211034 All preparation quality controls are within established criteria

Inorganic - Wet Chemistry QC

2130B	10/03/2012:214850 All analysis quality controls are within established criteria
	10/03/2012:211214 All preparation quality controls are within established criteria
2320B	10/04/2012:214676 All analysis quality controls are within established criteria
	10/04/2012:211067 All preparation quality controls are within established criteria
300.0	10/06/2012:214807 All analysis quality controls are within established criteria
	10/05/2012:211176 All preparation quality controls are within established criteria

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2012-10-17

October 17, 2012

Lab ID : CH 1276221-001
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-15:32
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : R1
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:T5]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	66.2	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	15	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	7	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	0.20	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	20	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	70	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	90	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	ND	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807
Turbidity	3.6	0.2	NTU	5	2130B	10/03/12:211214	2130B	10/03/12:214850

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012

Lab ID : CH 1276221-002
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-14:42
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : R3
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1,5]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	53.0	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	13	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	5	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	0.30	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	ND	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	60	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	80	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	ND	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807
Turbidity	1.7	0.2	NTU	5	2130B	10/03/12:211214	2130B	10/03/12:214850

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012

Lab ID : CH 1276221-003
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-13:40
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : R4
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:15]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	77.1	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	21	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	6	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	0.16	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	ND	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	80	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	90	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	14	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807
Turbidity	1.9	0.2	NTU	5	2130B	10/03/12:211214	2130B	10/03/12:214850

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012

Lab ID : CH 1276221-004
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-16:34
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : R5
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1'5]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	77.1	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	21	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	6	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	0.12	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	ND	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	80	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	90	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	14	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807
Turbidity	1.6	0.2	NTU	5	2130B	10/03/12:211214	2130B	10/03/12:214850

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012

Lab ID : CH 1276221-005
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-12:45
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : W3
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:T5]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	172	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	59	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	6	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	0.68	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	ND	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	110	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	140	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	76	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012

Lab ID : CH 1276221-006
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-11:08
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : W5
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1,5]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	174	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	63	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	4	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	24.8	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	ND	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	40	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	50	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	157	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012

Lab ID : CH 1276221-007
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : September 27, 2012-09:30
Sampled By : Pat Flynn
Received On : October 2, 2012-15:00
Matrix : Drinking Water

Description : W7
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:T5]								
Copper	ND	10	ug/L	1000[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Total Hardness as CaCO3	33.2	2.5	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Calcium	10	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Magnesium	2	1	mg/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Iron	ND	0.05	mg/L	0.3[2]	200.7	10/03/12:211034	200.7	10/03/12:214659
Zinc	60	20	ug/L		200.7	10/03/12:211034	200.7	10/03/12:214659
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	40	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Bicarbonate	50	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Carbonate	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Hydroxide	ND	10	mg/L		2320B	10/04/12:211067	2320B	10/04/12:214676
Sulfate	ND	2	mg/L	500[2]	300.0	10/05/12:211176	300.0	10/06/12:214807

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: HNO3 pH < 2 ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 17, 2012
Plumas National Forest

Lab ID : CH 1276221
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	(CC 1283111-001)	MS	mg/L	12.00	68.4 %	<¼	
			MSD	mg/L	12.00	55.8 %	<¼	
			MSRPD	mg/L	3996	1.1%	≤20.0	
	200.7	10/03/12:214659ac	CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.0005	1.0	
			CCV	ppm	25.00	99.1 %	90-110	
			CCB	ppm		-0.0006	1.0	
			CCV	ppm	25.00	99.4 %	90-110	
			CCB	ppm		0.0009	1.0	
Copper	200.7	(CC 1283111-001)	MS	ug/L	800.0	104 %	75-125	
			MSD	ug/L	800.0	99.8 %	75-125	
			MSRPD	ug/L	3996	4.5%	≤20.0	
	200.7	10/03/12:214659ac	CCV	ppm	1.000	103 %	90-110	
			CCB	ppm		-0.0009	0.01	
			CCV	ppm	1.000	101 %	90-110	
			CCB	ppm		-0.0008	0.01	
			CCV	ppm	1.000	101 %	90-110	
			CCB	ppm		-0.001	0.01	
Iron	200.7	(CC 1283111-001)	MS	ug/L	3992	104 %	75-125	
			MSD	ug/L	3992	99.7 %	75-125	
			MSRPD	ug/L	3996	3.2%	≤20.0	
	200.7	10/03/12:214659ac	CCV	ppm	5.000	102 %	90-110	
			CCB	ppm		0.0012	0.05	
			CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		0.0060	0.05	
			CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		0.0019	0.05	
Magnesium	200.7	(CC 1283111-001)	MS	mg/L	12.00	85.2 %	75-125	
			MSD	mg/L	12.00	84.9 %	75-125	
			MSRPD	mg/L	3996	0.06%	≤20.0	
	200.7	10/03/12:214659ac	CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		-0.001	1.0	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.003	1.0	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		-0.0002	1.0	
Zinc	200.7	(CC 1283111-001)	MS	ug/L	800.0	98.8 %	75-125	
			MSD	ug/L	800.0	95.7 %	75-125	
			MSRPD	ug/L	3996	3.2%	≤20.0	
	200.7	10/03/12:214659ac	CCV	ppm	1.000	103 %	90-110	
			CCB	ppm		-0.0004	0.02	
			CCV	ppm	1.000	102 %	90-110	
			CCB	ppm		0.0011	0.02	
			CCV	ppm	1.000	102 %	90-110	
			CCB	ppm		-0.0001	0.02	
Wet Chem								
Turbidity	2130B	(CH 1276221-001)	Dup	NTU		0.6%	2.47	
	2130B	10/03/12:214850JAM	CCB	NTU		0.085	0.2	
			CCV	NTU	2.000	101 %	90-110	
			CCB	NTU		0.098	0.2	
			CCV	NTU	2.000	100 %	90-110	
Alkalinity (as CaCO3)	2320B	(CH 1276221-001)	Dup	mg/L		1.8%	3.42	
	2320B	10/04/12:214676AMB	CCV	mg/L	234.9	100 %	90-110	
			CCV	mg/L	234.9	103 %	90-110	
Bicarbonate	2320B	(CH 1276221-001)	Dup	mg/L		1.6%	4.78	

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October 17, 2012
Plumas National Forest

Lab ID : CH 1276221
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Carbonate	2320B	(CH 1276221-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(CH 1276221-001)	Dup	mg/L		0.0	10	
Sulfate	300.0	10/05/12:211176CHL	LCS	mg/L	50.00	102 %	90-110	
			MS	mg/L	1000	103 %	78-137	
		(SP 1210202-001)	MSD	mg/L	1000	103 %	78-137	
			MSRPD	mg/L	100.0	0.8%	≤12.3	
	300.0	10/06/12:214807CHL	CCB	ppm		0.27	2	
			CCV	ppm	50.00	102 %	90-110	
			CCB	ppm		0.42	2	
			CCV	ppm	50.00	102 %	90-110	
			CCB	ppm		0.46	2	
			CCV	ppm	50.00	102 %	90-110	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Location: R-1						
Date: 09/27/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Good						
Channel Width (ft):		5.6	**X-sectional Area (ft^2):**		3.51	
Hydraulic Depth (ft):		0.63	**Average Velocity (fps):**		0.08	
			Discharge (cfs):		0.34	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
1.7	Lew					
2	0.4	0.350	0.140	0.000	0.000	
2.5	0.5	0.650	0.325	0.000	0.000	
3	0.5	0.600	0.300	0.000	0.000	
3.5	0.5	0.700	0.350	0.010	0.004	
4	0.5	0.800	0.400	0.070	0.028	
4.5	0.5	0.900	0.450	0.030	0.014	
5	0.5	0.850	0.425	0.010	0.004	
5.5	0.5	0.800	0.400	0.230	0.092	
6	0.5	0.750	0.375	0.520	0.195	
6.5	0.5	0.600	0.300	0.000	0.000	
7	0.4	0.100	0.040	0	0.000	
7.3	REW					
Percent Error (%)		58.0%				

Location: R-2						
Date: 09/27/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		0.00	**X-sectional Area (ft^2):**		0.00	
Hydraulic Depth (ft):			**Average Velocity (fps):**			
			Discharge (cfs):			
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
		NO SAMPLES / NO FLOW				
Percent Error (%)						

Location: R-3						
Date: 09/27/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: GOOD						
Channel Width (ft):		5.85	**X-sectional Area (ft^2):**		2.21	
Hydraulic Depth (ft):		0.38	**Average Velocity (fps):**		0.06	
			Discharge (cfs):		0.17	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.50	LEW					
3.00	0.50	0.125	0.113	0.000	0.000	
3.50	0.50	0.23	0.125	0.000	0.000	
4.00	0.50	0.25	0.188	0.030	0.006	
4.50	0.50	0.38	0.200	0.040	0.008	
5.00	0.50	0.40	0.325	0.110	0.036	
5.50	0.50	0.65	0.350	0.050	0.018	
6.00	0.50	0.70	0.250	0.030	0.008	
6.50	0.50	0.50	0.288	0.160	0.046	
7.00	0.50	0.58	0.275	0.130	0.036	
7.50	0.50	0.55	0.100	0.090	0.009	
8.00	0.43	0.20	0.000	0.000	0.000	
8.35	REW					
Percent Error (%)		27.9%				

Location: R-4					
Date:09/27/2012					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating:	Good				
Channel Width (ft):		9.45	**X-sectional Area (ft^2):**		2.38
Hydraulic Depth (ft):		0.25	**Average Velocity (fps):**		0.17
			Discharge (cfs):		0.58
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
2.40	LEW				
2.50	0.30	0.05	0.015	0.000	0.000
3.00	0.50	0.05	0.025	0.000	0.000
3.50	0.50	0.10	0.050	0.000	0.000
4.00	0.50	0.10	0.050	0.000	0.000
4.50	0.50	0.10	0.050	0.000	0.000
5.00	0.50	0.05	0.025	0.000	0.000
5.50	0.50	0.10	0.050	0.020	0.001
6.00	0.50	0.20	0.100	0.150	0.015
6.50	0.50	0.35	0.175	0.290	0.051
7.00	0.50	0.40	0.200	0.350	0.070
7.50	0.50	0.30	0.150	0.480	0.072
8.00	0.50	0.50	0.250	0.470	0.118
8.50	0.50	0.50	0.250	0.160	0.040
9.00	0.50	0.50	0.250	0.210	0.053
9.50	0.50	0.35	0.175	0.390	0.068
10.00	0.50	0.25	0.125	0.370	0.046
10.50	0.50	0.35	0.175	0.170	0.030
11.00	0.50	0.33	0.163	0.080	0.013
11.50	0.43	0.25	0.106	0.060	0.006
11.85					
Percent Error (%)		20.4%			

Location: R-5						
Date: 09/27/2012						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		8.30	**X-sectional Area (ft^2):**		2.80	
Hydraulic Depth (ft):		0.34	**Average Velocity (fps):**		0.22	
			Discharge (cfs):		0.64	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.30	LEW					
2.50	0.35	0.025	0.009	0.000	0.000	
3.00	0.50	0.125	0.0625	0.360	0.023	
3.50	0.50	0.20	0.100	0.540	0.054	
4.00	0.50	0.50	0.250	0.320	0.080	
4.50	0.50	0.20	0.100	0.290	0.029	
5.00	0.50	0.25	0.125	0.210	0.026	
5.50	0.50	0.35	0.175	0.080	0.014	
6.00	0.50	0.45	0.225	0.190	0.043	
6.50	0.50	0.45	0.225	0.190	0.043	
7.00	0.50	0.60	0.300	0.100	0.030	
7.50	0.50	0.40	0.200	0.090	0.018	
8.00	0.50	0.50	0.250	0.220	0.055	
8.50	0.50	0.45	0.225	0.350	0.079	
9.00	0.50	0.45	0.225	0.310	0.070	
9.50	0.50	0.40	0.200	0.310	0.062	
10.00	0.50	0.25	0.125	0.120	0.015	
10.50	0.30	0.025	0.008	0.000	0.000	
10.60	REW					
Percent Error (%)		12.5%				