Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-08/2			
Lab Sample ID:	C11216-1		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	486	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	41400	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	732	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	19800	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	70.5	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	< 0.20	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	9.5	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	1560	500	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	6620	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	16100	100	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-08/2		
Lab Sample ID:	C11216-1	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	169	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	169	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 13:33	RL	EPA 300/SW846 9056A
Chloride	10.8	1.3	mg/l	2.5	06/01/10 21:52	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	4.1	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 13:33	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	185	0.33	mg/l	1	06/04/10 15:30	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 13:33	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	14.2	0.11	mg/l	1	06/04/10 15:30	CT	SW846 6010B
Solids, Total Dissolved	231	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	414	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	32.4	1.3	mg/l	2.5	06/01/10 21:52	RL	EPA 300/SW846 9056A
Turbidity	26.9	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	7.91		su	1	05/28/10 13:12	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-08/2			
Lab Sample ID:	C11216-1F		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-07/2		
Lab Sample ID:	C11216-2	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Arsenic	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Boron	3120	250	ug/l	5	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Calcium	52000	250	ug/l	5	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Chromium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Copper	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Iron	665	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Magnesium	36700	250	ug/l	5	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Manganese	381	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Mercury	0.64	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [2]	EPA 245.1/SW7470A [4]
Nickel	345	25	ug/l	5	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Potassium	3140	500	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Selenium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silicon	5930	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Sodium	56000	500	ug/l	5	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Thallium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Zinc	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]

(1) Instrument QC Batch: MA1238
(2) Instrument QC Batch: MA1239
(3) Instrument QC Batch: MA1243
(4) Prep QC Batch: MP2431
(5) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-07/2		
Lab Sample ID:	C11216-2	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	179	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	179	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 13:50	RL	EPA 300/SW846 9056A
Chloride	54.0	5.0	mg/l	10	06/01/10 22:45	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	4.3	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 13:50	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	281	1.7	mg/l	1	06/04/10 15:35	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 13:50	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	12.7	0.11	mg/l	1	06/02/10 20:09	CT	SW846 6010B
Solids, Total Dissolved	465	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	774	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	123	5.0	mg/l	10	06/01/10 22:45	RL	EPA 300/SW846 9056A
Turbidity	13.0	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	7.69		su	1	05/28/10 13:16	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-07/2		
Lab Sample ID:	C11216-2F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-09/2			
Lab Sample ID:	C11216-3		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Arsenic	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Boron	86800	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Calcium	409000	2500	ug/l	50	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Chromium	18.7	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Copper	43.2	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Iron	11100	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Magnesium	482000	2500	ug/l	50	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Manganese	6950	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Mercury	88.0	2.0	ug/l	10	06/01/10	06/02/10	RW	EPA 245.1 [2]	EPA 245.1/SW7470A [4]
Nickel	16000	250	ug/l	50	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Potassium	47000	500	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Selenium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silicon	16500	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Sodium	1260000	5000	ug/l	50	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Thallium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Zinc	368	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]

(1) Instrument QC Batch: MA1238
(2) Instrument QC Batch: MA1239
(3) Instrument QC Batch: MA1243
(4) Prep QC Batch: MP2431
(5) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-09/2		
Lab Sample ID:	C11216-3	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	5.9	1.0	mg/l	5	05/28/10 16:10	RL	EPA 300/SW846 9056A
Chloride	1750	100	mg/l	200	06/01/10 23:02	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	2.7	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride [a]	< 0.50	0.50	mg/l	5	05/28/10 16:10	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [b]	3010	17	mg/l	1	06/04/10 15:23	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	1.8	0.50	mg/l	5	05/28/10 16:10	RL	EPA 300/SW846 9056A
Silica, Dissolved [c]	35.3	0.11	mg/l	1	06/02/10 20:15	CT	SW846 6010B
Solids, Total Dissolved	7800	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	9810	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	4310	200	mg/l	400	06/02/10 11:37	RL	EPA 300/SW846 9056A
Turbidity	19.1	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [d]	4.52		su	1	05/28/10 13:19	PH	SM18 4500H+ B

(a) Elevated detection limit due to high concentration of Chloride.
(b) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(c) Calculated as: (Silicon * 2.139)
(d) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-09/2		
Lab Sample ID:	C11216-3F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	55.1	2.0	ug/l	10	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-10/2		
Lab Sample ID:	C11216-4	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Arsenic	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Boron	1920	150	ug/l	3	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Calcium	55900	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Chromium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Copper	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Iron	1330	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Magnesium	36500	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Manganese	623	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Mercury	0.21	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [2]	EPA 245.1/SW7470A [4]
Nickel	263	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Potassium	2120	500	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Selenium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silicon	7960	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Sodium	37300	300	ug/l	3	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Thallium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Zinc	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]

(1) Instrument QC Batch: MA1238
(2) Instrument QC Batch: MA1239
(3) Instrument QC Batch: MA1243
(4) Prep QC Batch: MP2431
(5) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-10/2		
Lab Sample ID:	C11216-4	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	248	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	248	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 14:25	RL	EPA 300/SW846 9056A
Chloride	27.5	3.0	mg/l	6	06/01/10 23:20	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	5.2	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 14:25	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	290	0.33	mg/l	1	06/02/10 20:21	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 14:25	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	17.0	0.11	mg/l	1	06/02/10 20:21	CT	SW846 6010B
Solids, Total Dissolved	447	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	711	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	101	3.0	mg/l	6	06/01/10 23:20	RL	EPA 300/SW846 9056A
Turbidity	7.1	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	7.41		su	1	05/28/10 13:26	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	MTD-SW-10/2		
Lab Sample ID:	C11216-4F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-06/2			
Lab Sample ID:	C11216-5		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo–Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Arsenic	< 10	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Boron	8660	500	ug/l	10	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Calcium	133000	500	ug/l	10	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Chromium	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Copper	34.2	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Iron	272	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Magnesium	195000	500	ug/l	10	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Manganese	3410	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Mercury	22.4	2.0	ug/l	10	06/01/10	06/02/10	RW	EPA 245.1 [2]	EPA 245.1/SW7470A [4]
Nickel	16600	50	ug/l	10	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Potassium	10900	500	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Selenium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silicon	25700	50	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Sodium	134000	1000	ug/l	10	06/02/10	06/04/10	CT	SW846 6010B [3]	SW3010A [5]
Thallium	< 20	20	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]
Zinc	245	10	ug/l	1	06/02/10	06/02/10	CT	SW846 6010B [1]	SW3010A [5]

(1) Instrument QC Batch: MA1238
(2) Instrument QC Batch: MA1239
(3) Instrument QC Batch: MA1243
(4) Prep QC Batch: MP2431
(5) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-06/2		
Lab Sample ID:	C11216-5	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	0.38	0.20	mg/l	1	05/28/10 14:43	RL	EPA 300/SW846 9056A
Chloride	102	13	mg/l	25	06/01/10 23:38	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	6.1	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 14:43	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	1140	3.3	mg/l	1	06/04/10 15:45	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 14:43	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	55.0	0.11	mg/l	1	06/02/10 21:18	CT	SW846 6010B
Solids, Total Dissolved	2000	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	2430	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	1610	50	mg/l	100	06/02/10 00:30	RL	EPA 300/SW846 9056A
Turbidity	0.97	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	4.48		su	1	05/28/10 13:27	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-06/2			
Lab Sample ID:	C11216-5F		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	13.8	1.0	ug/l	5	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-11/2			
Lab Sample ID:	C11216-6		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	971	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	48300	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	69.9	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	26900	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	11.9	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	< 0.20	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	808	500	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	7790	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	18000	100	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-11/2		
Lab Sample ID:	C11216-6	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	227	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	227	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 15:00	RL	EPA 300/SW846 9056A
Chloride	9.7	1.0	mg/l	2	06/02/10 00:48	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	2.4	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 15:00	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	231	0.33	mg/l	1	06/04/10 15:50	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 15:00	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	16.7	0.11	mg/l	1	06/04/10 15:50	CT	SW846 6010B
Solids, Total Dissolved	273	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	494	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	31.4	1.0	mg/l	2	06/02/10 00:48	RL	EPA 300/SW846 9056A
Turbidity	2.7	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	8.27		su	1	05/28/10 13:32	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-11/2		
Lab Sample ID:	C11216-6F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-16/2		
Lab Sample ID:	C11216-7	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	171	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	38200	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	5.1	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	2260	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	13900	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	90.1	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	< 0.20	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	1800	500	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	8130	50	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	10700	100	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	10.6	10	ug/l	1	06/02/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2433

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-16/2		
Lab Sample ID:	C11216-7	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	139	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	139	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 15:18	RL	EPA 300/SW846 9056A
Chloride	6.2	1.0	mg/l	2	06/02/10 01:05	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	4.2	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 15:18	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	153	0.33	mg/l	1	06/04/10 15:55	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	0.23	0.10	mg/l	1	05/28/10 15:18	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	17.4	0.11	mg/l	1	06/04/10 15:55	CT	SW846 6010B
Solids, Total Dissolved	190	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	335	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	19.3	1.0	mg/l	2	06/02/10 01:05	RL	EPA 300/SW846 9056A
Turbidity	45.8	1.0	NTU	2	05/28/10 12:10	EB	SM18 2130B
pH [c]	7.75		su	1	05/28/10 13:34	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-16/2			
Lab Sample ID:	C11216-7F		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Northern California
ACCUTEST Laboratories

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

SGRPCAPHR674

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest NC Job #: C11216

Client / Reporting Information

Company Name: The Source Group		
Address: 3451C Vincent Road		
City: Pleasant Hill	State: CA	Zip: 94523
Project Contact: Jon Philipp		
Phone #: 925-944-2856 x 316		
Samplers's Name: Jon Philipp		

Project Information

Project Name: Sunoco, Mt. Diablo	
Street:	
City: Clayton	State: CA
Project #: 01-SUN-050	
EMAIL: jphilipp@thesourcegroup.net	
Client Purchase Order #:	

Requested Analysis

Accutest Sample ID	Sample ID / Field Point / Point of Collection	Date	Time	Sampled by	Matrix	# of bottles	Cl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	Mercury (dissolved/total) - Lab filter	Priority Pollutant Metals (PP13)	Methyl Mercury [illegible] Caltest	General Chem ([illegible], TDS, EC, pH, [illegible])	Cations (B, K, Fe, Mn, Mg, Ca, Na, Si)	Hardness (Ca, Mg)	Anions (Cl, F, SO4, Br, NO3, [illegible])	Dissolved Organic Carbon (Lab-filtered from [illegible] poly)		Hold (Do not analyze)	EC 5/28/10	LAB USE ONLY
-1	MTD-SW-03/2	27-May	13:00	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-2	MTD-SW-07/2	27-May	13:30	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X		* EC 5/28/10		→ To be run as per client Email
-3	MTD-SW-08/2	27-May	13:15	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-4	MTD-SW-10/2	27-May	13:50	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-5	MTD-SW-06/2	27-May	10:50	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-6	MTD-SW-11/2	27-May	9:20	JP	SW	3	1		1		1				X	X	X	X	X	X	X	X				
-7	MTD-SW-16/2	27-May	12:45	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X		* EC 5/28/10		→ To be run as per Client Email

Matrix Codes

WW- Wastewater
GW- Ground Water
SW- Surface Water
SO- Soil
OI- Oil
WP- Wipe
LIQ - Non Aqueous Liquid
AIR
DW- Drinking Water (Perchlorate Only)

Turnaround Time (Business days)

Approved By/ Date:

- [x] 5 Day Standard
- [ ] 3 Day (50% markup)
- [ ] 2 Day (75% markup)
- [ ] 1 Day (100% markup)

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [x] Commercial "A" - Results with QC summaries
- [ ] Commercial "B+" - Results, QC, and chromatograms
- [ ] FULT1 - Level 4 data package
- [ ] EDF for Geotracker
- [ ] EDD Format ____

Provide EDF Global ID ____

Provide EDF Logcode ____

Comments / Remarks

Note that one sample is missing the small unpreserved poly. Do what you can to analyze the full suite. If you have to cut something out for lack of sample, call me.

4 Samples on Hold to be analyzed as per Client Email

250mL poly (HNO3) pH<2 (x9); [illegible] Amber ([illegible]) each (x9)
1 Liter poly each N/P (x9); [illegible] poly each N/P (x9)

(-6) used Sample from 1 Lit poly - N/P to filter for dissolved (Hg)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	5/28/10 1105	1 Vic Vasquez 5388	2 world courier	14:05 05/28/10	2 [signature]
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 6	Custody Seal #	Appropriate Bottle / Pres. (Y)/N; Labels match Coc? (Y) N; Headspace Y/N N/A; Separate Receipt Log (Y)N; Chiller (Y)/N	Cooler Temp. 4.8+0.3=5.1 °C

C11216: Chain of Custody

Page 1 of 2

Accutest Laboratories Northern California
Sample Receiving Check List

Job#: C11216
Sample Control Rep. Initial: EKl JM

SGRPCAPH 8694

Review Chain of Custody Chain of Custody is to be complete and legible.

- Are these regulatory (NPDES) samples? GW A — Yes / No
- Is pH requested? Yes / No
- N/A Was Client informed that hold time is 15 min? Yes / No Continue Yes / No
- Was ortho-Phosphate filtered with in 15 min? Yes / No Continue Yes / No
- Are sample within hold time? Yes / No
- Are sample in danger of exceeding hold-time Yes / No
- Existing Client? Yes / No Existing Project? Yes / No
- If No; Is Report to info complete and legible, including:
  - deliverable Name Address phone e-mail
  - Is Bill to info complete and legible, including:
  - PO# Credit card Contact address phone e-mail
  - Is Contact and/or Project Manager identified, including:
  - Phone e-mail
- Project name / number Special requirements? Yes / No
- Sample IDs / date & time of collection provided? Yes / No
- Is Matrix listed and correct? Yes / No
- Analyses listed we do or client has authorized a subcontract? Yes / No
- Chain is signed and dated by both client and sample custodian? Yes / No
- TAT requested available? Yes / No Approved by PM

Review Coolers:

- Were Coolers temperatures measured at ≤6°C? Cooler # 1 Temp 5.1 °C
  - If cooler is outside the ≤6°C, note down below the affected bottles in that cooler
  - Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)
- Shipment Received Method World Courier
- Custody Seals. Present: Yes / No If Yes: Unbroken: Yes / No

Review of Sample Bottles: If you answer no, explain in the side

- Chain matches bottle labels? Yes / No Sample bottle intact? Yes / No
- Is there enough sample volume in proper bottle for requested analyses? Yes / No
- Proper Preservatives? Yes / No Check pH on preserved samples except 1664, 625, 8270 and VOAs.
- Headspace-VOAs? Greater than 6mm in diameter Yes / No
  N/A List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues
-1	pH<2	250mL poly (w/ acid)
↓	↓	↓
-7		
		* methylmercury → subbed to Caltest.

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

\\Anc-srv-file1\d$\Entech-Data\Laboratory\SOPs\SOP_CompleteListing\SC001F1_1_Form1_SampleControl_SampleReceivingChecklist_2010-02-15.doc

3.1

3

C11216: Chain of Custody
Page 2 of 2

4

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/02/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.02	.02	0.0028	<0.20

Associated samples MP2430: C11216-1F, C11216-2F, C11216-3F, C11216-4F, C11216-5F, C11216-6F, C11216-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/02/10

Metal	C11217-1F Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	135	139	4	2240.0(a	70-130

Associated samples MP2430: C11216-1F, C11216-2F, C11216-3F, C11216-4F, C11216-5F, C11216-6F, C11216-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/02/10

Metal	C11217-1F Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	135	135	4	2140.0(a	2.9	20

Associated samples MP2430: C11216-1F, C11216-2F, C11216-3F, C11216-4F, C11216-5F, C11216-6F, C11216-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits	BSD Result	Spikelot HGPWS1	% Rec	BSD RPD	QC Limit
Prep Date:		06/02/10				06/02/10			
Mercury	1.9	2	95.0	85-115	2.0	2	100.0	5.1	

Associated samples MP2430: C11216-1F, C11216-2F, C11216-3F, C11216-4F, C11216-5F, C11216-6F, C11216-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.1.3
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.02	.02	-0.0054	<0.20

Associated samples MP2431: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10

Metal	C11216-1 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.0	3.8	4	95.0	70-130

Associated samples MP2431: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10

Metal	C11216-1 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	3.8	4	95.0	0.0	20

Associated samples MP2431: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

4.2.3

4

Prep Date: 06/01/10 06/01/10

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits	BSD Result	Spikelot HGPWS1	% Rec	BSD RPD	QC Limit
Mercury	1.9	2	95.0	85-115	1.9	2	95.0	0.0	

Associated samples MP2431: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2433
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/02/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	14	21		
Antimony	10	6.9	5.3	4.8	<10
Arsenic	10	4.4	3.1	-0.20	<10
Barium	5.0	.6	.7		
Beryllium	5.0	.1	.2	0.10	<5.0
Boron	50	8.6	11	8.2	<50
Cadmium	2.0	.3	.3	0.10	<2.0
Calcium	50	29	12	-27	<50
Chromium	5.0	.4	.6	0.0	<5.0
Cobalt	5.0	.4	.4		
Copper	5.0	.8	1.1	-0.90	<5.0
Iron	50	2.6	18	2.5	<50
Lead	5.0	3.5	1.3	-0.70	<5.0
Lithium	10	2.2	2.5		
Magnesium	50	9.6	13	-3.3	<50
Manganese	5.0	.1	.2	0.0	<5.0
Molybdenum	5.0	1.3	1		
Nickel	5.0	.8	.5	0.20	<5.0
Potassium	500	58	60	61.7	<500
Selenium	20	14	12	1.7	<20
Silicon	50	3.4	5.3	9.9	<50
Silver	5.0	.9	.7	-0.20	<5.0
Sodium	100	15	13	80.9	<100
Strontium	10	.3	2.4		
Thallium	20	6.5	6.4	-4.3	<20
Tin	50	2.3	2		
Titanium	2.0	.2	.2		
Vanadium	5.0	.7	.5		
Zinc	10	.9	1.1	0.50	<10

Associated samples MP2433: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2433
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/02/10

Metal	C11226-2 Original	MS	Spikelot MPIR1	% Rec	QC Limits
Aluminum	anr				
Antimony	0.0	482	500	96.4	80-120
Arsenic	0.0	475	500	95.0	80-120
Barium	anr				
Beryllium	0.0	486	500	97.2	80-120
Boron	98.0	573	500	95.0	80-120
Cadmium	0.0	472	500	94.4	80-120
Calcium	24800	24900	500	20.0 (a)	80-120
Chromium	0.0	487	500	97.4	80-120
Cobalt					
Copper	80.2	568	500	97.6	80-120
Iron	1370	1850	500	96.0	80-120
Lead	0.0	474	500	94.8	80-120
Lithium					
Magnesium	9990	10200	500	42.0 (a)	80-120
Manganese	107	586	500	95.8	80-120
Molybdenum	anr				
Nickel	2.9	484	500	96.2	80-120
Potassium	2570	7440	5000	97.4	80-120
Selenium	0.0	468	500	93.6	80-120
Silicon	3080	3290	250	84.0	80-120
Silver	0.0	500	500	100.0	80-120
Sodium	78200	77600	500	-120.0(a	80-120
Strontium					
Thallium	0.0	445	500	89.0	80-120
Tin					
Titanium					
Vanadium					
Zinc	10.6	481	500	94.1	80-120

Associated samples MP2433: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2433
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/02/10

Metal	C11226-2 Original	MSD	Spikelot MPIR1	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	0.0	477	500	95.4	1.0	20
Arsenic	0.0	464	500	92.8	2.3	20
Barium	anr					
Beryllium	0.0	484	500	96.8	0.4	20
Boron	98.0	567	500	93.8	1.1	20
Cadmium	0.0	467	500	93.4	1.1	20
Calcium	24800	24800	500	0.0 (a)	0.4	20
Chromium	0.0	481	500	96.2	1.2	20
Cobalt						
Copper	80.2	564	500	96.8	0.7	20
Iron	1370	1770	500	80.0	4.4	20
Lead	0.0	470	500	94.0	0.8	20
Lithium						
Magnesium	9990	10100	500	22.0 (a)	1.0	20
Manganese	107	583	500	95.2	0.5	20
Molybdenum	anr					
Nickel	2.9	478	500	95.0	1.2	20
Potassium	2570	7380	5000	96.2	0.8	20
Selenium	0.0	459	500	91.8	1.9	20
Silicon	3080	3260	250	72.0 (a)	0.9	20
Silver	0.0	496	500	99.2	0.8	20
Sodium	78200	77700	500	-100.0(a	0.1	20
Strontium						
Thallium	0.0	441	500	88.2	0.9	20
Tin						
Titanium						
Vanadium						
Zinc	10.6	475	500	92.9	1.3	20

Associated samples MP2433: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2433
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/02/10 06/02/10

Metal	BSP Result	Spikelot MPIR1	% Rec	QC Limits	BSD Result	Spikelot MPIR1	% Rec	BSD RPD	QC Limit
Aluminum	anr								
Antimony	466	500	93.2	80-120	475	500	95.0	1.9	
Arsenic	446	500	89.2	80-120	458	500	91.6	2.7	
Barium	anr								
Beryllium	467	500	93.4	80-120	473	500	94.6	1.3	
Boron	472	500	94.4	80-120	484	500	96.8	2.5	
Cadmium	460	500	92.0	80-120	468	500	93.6	1.7	
Calcium	457	500	91.4	80-120	474	500	94.8	3.7	
Chromium	483	500	96.6	80-120	491	500	98.2	1.6	
Cobalt									
Copper	466	500	93.2	80-120	473	500	94.6	1.5	
Iron	485	500	97.0	80-120	495	500	99.0	2.0	
Lead	470	500	94.0	80-120	477	500	95.4	1.5	
Lithium									
Magnesium	484	500	96.8	80-120	487	500	97.4	0.6	
Manganese	478	500	95.6	80-120	485	500	97.0	1.5	
Molybdenum	anr								
Nickel	481	500	96.2	80-120	490	500	98.0	1.9	
Potassium	4930	5000	98.6	80-120	4980	5000	99.6	1.0	
Selenium	446	500	89.2	80-120	464	500	92.8	4.0	
Silicon	257	250	102.8	80-120	264	250	105.6	2.7	
Silver	492	500	98.4	80-120	498	500	99.6	1.2	
Sodium	568	500	113.6	80-120	572	500	114.4	0.7	
Strontium									
Thallium	430	500	86.0	80-120	445	500	89.0	3.4	
Tin									
Titanium									
Vanadium									
Zinc	457	500	91.4	80-120	466	500	93.2	2.0	

Associated samples MP2433: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2433
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/02/10

Metal	C11226-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	0.00	0.00	NC	0-10
Arsenic	0.00	0.00	NC	0-10
Barium	anr			
Beryllium	0.00	0.00	NC	0-10
Boron	98.0	136	38.8 (a)	0-10
Cadmium	0.00	0.00	NC	0-10
Calcium	24800	24500	1.0	0-10
Chromium	0.00	0.00	NC	0-10
Cobalt				
Copper	80.2	79.0	1.5	0-10
Iron	1370	1360	0.6	0-10
Lead	0.00	0.00	NC	0-10
Lithium				
Magnesium	9990.	9980	0.0	0-10
Manganese	107	108	0.2	0-10
Molybdenum	anr			
Nickel	2.90	6.00	106.9(a)	0-10
Potassium	2570	2550	0.7	0-10
Selenium	0.00	0.00	NC	0-10
Silicon	3080	3000	2.6	0-10
Silver	0.00	0.00	NC	0-10
Sodium	78200	78000	0.3	0-10
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Vanadium				
Zinc	10.6	11.5	8.5	0-10

Associated samples MP2433: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2433 Methods: SW846 6010B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/02/10

Metal	Sample ml	Final ml	Raw	Corr **	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP2433: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN3890	5.0	0.0	mg/l	250	251	100.5	75-125%
Bromide	GP1783/GN3889	0.20	0.0	mg/l	5	4.78	95.6	90-110%
Chloride	GP1789/GN3906	0.50	0.0	mg/l	5	4.62	92.4	90-110%
Dissolved Organic Carbon	GP1782/GN3888	1.0	0.52	mg/l	25.0	25.2	100.9	75-125%
Fluoride	GP1783/GN3889	0.10	0.0	mg/l	5	4.84	96.8	90-110%
Nitrogen, Nitrate	GP1783/GN3889	0.10	0.0	mg/l	5	4.65	93.0	90-110%
Solids, Total Dissolved	GN3886	10	0.0	mg/l				
Specific Conductivity	GN3877	1.0	0.0	umhos/cm				
Sulfate	GP1789/GN3906	0.50	0.0	mg/l	5	4.76	95.2	90-110%
Turbidity	GN3883	0.50	0.048	NTU	40	41.1	102.8	75-125%

Associated Samples:
Batch GN3877: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3883: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3886: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3890: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1782: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1783: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1789: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN3890	mg/l	250	251	0.0	
Bromide	GP1783/GN3889	mg/l	5	4.82	0.8	25%
Chloride	GP1789/GN3906	mg/l	5	4.61	0.2	25%
Dissolved Organic Carbon	GP1782/GN3888	mg/l	25.0	24.7	2.2	
Fluoride	GP1783/GN3889	mg/l	5	4.78	1.2	25%
Nitrogen, Nitrate	GP1783/GN3889	mg/l	5	4.65	0.0	25%
Sulfate	GP1789/GN3906	mg/l	5	4.74	0.4	25%
Turbidity	GN3883	NTU	40	40.9	0.5	

Associated Samples:
Batch GN3883: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3890: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1782: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1783: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1789: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN3890	C11107-4	mg/l	169	167	1.2	0-25%
Solids, Total Dissolved	GN3886	C11190-1	mg/l	692	685	1.0	0-%
Specific Conductivity	GN3877	C11216-1	umhos/cm	414	418	1.0	0-25%
Turbidity	GN3883	C11216-1	NTU	26.9	26.5	1.5	0-25%
pH	GN3876	C11216-1	su	7.91	7.93	0.3	0-25%

Associated Samples:
Batch GN3876: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3877: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3883: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3886: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GN3890: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP1783/GN3889	C11216-1	mg/l	0.0	4	3.7	92.5	80-120%
Chloride	GP1789/GN3906	C11216-1	mg/l	10.8	10	20.7	99.0	80-120%
Dissolved Organic Carbon	GP1782/GN3888	C11217-2	mg/l	6.6	25	30.2	94.1	75-125%
Fluoride	GP1783/GN3889	C11216-1	mg/l	0.027	4	3.6	89.3	80-120%
Nitrogen, Nitrate	GP1783/GN3889	C11216-1	mg/l	0.031	4	3.6	89.2	80-120%
Sulfate	GP1789/GN3906	C11216-1	mg/l	32.4	10	42.2	98.0	80-120%

Associated Samples:
Batch GP1782: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1783: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1789: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11216
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP1783/GN3889	C11216-1	mg/l	0.0	4	3.7	0.0	
Chloride	GP1789/GN3906	C11216-1	mg/l	10.8	10	20.7	0.0	
Dissolved Organic Carbon	GP1782/GN3888	C11217-2	mg/l	6.6	25	29.6	2.0	
Fluoride	GP1783/GN3889	C11216-1	mg/l	0.027	4	3.5	2.8	
Nitrogen, Nitrate	GP1783/GN3889	C11216-1	mg/l	0.031	4	3.6	0.0	
Sulfate	GP1789/GN3906	C11216-1	mg/l	32.4	10	42.1	0.2	

Associated Samples:
Batch GP1782: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1783: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
Batch GP1789: C11216-1, C11216-2, C11216-3, C11216-4, C11216-5, C11216-6, C11216-7
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Northern California
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Laboratories

IT'S ALL IN THE CHEMISTRY

06/07/10

Technical Report for

The Source Group

Mt. Diablo- Marsh Creek Road, Clayton, CA

SUNOCO

Accutest Job Number: C11217

Sampling Date: 05/27/10

Report to:

The Source Group
3451C Vincent Road
Pleasant Hill, CA 94523
jphilipp@thesourcegroup.net

ATTN: Jon Philipp

Total number of pages in report: **46**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242)

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Test results relate only to samples analyzed.

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Sample Summary

The Source Group

Job No: C11217

Mt. Diablo- Marsh Creek Road, Clayton, CA
Project No: SUNOCO

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
C11217-1	05/27/10	12:00 JP	05/28/10	AQ	Surface Water	MTD-SW-02/2
C11217-1F	05/27/10	12:00 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-02/2
C11217-2F	05/27/10	12:15 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-04/2
C11217-3	05/27/10	09:20 JP	05/28/10	AQ	Surface Water	MTD-SW-12/2
C11217-3F	05/27/10	09:20 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-12/2
C11217-4	05/27/10	09:30 JP	05/28/10	AQ	Surface Water	MTD-SW-13/2
C11217-4F	05/27/10	09:30 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-13/2
C11217-5	05/27/10	10:05 JP	05/28/10	AQ	Surface Water	MTD-SW-14/2
C11217-5F	05/27/10	10:05 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-14/2
C11217-6	05/27/10	11:15 JP	05/28/10	AQ	Surface Water	MTD-SW-15/2
C11217-6F	05/27/10	11:15 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-15/2
C11217-7	05/27/10	13:10 JP	05/28/10	AQ	Surface Water	MTD-SW-05/2
C11217-7F	05/27/10	13:10 JP	05/28/10	AQ	Surface H2O Filtered	MTD-SW-05/2

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-02/2		
Lab Sample ID:	C11217-1	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	21.9	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	47.6	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	18000	500	ug/l	10	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	178000	500	ug/l	10	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	309	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	94.3	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	83800	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	7.6	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	136000	500	ug/l	10	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	3410	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	161	10	ug/l	50	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	11000	50	ug/l	10	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	14500	500	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	13600	500	ug/l	10	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	251000	1000	ug/l	10	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	276	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2440

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-02/2		
Lab Sample ID:	C11217-1	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	0.92	0.20	mg/l	1	05/28/10 17:03	RL	EPA 300/SW846 9056A
Chloride	333	50	mg/l	100	06/02/10 01:23	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	9.2	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 17:03	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	1000	3.3	mg/l	1	06/04/10 16:53	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	1.3	0.10	mg/l	1	05/28/10 17:03	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	29.1	1.1	mg/l	1	06/04/10 16:53	CT	SW846 6010B
Solids, Total Dissolved	3060	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	3860	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	3450	100	mg/l	200	06/02/10 11:55	RL	EPA 300/SW846 9056A
Turbidity	261	5.0	NTU	10	05/28/10 12:10	EB	SM18 2130B
pH [c]	3.13		su	1	05/28/10 13:35	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-02/2		
Lab Sample ID:	C11217-1F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	135	5.0	ug/l	25	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-12/2			
Lab Sample ID:	C11217-3		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	941	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	47100	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	< 50	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	25700	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	< 0.20	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	717	500	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	7830	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	17400	100	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2440

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-12/2		
Lab Sample ID:	C11217-3	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	223	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	223	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	4.7	0.20	mg/l	1	05/28/10 18:13	RL	EPA 300/SW846 9056A
Chloride	9.6	1.0	mg/l	2	06/02/10 01:58	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	2.6	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 18:13	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	223	0.33	mg/l	1	06/04/10 17:15	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 18:13	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	16.7	0.11	mg/l	1	06/04/10 17:15	CT	SW846 6010B
Solids, Total Dissolved	261	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	494	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	29.5	1.0	mg/l	2	06/02/10 01:58	RL	EPA 300/SW846 9056A
Turbidity	1.5	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	8.20		su	1	05/28/10 13:44	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-12/2		
Lab Sample ID:	C11217-3F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-13/2			
Lab Sample ID:	C11217-4		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	10.4	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	953	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	49700	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	89.4	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	28200	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	5.8	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	< 0.20	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	6.2	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	898	500	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	7720	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	18200	100	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2440

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-13/2		
Lab Sample ID:	C11217-4	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	229	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	233	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 18:31	RL	EPA 300/SW846 9056A
Chloride	10.2	1.3	mg/l	2.5	06/02/10 02:15	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	2.6	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 18:31	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	240	0.33	mg/l	1	06/04/10 16:31	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 18:31	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	16.5	0.11	mg/l	1	06/04/10 16:31	CT	SW846 6010B
Solids, Total Dissolved	301	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	526	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	39.2	1.3	mg/l	2.5	06/02/10 02:15	RL	EPA 300/SW846 9056A
Turbidity	3.0	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	8.37		su	1	05/28/10 13:46	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-13/2		
Lab Sample ID:	C11217-4F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-14/2			
Lab Sample ID:	C11217-5		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	761	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	22800	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	6.4	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	987	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	20400	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	194	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	1.3	0.20	ug/l	1	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	587	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	2080	500	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	15100	50	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	20900	100	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	13.8	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2440

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-14/2			
Lab Sample ID:	C11217-5		**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water		**Date Received:**	05/28/10
			Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA			

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	39.8	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	39.8	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	< 0.20	0.20	mg/l	1	05/28/10 18:48	RL	EPA 300/SW846 9056A
Chloride	14.8	1.0	mg/l	2	06/02/10 02:33	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	3.7	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride	< 0.10	0.10	mg/l	1	05/28/10 18:48	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [a]	141	0.33	mg/l	1	06/04/10 17:20	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate	< 0.10	0.10	mg/l	1	05/28/10 18:48	RL	EPA 300/SW846 9056A
Silica, Dissolved [b]	32.3	0.11	mg/l	1	06/04/10 17:20	CT	SW846 6010B
Solids, Total Dissolved	276	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	414	1.0	umhos/cm	1	05/28/10	PH	SM18 2510B/EPA 120.1
Sulfate	136	5.0	mg/l	10	06/02/10 02:50	RL	EPA 300/SW846 9056A
Turbidity	5.6	0.50	NTU	1	05/28/10 12:10	EB	SM18 2130B
pH [c]	5.94		su	1	05/28/10 13:50	PH	SM18 4500H+ B

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(b) Calculated as: (Silicon * 2.139)
(c) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-14/2		
Lab Sample ID:	C11217-5F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury	< 0.20	0.20	ug/l	1	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-15/2		
Lab Sample ID:	C11217-6	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	62.0	20	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic [a]	182	20	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	5.2	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	98900	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	357000	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	240	10	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	101	10	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	411000	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	13.4	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	567000	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	16000	250	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	107	4.0	ug/l	20	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	25000	250	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	53300	1000	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium [b]	< 40	40	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	38500	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	1290000	5000	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	1180	20	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2440

(a) Result confirmed by reanalysis.
(b) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-15/2		
Lab Sample ID:	C11217-6	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	5.5	1.0	mg/l	5	06/01/10 11:29	RL	EPA 300/SW846 9056A
Chloride	1570	150	mg/l	300	06/02/10 14:14	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	11.3	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride [a]	< 0.50	0.50	mg/l	5	06/01/10 11:29	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [b]	3230	17	mg/l	1	06/04/10 17:25	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate [c]	< 0.50	0.50	mg/l	5	06/01/10 11:29	RL	EPA 300/SW846 9056A
Silica, Dissolved [d]	82.4	5.3	mg/l	1	06/04/10 17:25	CT	SW846 6010B
Solids, Total Dissolved	9110	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	11400	2.0	umhos/cm	2	06/04/10	PH	SM18 2510B/EPA 120.1
Sulfate	5340	150	mg/l	300	06/02/10 14:14	RL	EPA 300/SW846 9056A
Turbidity	2650	50	NTU	100	05/28/10 12:10	EB	SM18 2130B
pH [e]	4.36		su	1	05/28/10 13:51	PH	SM18 4500H+ B

(a) Elevated detection limit due to high concentration of Chloride.
(b) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(c) Sample exceeded holding time due to reanalysis.
(d) Calculated as: (Silicon * 2.139)
(e) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-15/2		
Lab Sample ID:	C11217-6F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury [a]	55.6	2.0	ug/l	10	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

(a) Elevated reporting limit(s) due to matrix interference

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-05/2		
Lab Sample ID:	C11217-7	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	12.0	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Arsenic	< 10	10	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Beryllium	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Boron	139000	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Cadmium	< 2.0	2.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Calcium	549000	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Chromium	27.6	10	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Copper	27.6	10	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Iron	22900	100	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Lead	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Magnesium	546000	2500	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Manganese	6240	10	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Mercury	66.3	2.0	ug/l	10	06/01/10	06/02/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [3]
Nickel	9060	10	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Potassium	68300	1000	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Selenium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silicon	12800	100	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Silver	< 5.0	5.0	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Sodium	1760000	5000	ug/l	50	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Thallium	< 20	20	ug/l	1	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]
Zinc	180	20	ug/l	2	06/04/10	06/04/10	CT	SW846 6010B [2]	SW3010A [4]

(1) Instrument QC Batch: MA1239
(2) Instrument QC Batch: MA1243
(3) Prep QC Batch: MP2431
(4) Prep QC Batch: MP2440

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-05/2		
Lab Sample ID:	C11217-7	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface Water	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate	187	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/01/10	PH	SM18 4500CO2D
Alkalinity, Total as CaCO3	187	5.0	mg/l	1	06/01/10	PH	SM18 2320B
Bromide	8.7	1.0	mg/l	5	06/01/10 11:46	RL	EPA 300/SW846 9056A
Chloride	2370	300	mg/l	600	06/02/10 14:31	RL	EPA 300/SW846 9056A
Dissolved Organic Carbon	5.8	1.0	mg/l	1	05/28/10	RL	SM18 5310C
Fluoride [a]	< 0.50	0.50	mg/l	5	06/01/10 11:46	RL	EPA 300/SW846 9056A
Hardness, Total as CaCO3 [b]	3620	17	mg/l	1	06/04/10 17:30	CT	SW846 6010B/SM 2340B
Nitrogen, Nitrate [c]	5.7	0.50	mg/l	5	06/01/10 11:46	RL	EPA 300/SW846 9056A
Silica, Dissolved [d]	27.4	0.21	mg/l	1	06/04/10 18:40	CT	SW846 6010B
Solids, Total Dissolved	9980	10	mg/l	1	06/01/10	PH	SM18 2540C
Specific Conductivity	14200	2.0	umhos/cm	2	06/04/10	PH	SM18 2510B/EPA 120.1
Sulfate	3840	300	mg/l	600	06/02/10 14:31	RL	EPA 300/SW846 9056A
Turbidity	298	5.0	NTU	10	05/28/10 12:10	EB	SM18 2130B
pH [e]	7.18		su	1	05/28/10 13:56	PH	SM18 4500H+ B

(a) Elevated detection limit due to high concentration of Chloride.
(b) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)
(c) Sample exceeded holding time due to reanalysis.
(d) Calculated as: (Silicon * 2.139)
(e) pH was analyzed past the 15min hold time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MTD-SW-05/2		
Lab Sample ID:	C11217-7F	**Date Sampled:**	05/27/10
Matrix:	AQ - Surface H2O Filtered	**Date Received:**	05/28/10
		Percent Solids:	n/a
Project:	Mt. Diablo- Marsh Creek Road, Clayton, CA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Mercury [a]	39.7	1.0	ug/l	5	06/02/10	06/03/10	RW	EPA 245.1 [1]	EPA 245.1/SW7470A [2]

(1) Instrument QC Batch: MA1240
(2) Prep QC Batch: MP2430

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Northern California
ACCUTEST
Laboratories

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

SARPCAPH 2674

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest NC Job #: C [illegible]

Client / Reporting Information

Company Name: The Source Group
Address: 3451C Vincent Road
City: Pleasant Hill State: CA Zip: 94523
Project Contact: Jon Philipp
Phone #: 925-944-2856 x 316
Sampler's Name: Jon Philipp

Project Information

Project Name: Sunoco, Mt. Diablo
Street:
City: Clayton State: CA
Project #: 01-SUN 040
EMAIL: jphilipp@thesourcegroup.net
Client Purchase Order #:

Requested Analysis

Accutest Sample ID	Sample ID / Field Point / Point of Collection	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: 0	[illegible]	HNO3	[illegible]	NONE	[illegible]	[illegible]	[illegible]	Mercury [illegible] - Lab filter	Priority Pollutant Metals (PPM13)	[illegible] Cancel	General Chem [illegible]	Cations [illegible]	[illegible]	Anions [illegible] BK	Dissolved Organic Carbon Lab-filtered from 1L-poly	HOLD (DO NOT ANALYZE)		LAB USE ONLY
1-1	MTD-SW-02/2	27-May	12:00	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X			
1-2	MTD-SW-04/2	27-May	12:15	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X	*		HOLD EF 5/28/10
1-3	MTD-SW-12/2	27-May	9:20	JP	SW	3	1		1		1				X	X	X	X	X	X	X	X			
1-4	MTD-SW-13/2	27-May	9:30	JP	SW	3	1		1		1				X	X	X	X	X	X	X	X			
1-5	MTD-SW-14/2	27-May	10:05	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X			
1-6	MTD-SW-15/2	27-May	11:15	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X			
1-7	MTD-SW-05/2	27-May	13.10	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X			

Matrix Codes
WW- Wastewater
GW- Ground Water
SW- Surface Water
SO- Soil
OI-Oil
WP-Wipe
LIQ - Non-aqueous Liquid
AIR
DW- Drinking Water (Feedback Only)

Turnaround Time (Business days)

Approved By / Date:

☒ 5 Day Standard
☐ 3 Day (50% markup)
☐ 2 Day (75% markup)
☐ 1 Day (100% markup)

Emergency T/A data available VIA Lablink

Data Deliverable Information

☐ Commercial "A" - Results with QC summaries
☑ Commercial "B+" - Results, QC, and chromatograms
☐ FULT1 - Level 4 data package
☐ EDF for Geotracker ☐ EDD Format ____
Provide EDF Global ID ____
Provide EDF Logcode ____

Comments / Remarks

Note that [illegible] samples are missing the small unpreserved poly. Do what you can to analyze the full suite. If you have to cut something out for lack of sample, call me.

(-2) put on HOLD as per client
2 500mL poly (B) HNO3 poly (x7); 500mL Amber (A) HCL each (x7)
1 1Lit poly each N/P (x7); 250mL poly each N/P (x5)
(-3 & -4) used sample from 1Lit-poly N/P to filter for dissolved (Hg)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 5/28/10 1025	Received By: 1 Vic [illegible] 5388	Relinquished By: 2 world Courier	Date Time: 18:05 05/28/10	Received By: 2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Appropriate Bottle / Pres [✓ Y] N Labels match CoC [✓ Y] N	Headspace Y/N [illegible] Separate Receipt Log [✓ Y] N On Ice [✓ Y] N Cooler Temp. 5.6+0.3 = 5.9°C

C11217: Chain of Custody
Page 1 of 2

Accutest Laboratories Northern California
Sample Receiving Check List

Job# : C11217
Sample Control Rep. Initial: EK/JM

SGRPCAPH 2674

Review Chain of Custody Chain of Custody is to be complete and legible.

- ☑ Are these regulatory (~~NPDES~~) samples? ~~GW A~~ — (Yes) / No
- ☑ Is pH requested? — Yes / (No)
- N/A ☐ Was Client informed that hold time is 15 min? Yes / No Continue Yes / No
- ☐ Was ortho-Phosphate filtered with in 15 min? Yes / No Continue Yes / No
- ☑ Are sample within hold time? — (Yes) / No
- Are sample in danger of exceeding hold-time — Yes / (No)
- ☑ Existing Client? (Yes) / No Existing Project? (Yes) / No
- If No: Is Report to info complete and legible, including;
  - ☐ deliverable ☐ Name ☐ Address ☐ phone ☐ e-mail
  - Is Bill to info complete and legible, including;
  - ☐ PO# ☐ Credit card ☐ Contact oaddress ☐ phone ☐ e-mail
  - Is Contact and/or Project Manager identified, including;
  - ☐ Phone ☐ e-mail
- ☑ Project name / number ☐ Special requirements? — (Yes) / No
- ☑ Sample IDs / date & time of collection provided? — (Yes) / No
- ☑ Is Matrix listed and correct? — (Yes) / No
- ☑ Analyses listed we do or client has authorized a subcontract? — (Yes) / No
- ☑ Chain is signed and dated by both client and sample custodian? — (Yes) / No
- ☑ TAT requested available? (Yes) / No Approved by PM

Review Coolers:

- ☑ Were Coolers temperatures measured at ≤6°C? Cooler # 1 Temp 5.4 °C
  - If cooler is outside the ≤6°C; note down below the affected bottles in that cooler
  - Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)
- ☑ Shipment Received Method world courier
- ☑ Custody Seals: Present: Yes / (No) If Yes: Unbroken: Yes / No

Review of Sample Bottles: If you answer no, explain to the side

- ☑ Chain matches bottle labels? (Yes) / No ☑ Sample bottle intact? (Yes) / No
- ☑ Is there enough sample volume in proper bottle for requested analyses? (Yes) / No
- ☑ Proper Preservatives? (Yes) / No Check pH on preserved samples except 1664, 625, 8270 and VOAs.
- ☐ Headspace-VOAs? Greater than 6mm in diameter Yes / No — N/A
  List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues
-1	pH<2	250ml poly (HNO3)
↓	↓	↓
-7		

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

\\Anc-srv-file1\d$\Entech Data\Laboratory\SOPs\SOP_CompleteListing\SC001F1_1_Form1_SampleControl_SampleReceivingChecklist_2010-02-15.doc

3.1

3

C11217: Chain of Custody
Page 2 of 2

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/02/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.02	.02	0.0028	<0.20

Associated samples MP2430: C11217-1F, C11217-3F, C11217-4F, C11217-5F, C11217-6F, C11217-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/02/10

Metal	C11217-1F Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	135	139	4	2240.0(a	70-130

Associated samples MP2430: C11217-1F, C11217-3F, C11217-4F, C11217-5F, C11217-6F, C11217-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

4.1.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/02/10

Metal	C11217-1F Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	135	135	4	2140.0(a	2.9	20

Associated samples MP2430: C11217-1F, C11217-3F, C11217-4F, C11217-5F, C11217-6F, C11217-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2430
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date:			06/02/10					06/02/10	
Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits	BSD Result	Spikelot HGPWS1	% Rec	BSD RPD	QC Limit
Mercury	1.9	2	95.0	85-115	2.0	2	100.0	5.1	

Associated samples MP2430: C11217-1F, C11217-3F, C11217-4F, C11217-5F, C11217-6F, C11217-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.02	.02	-0.0054	<0.20

Associated samples MP2431: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10

Metal	C11216-1 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.0	3.8	4	95.0	70-130

Associated samples MP2431: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10

Metal	C11216-1 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	3.8	4	95.0	0.0	20

Associated samples MP2431: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2431
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/01/10 06/01/10

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits	BSD Result	Spikelot HGPWS1	% Rec	BSD RPD	QC Limit
Mercury	1.9	2	95.0	85-115	1.9	2	95.0	0.0	

Associated samples MP2431: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2440
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/04/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	14	21		
Antimony	10	6.9	5.3	4.7	<10
Arsenic	10	4.4	3.1	4.1	<10
Barium	5.0	.6	.7		
Beryllium	5.0	.1	.2	0.10	<5.0
Boron	50	8.6	11	8.4	<50
Cadmium	2.0	.3	.3	0.30	<2.0
Calcium	50	29	12	0.30	<50
Chromium	5.0	.4	.6	0.50	<5.0
Cobalt	5.0	[illegible]	.4		
Copper	5.0	.8	1.1	-0.10	<5.0
Iron	50	2.6	18	0.50	<50
Lead	5.0	3.3	1.3	0.80	<5.0
Lithium	10	2.2	2.5		
Magnesium	50	9.6	13	1.3	<50
Manganese	5.0	.1	.2	0.10	<5.0
Molybdenum	5.0	1.3	1		
Nickel	5.0	.8	.5	0.20	<5.0
Potassium	500	58	60	-5.8	<500
Selenium	20	14	12	-13	<20
Silicon	50	3.4	5.3	0.0	<50
Silver	5.0	.9	.7	0.30	<5.0
Sodium	100	15	13	11.4	<100
Strontium	10	.3	2.4		
Thallium	20	6.5	6.4	7.5	<20
Tin	50	2.3	2		
Titanium	2.0	.2	.2		
Vanadium	5.0	.7	.5		
Zinc	10	.9	1.1	-0.10	<10

Associated samples MP2440: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2440
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

4.3.2

4

Prep Date: 06/04/10

Metal	C11217-4 Original	MS	Spikelot MPIR1	% Rec	QC Limits
Aluminum					
Antimony	10.4	509	500	99.7	80-120
Arsenic	0.0	499	500	99.8	80-120
Barium	anr				
Beryllium	0.10	504	500	100.8	80-120
Boron	953	1480	500	105.4	80-120
Cadmium	0.70	491	500	98.1	80-120
Calcium	49700	50500	500	160.0(a)	80-120
Chromium	-0.40	490	500	97.9	80-120
Cobalt	anr				
Copper	2.0	500	500	99.6	80-120
Iron	89.4	596	500	101.3	80-120
Lead	4.0	493	500	97.8	80-120
Lithium					
Magnesium	28200	29100	500	180.0(a)	80-120
Manganese	5.8	502	500	99.2	80-120
Molybdenum	anr				
Nickel	6.2	479	500	94.6	80-120
Potassium	898	5940	5000	100.8	80-120
Selenium	0.0	496	500	99.2	80-120
Silicon	7720	8090	250	148.0(a)	80-120
Silver	0.0	523	500	104.6	80-120
Sodium	18200	18800	500	120.0	80-120
Strontium					
Thallium	0.0	462	500	92.4	80-120
Tin					
Titanium					
Vanadium	anr				
Zinc	2.1	487	500	97.0	80-120

Associated samples MP2440: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2440
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/04/10

Metal	C11217-4 Original	MSD	Spikelot MPIR1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	10.4	507	500	99.3	0.4	20
Arsenic	0.0	498	500	99.6	0.2	20
Barium	anr					
Beryllium	0.10	497	500	99.4	1.4	20
Boron	953	1490	500	107.4	0.7	20
Cadmium	0.70	490	500	97.9	0.2	20
Calcium	49700	50600	500	180.0(a)	0.2	20
Chromium	0.40	490	500	97.9	0.0	20
Cobalt	anr					
Copper	2.0	490	500	97.6	2.0	20
Iron	89.4	589	500	99.9	1.2	20
Lead	4.0	490	500	97.2	0.5	20
Lithium						
Magnesium	28200	29200	500	200.0(a)	0.3	20
Manganese	5.8	494	500	97.6	1.6	20
Molybdenum	anr					
Nickel	6.2	478	500	94.4	0.2	20
Potassium	898	5940	5000	100.8	0.0	20
Selenium	0.0	476	500	95.2	4.1	20
Silicon	7720	8150	250	172.0(a)	0.7	20
Silver	0.0	513	500	102.6	1.9	20
Sodium	18200	18800	500	120.0	0.0	20
Strontium						
Thallium	0.0	457	500	91.4	1.[illegible]	20
Tin						
Titanium						
Vanadium	anr					
Zinc	2.1	486	500	96.8	0.2	20

Associated samples MP2440: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2440
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/04/10 06/04/10

Metal	BSP Result	Spikelot MPIR1	% Rec	QC Limits	BSD Result	Spikelot MPIR1	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony	473	500	94.6	80-120	480	500	96.0	1.5	
Arsenic	487	500	97.4	80-120	488	500	97.6	0.2	
Barium	anr								
Beryllium	493	500	98.6	80-120	491	500	98.2	0.4	
Boron	495	500	99.0	80-120	500	500	100.0	1.0	
Cadmium	494	500	98.8	80-120	493	500	98.6	0.2	
Calcium	502	500	100.4	80-120	504	500	100.8	0.4	
Chromium	494	500	98.8	80-120	491	500	98.2	0.6	
Cobalt	anr								
Copper	479	500	95.8	80-120	478	500	95.6	0.2	
Iron	503	500	100.6	80-120	506	500	101.2	0.6	
Lead	504	500	100.8	80-120	499	500	99.8	1.0	
Lithium									
Magnesium	500	500	100.0	80-120	511	500	102.2	2.2	
Manganese	500	500	100.0	80-120	497	500	99.4	0.6	
Molybdenum	anr								
Nickel	498	500	99.6	80-120	495	500	99.0	0.6	
Potassium	4870	5000	97.4	80-120	4890	5000	97.8	0.4	
Selenium	502	500	100.4	80-120	499	500	99.8	0.6	
Silicon	254	250	101.6	80-120	253	250	101.2	0.4	
Silver	513	500	102.6	80-120	512	500	102.4	0.2	
Sodium	497	500	99.4	80-120	500	500	100.0	0.6	
Strontium									
Thallium	473	500	94.6	80-120	470	500	94.0	0.6	
Tin									
Titanium									
Vanadium	anr								
Zinc	499	500	99.8	80-120	497	500	99.4	0.4	

Associated samples MP2440: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2440
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/04/10

Metal	C11217-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	10.4	0.00	100.0(a)	0-10
Arsenic	0.00	0.00	NC	0-10
Barium	anr			
Beryllium	0.100	0.00	100.0(a)	0-10
Boron	953	1000	5.1	0-10
Cadmium	0.700	2.00	185.7(a)	0-10
Calcium	49700	48200	3.1	0-10
Chromium	0.400	0.00	100.0(a)	0-10
Cobalt	anr			
Copper	2.00	0.00	100.0(a)	0-10
Iron	89.4	84.5	5.5	0-10
Lead	4.00	0.00	100.0(a)	0-10
Lithium				
Magnesium	28200	28500	0.9	0-10
Manganese	5.80	6.00	3.4	0-10
Molybdenum	anr			
Nickel	6.20	4.00	35.5 (a)	0-10
Potassium	898	764	15.0 (a)	0-10
Selenium	0.00	0.00	NC	0-10
Silicon	7720	7620	1.3	0-10
Silver	0.00	0.00	NC	0-10
Sodium	18200	17900	1.2	0-10
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Vanadium	anr			
Zinc	2.10	0.00	100.0(a)	0-10

Associated samples MP2440: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

QC Batch ID: MP2440
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/04/10

Metal	Sample ml	Final ml	Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP2440: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN3890	5.0	0.0	mg/l	250	251	100.5	75-125%
Bromide	GP1783/GN3889	0.20	0.0	mg/l	5	4.78	95.6	90-110%
Chloride	GP1789/GN3906	0.50	0.0	mg/l	5	4.62	92.4	90-110%
Dissolved Organic Carbon	GP1782/GN3888	1.0	0.52	mg/l	25.0	25.2	100.9	75-125%
Fluoride	GP1783/GN3889	0.10	0.0	mg/l	5	4.84	96.8	90-110%
Nitrogen, Nitrate	GP1783/GN3889	0.10	0.0	mg/l	5	4.65	93.0	90-110%
Solids, Total Dissolved	GN3886	10	0.0	mg/l				
Specific Conductivity	GN3877	1.0	0.0	umhos/cm				
Specific Conductivity	GN3913	1.0	0.0	umhos/cm				
Sulfate	GP1789/GN3906	0.50	0.0	mg/l	5	4.76	95.2	90-110%
Turbidity	GN3883	0.50	0.048	NTU	40	41.1	102.8	75-125%

Associated Samples:
Batch GN3877: C11217-1, C11217-3, C11217-4, C11217-5
Batch GN3883: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3886: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3890: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3913: C11217-6, C11217-7
Batch GP1782: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1783: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1789: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11217
Account: SGRFCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN3890	mg/l	250	251	0.0	
Bromide	GP1783/GN3889	mg/l	5	4.82	0.8	25%
Chloride	GP1789/GN3906	mg/l	5	4.61	0.2	25%
Dissolved Organic Carbon	GP1782/GN3888	mg/l	25.0	24.7	2.2	
Fluoride	GP1783/GN3889	mg/l	5	4.78	1.2	25%
Nitrogen, Nitrate	GP1783/GN3889	mg/l	5	4.65	0.0	25%
Sulfate	GP1789/GN3906	mg/l	5	4.74	0.4	25%
Turbidity	GN3883	NTU	40	40.9	0.5	

Associated Samples:
Batch GN3883: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3890: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1782: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1783: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1789: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN3890	C11107-4	mg/l	169	167	1.2	0-25%
Solids, Total Dissolved	GN3886	C11190-1	mg/l	692	685	1.0	0-%
Specific Conductivity	GN3877	C11216-1	umhos/cm	414	418	1.0	0-25%
Specific Conductivity	GN3913	C11251-1	umhos/cm	893	896	0.3	0-25%
Turbidity	GN3883	C11216-1	NTU	26.9	26.5	1.5	0-25%
pH	GN3876	C11216-1	su	7.91	7.93	0.3	0-25%

Associated Samples:
Batch GN3876: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3877: C11217-1, C11217-3, C11217-4, C11217-5
Batch GN3883: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3886: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3890: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GN3913: C11217-6, C11217-7
(*) Outside of QC limits

5.3
5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11217
Account: SGRPCAPH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP1783/GN3889	C11216-1	mg/l	0.0	4	3.7	92.5	80-120%
Chloride	GP1789/GN3906	C11217-7	mg/l	2370	2400	4740	98.8	80-120%
Dissolved Organic Carbon	GP1782/GN3888	C11217-2	mg/l	6.6	25	30.2	94.1	75-125%
Fluoride	GP1783/GN3889	C11216-1	mg/l	0.027	4	3.6	89.3	80-120%
Nitrogen, Nitrate	GP1783/GN3889	C11216-1	mg/l	0.031	4	3.6	89.2	80-120%
Sulfate	GP1789/GN3906	C11217-7	mg/l	3840	2400	6020	90.8	80-120%

Associated Samples:
Batch GP1782: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1783: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1789: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C11217
Account: SGRPCAFH - The Source Group
Project: Mt. Diablo- Marsh Creek Road, Clayton, CA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP1783/GN3889	C11216-1	mg/l	0.0	4	3.7	0.0	
Chloride	GP1789/GN3906	C11217-7	mg/l	2370	2400	4760	0.4	
Dissolved Organic Carbon	GP1782/GN3888	C11217-2	mg/l	6.6	25	29.6	2.0	
Fluoride	GP1783/GN3889	C11216-1	mg/l	0.027	4	3.5	2.8	
Nitrogen, Nitrate	GP1783/GN3889	C11216-1	mg/l	0.031	4	3.6	0.0	
Sulfate	GP1789/GN3906	C11217-7	mg/l	3840	2400	6070	0.8	

Associated Samples:
Batch GP1782: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1783: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
Batch GP1789: C11217-1, C11217-3, C11217-4, C11217-5, C11217-6, C11217-7
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Northern California
ACCUTEST
Laboratories

06/10/10

Technical Report for

The Source Group

Mt. Diablo- Marsh Creek Road, Clayton, CA

SUNOCO

Accutest Job Number: C11216X

Sampling Date: 05/27/10

Report to:

The Source Group
3451C Vincent Road
Pleasant Hill, CA 94523
jphilipp@thesourcegroup.net

ATTN: Jon Philipp

Total number of pages in report:

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242)

Test results relate only to samples analyzed.

Northern California
ACCUTEST
Laboratories

06/10/10

Technical Report for

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Mt. Diablo- Marsh Creek Road, Clayton, CA

SUNOCO

Accutest Job Number: C11217X

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Report to:

The Source Group
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Pleasant Hill, CA 94523
jphilipp@thesourcegroup.net

ATTN: Jon Philipp

Total number of pages in report:

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Laurie Glantz-Murphy
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

Certifications: CA (08258CA) DoD/ISO/IEC 17025:2005 (L2242)

Sample Summary

The Source Group

Job No: C11216X

Mt. Diablo- Marsh Creek Road, Clayton, CA
Project No: SUNOCO

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C11216-1X	05/27/10	13:00	JP	05/28/10	AQ	Surface Water	MTD-SW-08/2
C11216-2X	05/27/10	13:30	JP	05/28/10	AQ	Surface Water	MTD-SW-07/2
C11216-3X	05/27/10	13:15	JP	05/28/10	AQ	Surface Water	MTD-SW-09/2
C11216-4X	05/27/10	13:50	JP	05/28/10	AQ	Surface Water	MTD-SW-10/2
C11216-5X	05/27/10	10:50	JP	05/28/10	AQ	Surface Water	MTD-SW-06/2
C11216-6X	05/27/10	09:20	JP	05/28/10	AQ	Surface Water	MTD-SW-11/2
C11216-7X	05/27/10	12:45	JP	05/28/10	AQ	Surface Water	MTD-SW-16/2

Sample Summary

The Source Group

Job No: C11217X

Mt. Diablo- Marsh Creek Road, Clayton, CA
Project No: SUNOCO

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C11217-1X	05/27/10	12:00	JP	05/28/10	AQ	Surface Water	MTD-SW-02/2
C11217-3X	05/27/10	09:20	JP	05/28/10	AQ	Surface Water	MTD-SW-12/2
C11217-4X	05/27/10	09:30	JP	05/28/10	AQ	Surface Water	MTD-SW-13/2
C11217-5X	05/27/10	10:05	JP	05/28/10	AQ	Surface Water	MTD-SW-14/2
C11217-6X	05/27/10	11:15	JP	05/28/10	AQ	Surface Water	MTD-SW-15/2
C11217-7X	05/27/10	13:10	JP	05/28/10	AQ	Surface Water	MTD-SW-05/2

Tuesday, June 08, 2010

Ann Kathain
Accutest Laboratories
2105 Lundy Avenue
San Jose, CA 95131

RE:	Lab Order:	K060068	Collected By:	CLIENT
	Project ID:	MT.DIABLO	PO/Contract #:	C11216

Dear Ann Kathain:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, June 01, 2010. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Enclosures

Project Manager: Mike Hamilton

1885 North Kelly Road • Napa, California 94558
(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

SAMPLE SUMMARY

Lab Order: K060068

Project ID: MT.DIABLO

Lab ID	Sample ID	Matrix	Date Collected	Date Received
K060068001	MTD-SW-08/2	Water	5/27/2010 13:00	6/1/2010 14:20
K060068002	MTD-SW-07/2	Water	5/27/2010 13:30	6/1/2010 14:20
K060068003	MTD-SW-09/	Water	5/27/2010 13:15	6/1/2010 14:20
K060068004	MTD-SW-10/2	Water	5/27/2010 13:50	6/1/2010 14:20
K060068005	MTD-SW-06/2	Water	5/27/2010 10:50	6/1/2010 14:20
K060068006	MTD-SW-11/2	Water	5/27/2010 09:20	6/1/2010 14:20
K060068007	MTD-SW-16/2	Water	5/27/2010 12:45	6/1/2010 14:20
K060068008	MTD-SW-02/2	Water	5/27/2010 12:00	6/1/2010 14:20
K060068009	MTD-SW-04/2	Water	5/27/2010 12:15	6/1/2010 14:20
K060068010	MTD-SW-12/2	Water	5/27/2010 09:20	6/1/2010 14:20
K060068011	MTD-SW-13/2	Water	5/27/2010 09:30	6/1/2010 14:20
K060068012	MTD-SW-14/2	Water	5/27/2010 10:05	6/1/2010 14:20
K060068013	MTD-SW-15/2	Water	5/27/2010 11:15	6/1/2010 14:20
K060068014	MTD-SW-05/2	Water	5/27/2010 13:10	6/1/2010 14:20

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(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

NARRATIVE

Lab Order: K060068
Project ID: MT.DIABLO

General Qualifiers and Notes

Caltest authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that all test results for wastewater and hazardous waste analyses meet all applicable NELAC requirements, all microbiology and drinking water testing meet applicable ELAP requirements, unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 18th Ed. except where noted.

Caltest collects samples in compliance with 40 CFR, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution Factors (DF) reported greater than '1' have been used to adjust the result, Reporting Limit (RL), and Method Detection Limit (MDL).

All Solid, sludge, and/or biosolids data is reported in Wet Weight, unless otherwise specified.

Laboratory filtration for dissolved metals (excluding mercury) and/or pH analysis was not performed within the 15 minute holding time as specified by 40CFR 136.3 table II.

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

ND - Non Detect - Indicates analytical result has not been detected.

RL - Reporting Limit is the quantitation limit at which the laboratory is able to detect an analyte. An analyte not detected at or above the RL is reported as ND unless otherwise noted or qualified. For analyses pertaining to the State Implementation Plan of the California Toxics Rule, the Caltest Reporting Limit (RL) is equivalent to the Minimum Level (ML). A standard is always run at or below the ML. Where Reporting Limits are elevated due to dilution, the ML calibration criteria has been met.

J - reflects estimated analytical result value detected below the Reporting Limit (RL) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag.

E - indicates an estimated analytical result value.

B - indicates the analyte has been detected in the blank associated with the sample.

NC - means not able to be calculated for RPD or Spike Recoveries.

SS - compound is a Surrogate Spike used per laboratory quality assurance manual.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

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ANALYTICAL RESULTS

Lab Order: K060068

Project ID MT.DIABLO

Lab ID: K060068001	Date Collected: 5/27/2010 13:00	Matrix: Water	
Sample ID: MTD-SW-08/2	Date Received: 6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	0.705	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID: K060068002	Date Collected: 5/27/2010 13:30	Matrix: Water	
Sample ID: MTD-SW-07/2	Date Received: 6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	1.47	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID: K060068003	Date Collected: 5/27/2010 13:15	Matrix: Water	
Sample ID: MTD-SW-09/	Date Received: 6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	0.657	ng/L	0.2	0.1	1	06/07/10 00:00	MPR 8838	06/07/10 00:00	MHG 3153	

Lab ID: K060068004	Date Collected: 5/27/2010 13:50	Matrix: Water	
Sample ID: MTD-SW-10/2	Date Received: 6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	7.26	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID: K060068005	Date Collected: 5/27/2010 10:50	Matrix: Water	
Sample ID: MTD-SW-08/2	Date Received: 6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				

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ANALYTICAL RESULTS

Lab Order: K060068

Project ID: MT.DIABLO

Lab ID: K060068005 | Date Collected: 5/27/2010 10:50 | Matrix: Water

Sample ID: MTD-SW-06/2 | Date Received: 6/1/2010 14:20

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
		Analytical Method: Draft EPA 1630						Analyzed by: ECV		
Methyl Mercury	0.233	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID: K060068006 | Date Collected: 5/27/2010 09:20 | Matrix: Water

Sample ID: MTD-SW-11/2 | Date Received: 6/1/2010 14:20

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		Prep Method: Draft EPA 1630				Prep by: ECV				
		Analytical Method: Draft EPA 1630						Analyzed by: ECV		
Methyl Mercury	0.504	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID: K060068007 | Date Collected: 5/27/2010 12:45 | Matrix: Water

Sample ID: MTD-SW-16/2 | Date Received: 6/1/2010 14:20

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		Prep Method: Draft EPA 1630				Prep by: ECV				
		Analytical Method: Draft EPA 1630						Analyzed by: ECV		
Methyl Mercury	0.0766	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID: K060068008 | Date Collected: 5/27/2010 12:00 | Matrix: Water

Sample ID: MTD-SW-02/2 | Date Received: 6/1/2010 14:20

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		Prep Method: Draft EPA 1630				Prep by: ECV				
		Analytical Method: Draft EPA 1630						Analyzed by: ECV		
Methyl Mercury	2.84	ng/L	0.2	0.1	1	06/07/10 00:00	MPR 8839	06/07/10 00:00	MHG 3153	

Lab ID: K060068010 | Date Collected: 5/27/2010 09:20 | Matrix: Water

Sample ID: MTD-SW-12/2 | Date Received: 6/1/2010 14:20

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		Prep Method: Draft EPA 1630				Prep by: ECV				
		Analytical Method: Draft EPA 1630						Analyzed by: ECV		

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(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

ANALYTICAL RESULTS

Lab Order: K060068
Project ID MT.DIABLO

Lab ID:	K060068010	Date Collected:	5/27/2010 09:20	Matrix:	Water
Sample ID:	MTD-SW-12/2	Date Received:	6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury	0.104	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID:	K060068011	Date Collected:	5/27/2010 09:30	Matrix:	Water
Sample ID:	MTD-SW-13/2	Date Received:	6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	0.439	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID:	K060068012	Date Collected:	5/27/2010 10:05	Matrix:	Water
Sample ID:	MTD-SW-14/2	Date Received:	6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	1.16	ng/L	0.05	0.02	1	06/02/10 00:00	MPR 8823	06/03/10 00:00	MHG 3152	

Lab ID:	K060068013	Date Collected:	5/27/2010 11:15	Matrix:	Water
Sample ID:	MTD-SW-15/2	Date Received:	6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	4.86	ng/L	0.2	0.1	1	06/07/10 00:00	MPR 8838	06/07/10 00:00	MHG 3153	

Lab ID:	K060068014	Date Collected:	5/27/2010 13:10	Matrix:	Water
Sample ID:	MTD-SW-05/2	Date Received:	6/1/2010 14:20		

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual
Methyl Mercury Analysis		**Prep Method:** Draft EPA 1630				**Prep by:** ECV				
		Analytical Method: Draft EPA 1630						**Analyzed by:** ECV		
Methyl Mercury	3.29	ng/L	0.2	0.1	1	06/07/10 00:00	MPR 8838	06/07/10 00:00	MHG 3153	

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ANALYTICAL RESULTS

Lab Order: K060068

Project ID MT.DIABLO

Lab ID: K060068014 Date Collected: 5/27/2010 13:10 Matrix: Water

Sample ID: MTD-SW-05/2 Date Received: 6/1/2010 14:20

Parameters	Result	Units	R. L.	MDL	DF	Prepared	Batch	Analyzed	Batch	Qual

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QUALITY CONTROL DATA

Lab Order: K060068

Project ID: MT.DIABLO

Analysis Description:	Methyl Mercury Analysis	**QC Batch:**	MPR/8823
Analysis Method:	Draft EPA 1630	**QC Batch Method:**	Draft EPA 1630

METHOD BLANK: 333862

Parameter	Blank Result	Reporting Limit	MDL	Units	Qualifiers
Methyl Mercury	ND	0.05	0.02	ng/L	

LABORATORY CONTROL SAMPLE: 333863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl Mercury	ng/L	1.11	1.09	98	67-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 333864 333865

Parameter	Units	K060068001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methyl Mercury	ng/L	0.705	1.11	1.68	1.62	88	82	65-135	3.6	35	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 333866 333867

Parameter	Units	K060068007 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methyl Mercury	ng/L	0.0766	1.11	1.11	1.18	93	99	65-135	6.1	35	

Analysis Description:	Methyl Mercury Analysis	**QC Batch:**	MPR/8838
Analysis Method:	Draft EPA 1630	**QC Batch Method:**	Draft EPA 1630

METHOD BLANK: 334666

Parameter	Blank Result	Reporting Limit	MDL	Units	Qualifiers
Methyl Mercury	ND	0.05	0.02	ng/L	

LABORATORY CONTROL SAMPLE: 334667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl Mercury	ng/L	1.11	0.96	86	67-133	

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QUALITY CONTROL DATA

Lab Order: K060068

Project ID: MT.DIABLO

Analysis Description:	Methyl Mercury Analysis	QC Batch:	MPR/8838
Analysis Method:	Draft EPA 1630	QC Batch Method:	Draft EPA 1630

MATRIX SPIKE & MATRIX SPIKE DUPLICATE 334668 334669

Parameter	Units	K060232002 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methyl Mercury	ng/L	0.0356	1.11	1.03	1.04	89	90	65-135	1	35	

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QUALITY CONTROL DATA QUALIFIERS

Lab Order: K060068

Project ID: MT.DIABLO

QUALITY CONTROL PARAMETER QUALIFIERS

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

NS - means not spiked and will not have recoveries reported for Analyte Spike Amounts

NC - means not able to be calculated for RPD or Spike Recoveries.

QC Codes Keys: These descriptors are used to help identify the specific QC samples and clarify the report.

MB - Method Blank

Method Blanks are reported to the same Method Detection Limits (MDLs) or Reporting Limits (RLs) as the analytical samples in the corresponding QC batch.

LCS/LCSD - Laboratory Control Spike / Laboratory Control Spike Duplicate

DUP - Duplicate of Original Sample Matrix

MS/MSD - Matrix Spike / Matrix Spike Duplicate

RPD - Relative Percent Difference

%Recovery - Spike Recovery stated as a percentage

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab Order: K060068
Project ID: MT.DIABLO

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
K060068001	MTD-SW-08/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068002	MTD-SW-07/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068004	MTD-SW-10/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068005	MTD-SW-06/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068006	MTD-SW-11/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068007	MTD-SW-16/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068010	MTD-SW-12/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068011	MTD-SW-13/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068012	MTD-SW-14/2	Draft EPA 1630	MPR/8823	Draft EPA 1630	MHG/3152
K060068003	MTD-SW-09/	Draft EPA 1630	MPR/8838	Draft EPA 1630	MHG/3153
K060068008	MTD-SW-02/2	Draft EPA 1630	MPR/8838	Draft EPA 1630	MHG/3153
K060068013	MTD-SW-15/2	Draft EPA 1630	MPR/8838	Draft EPA 1630	MHG/3153
K060068014	MTD-SW-05/2	Draft EPA 1630	MPR/8838	Draft EPA 1630	MHG/3153

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Northern California ACCUTEST Laboratories

Accutest ID and PO#: C11216

2105 Lundy Avenue, San Jose, CA 95131 Phone :(408)588-0200 Fax: (408)588-0201

Subcontract Chain of Custody

Subcontract Lab: Caltest Analytical Laboratory
Date Sent: 06/01/10
Date Due: 5 DAY TAT

5 Day TAT **RUSH**

Project Name: Mt. Diablo
Project Location: Clayton, CA

K060048

	Accutest Lab Number	Customer Sample Name/Field Point ID	Matrix	Method	Collect Date	Collect Time
-1	C11216-1	MTD-SW-08/2	SW	Methyl Mercury	05/27/10	13:00
-2	C11216-2	MTD-SW-07/2	SW	Methyl Mercury	05/27/10	13:30
-3	C11216-3	MTD-SW-09/2	SW	Methyl Mercury	05/27/10	13:15
-4	C11216-4	MTD-SW-10/2	SW	Methyl Mercury	05/27/10	13:50
-5	C11216-5	MTD-SW-06/2	SW	Methyl Mercury	05/27/10	10:50
-6	C11216-6	MTD-SW-11/2	SW	Methyl Mercury	05/27/10	09:20
-7	C11216-7	MTD-SW-16/2	SW	Methyl Mercury	05/27/10	12:45

Comments:

Relinquished By:	Received By:	Date:	Time:
ekumar [signature]	[signature]	6/1/10	1145
Relinquished By: [signature]	Received By: [signature]	Date: 6/1/10	Time: 1420
Relinquished By:	Received By:	Date:	Time:

Send the Report to: annek@accutest.com

Northern California
ACCUTEST
Laboratories

Accutest ID and PO#: C11217

2105 Lundy Avenue, San Jose, CA 95131 Phone :(408)588-0200 Fax: (408)588-0201

Subcontract Chain of Custody

Subcontract Lab: Caltest Analytical Laboratory
Date Sent: 06/01/10
Date Due: 5 DAY TAT

5 Day TAT

RUSH

Project Name: Mt. Diablo
Project Location: Clayton, CA

K0600068

	Accutest Lab Number	Customer Sample Name/Field Point ID	Matrix	Method	Collect Date	Collect Time
-8	C11217-1	MTD-SW-02/2	SW	Methyl Mercury	05/27/10	12:00
-9	C11217-2	MTD-SW-04/2	SW	Methyl Mercury (ON HOLD)	05/27/10	12:15
-10	C11217-3	MTD-SW-12/2	SW	Methyl Mercury	05/27/10	09:20
-11	C11217-4	MTD-SW-13/2	SW	Methyl Mercury	05/27/10	09:30
-12	C11217-5	MTD-SW-14/2	SW	Methyl Mercury	05/27/10	10:05
-13	C11217-6	MTD-SW-15/2	SW	Methyl Mercury	05/27/10	11:15
-14	C11217-7	MTD-SW-05/2	SW	Methyl Mercury	05/27/10	13:10

Comments: C11217-2 (ON HOLD)

Relinquished By:	Received By:	Date:	Time:
ekumar [signature]	[signature]	6/1/10	1145
Relinquished By: [signature]	Received By: [signature]	6/1/10	1420
Relinquished By:	Received By:	Date:	Time:

Send the Report to: annek@accutest.com

Northern California
ACCUTEST Laboratories

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

SGRPCAPH2674

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest NC Job #: C11216

Client / Reporting Information

Company Name	The Source Group
Address	3451C Vincent Road
City / State / Zip	Pleasant Hill CA 94523
Project Contact:	Jon Philipp
Phone #	925-944-2856 x 316
Samplers's Name	Jon Philipp

Project Information

Project Name:	Sunoco, Mt. Diablo
Street	
City / State	Clayton CA
Project #	01-SUN-050
EMAIL:	jphilipp@thesourcegroup.net
Client Purchase Order #	

Requested Analysis: Mercury (dissolved/total) - Lab filter; Priority Pollutant Metals (PM13); Methyl Mercury (subcontract) Caltest; General Chem (turb, alk, TDS, EC, pH, Bic, Car); Cations (B, K, Fe, Mn, Mg, Ca, Na, Si); Hardness (Ca, Mg); Anions (Cl, F, SO4, Br, NO3, ~~Br~~) EK; Dissolved Organic Carbon (Lab-Filtered from 1Lit poly); HOLD (Do not Analyze) EK 5/28/10

Matrix Codes: WW- Wastewater; GW- Ground Water; SW- Surface Water; SO- Soil; OI-Oil; WP-Wipe; LIQ - Non-aqueous Liquid; AIR; DW- Drinking Water (Perchlorate Only)

Accutest Sample ID	Sample ID / Field Point / Point of Collection	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	Mercury	PP Metals	Methyl Mercury	General Chem	Cations	Hardness	Anions	DOC	HOLD	LAB USE ONLY
-1	MTD-SW-08/2	27-May	13:00	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X		
-2	MTD-SW-07/2	27-May	13:30	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X	* EK	To be run as per client Email
-3	MTD-SW-09/2	27-May	13:15	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X	5/28/10	
-4	MTD-SW-10/2	27-May	13:50	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X		
-5	MTD-SW-06/2	27-May	10:50	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X		
-6	MTD-SW-11/2	27-May	9:20	JP	SW	3	1		1		1				X	X	X	X	X	X	X	X		
-7	MTD-SW-16/2	27-May	12:45	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X	* EK 5/28/10	To be run as per Client Email

Turnaround Time (Business days) — Approved By/ Date:

- [X] 5 Day Standard
- [ ] 3 Day (50% markup)
- [ ] 2 Day (75% markup)
- [ ] 1 Day (100% markup)

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [X] Commercial "B" - Results with QC summaries
- [ ] Commercial "B+" - Results, QC, and chromatograms
- [ ] FULT1 - Level 4 data package
- [ ] EDF for Geotracker
- [ ] EDD Format

Provide EDF Global ID

Provide EDF Logcode:

Comments / Remarks

Note that one sample is missing the small unpreserved poly. Do what you can to analyze the full suite. If you have to cut something out for lack of sample, call me.

All Samples on Hold to be analyzed as per client Email

250mL poly (HNO3) PH<2 (x7) ; 500mL Amber (HCl) each (x7)
1x1Lit poly each N/P (x7) ; 250mL poly each N/P (x7)

(-6) used Sample from 1Lit poly - N/P to Filter for dissolved Hg

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	5/28/10 1025	1 Vic Vasquez 5388	2 world courier	12:05 05/28/10	2 [signature]
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #		

Appropriate Bottle / Pres. (Y)/N — Headspace Y/N N/A — On Ice (Y)/N — Cooler Temp. 4.8+0.3=5.1 °C

Labels match Coc? (Y) N — Separate Receipt Log (Y) N

Accutest Laboratories Northern California
Sample Receiving Check List

Job# : C1124b
Sample Control Rep. Initial: EK|JM

SGRPCAPH 2674

Review Chain of Custody Chain of Custody is to be complete and legible.

- ☑ Are these regulatory (~~NPDES~~) samples? ~~CWA~~ — (Yes) / No
- ☑ Is pH requested? — Yes / (No)
  - N/A ☐ Was Client informed that hold time is 15 min? Yes / No Continue Yes / No
  - ☐ Was ortho-Phosphate filtered with in 15 min? Yes / No Continue Yes / No
- ☑ Are sample within hold time? — (Yes) / No
- Are sample in danger of exceeding hold-time — Yes / (No)
- ☑ Existing Client? (Yes) / No Existing Project? (Yes) / No
- If No: Is Report to info complete and legible, including;
  - ☐ deliverable ☐ Name ☐ Address ☐ phone ☐ e-mail
  - Is Bill to info complete and legible, including;
  - ☐ PO# ☐ Credit card ☐ Contact ☐ address ☐ phone ☐ e-mail
  - Is Contact and/or Project Manager identified, including;
  - ☐ phone ☐ e-mail
- ☑ Project name / number ☐ Special requirements? — (Yes) / No
- ☑ Sample IDs / date & time of collection provided? — (Yes) / No
- ☑ Is Matrix listed and correct? — (Yes) / No
- ☑ Analyses listed we do or client has authorized a subcontract? — (Yes) / No
- ☑ Chain is signed and dated by both client and sample custodian? — (Yes) / No
- ☑ TAT requested available? (Yes) / No Approved by PM

Review Coolers:

- ☑ Were Coolers temperatures measured at ≤6°C? Cooler # 1 Temp 5.1 °C
  - If cooler is outside the ≤6°C; note down below the affected bottles in that cooler
  - Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)
- ☑ Shipment Received Method World Courier
- ☑ Custody Seals: Present: Yes / (No) If Yes; Unbroken: Yes / No

Review of Sample Bottles: If you answer no, explain to the side

- ☑ Chain matches bottle labels? (Yes) / No ☑ Sample bottle intact? (Yes) / No
- ☑ Is there enough sample volume in proper bottle for requested analyses? (Yes) / No
- ☑ Proper Preservatives? (Yes) / No Check pH on preserved samples except 1664, 625, 8270 and VOAs.
- ☐ Headspace-VOAs? Greater than 6mm in diameter Yes / No
  N/A List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues
-1	pH<2	250mL poly (w/HNO3)
↓	↓	↓
-7	↓	
		* methylmercury → subbed to caltest.

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

Northern California **ACCUTEST** Laboratories

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

SGRPCAPH 2674

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest NC Job #: C

Client / Reporting Information

Company Name: The Source Group
Address: 3451C Vincent Road
City: Pleasant Hill State: CA Zip: 94523
Project Contact: Jon Philipp
Phone #: 925-944-2856 x 316
Samplers's Name: Jon Philipp

Project Information

Project Name: Sunoco, Mt. Diablo
Street:
City: Clayton State: CA
Project #: 01-SUN-050
EMAIL: jphilipp@thesourcegroup.net
Client Purchase Order #:

Requested Analysis: Mercury (dissolved/total) - Lab filter; Priority Pollutant Metals (PM13); Methyl Mercury (subcontract) Collect; General Chem (turb, alk, TDS, EC, pH, Bic, Car); Cations (B, K, Fe, Mn, Mg, Ca, Na, Si); Hardness (Ca, Mg); Anions (Cl, F, SO4, Br, NO3, Zn, Ag, BK); Dissolved Organic Carbon (Lab-filtered from lit-poly); HOLD (DO NOT ANALYZE)

Matrix Codes: WW- Wastewater; GW- Ground Water; SW- Surface Water; SO- Soil; OI-O3; WP-Wipe; LIQ - Non-aqueous Liquid; AIR; DW- Drinking Water (Perchlorate Only)

Accutest Sample ID	Sample ID / Field Point / Point of Collection	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NH4SO4	MEOH	ENCORE	Mercury	Priority Pollutant Metals	Methyl Mercury	General Chem	Cations	Hardness	Anions	Dissolved Organic Carbon		HOLD		LAB USE ONLY
-1	MTD-SW-02/2	27-May	12:00	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-2	MTD-SW-04/2	27-May	12:15	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X		*		HOLD EF 5/28/10
-3	MTD-SW-12/2	27-May	9:20	JP	SW	3	1		1		1				X	X	X	X	X	X	X	X				
-4	MTD-SW-13/2	27-May	9:30	JP	SW	3	1		1		1				X	X	X	X	X	X	X	X				
-5	MTD-SW-14/2	27-May	10:05	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-6	MTD-SW-15/2	27-May	11:15	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				
-7	MTD-SW-06/2	27-May	13:10	JP	SW	4	1		1		2				X	X	X	X	X	X	X	X				

Turnaround Time (Business days) — Approved By/Date:

- [x] 5 Day Standard
- [ ] 3 Day (50% markup)
- [ ] 2 Day (75% markup)
- [ ] 1 Day (100% markup)

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "B" - Results with QC summaries
- [x] Commercial "B+" - Results, QC, and chromatograms
- [ ] FULT1 - Level 4 data package
- [ ] EDF for Geotracker [ ] EDD Format
- Provide EDF Global ID
- Provide EDF Logcode:

Comments / Remarks

Note that two samples are missing the small unpreserved poly. Do what you can to analyze the full suite. If you have to cut something out for lack of sample, call me.

(-2) put on HOLD as per client

250mL poly (D) HNO3 PH<2 (X7); 500mL Amber (D) HCL each (X7)
1X1Lit poly each N/P (X7); 250mL poly each N/P (X5)

(-3 & -4) used sample from 1Lit-poly N/P to filter for dissolved (Hg)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	5/28/10 1025	1 [signature] 5385	2 world courier	05/28/10 12:05	2 [signature]
3		3	4		4
5		5	Custody Seal #	Appropriate Bottle / Pres (Y)/N; Labels match Coc? (Y)/N; Headspace Y/N N/A; Separate Receipt Log (Y)/N; On Ice (Y)/N	Cooler Temp. 5.6+0.3 = 5.9°C

Accutest Laboratories Northern California
Sample Receiving Check List

Job# : C11217
Sample Control Rep. Initial: EK|JM

SGRPCAPH2674

Review Chain of Custody Chain of Custody is to be complete and legible.

- ☑ Are these regulatory (~~NPDES) samples?~~ ~~GW A~~ — (Yes) / No
- ☑ Is pH requested? — Yes / (No)
  - N/A ☐ Was Client informed that hold time is 15 min? Yes / No Continue Yes / No
  - ☐ Was ortho-Phosphate filtered with in 15 min? Yes / No Continue Yes / No
- ☑ Are sample within hold time? — (Yes) / No
  - Are sample in danger of exceeding hold-time — Yes / (No)
- ☑ Existing Client? (Yes) / No Existing Project? (Yes) / No
  - If No: Is Report to info complete and legible, including:
    - ☐ deliverable ☐ Name ☐ Address ☐ phone ☐ e-mail
  - Is Bill to info complete and legible, including:
    - ☐ PO# ☐ Credit card ☐ Contact ☐ address ☐ phone ☐ e-mail
  - Is Contact and/or Project Manager identified, including:
    - ☐ phone ☐ e-mail
- ☑ Project name / number ☐ Special requirements? — (Yes) / No
- ☑ Sample IDs / date & time of collection provided? — (Yes) / No
- ☑ Is Matrix listed and correct? — (Yes) / No
- ☑ Analyses listed we do or client has authorized a subcontract? — (Yes) / No
- ☑ Chain is signed and dated by both client and sample custodian? — (Yes) / No
- ☑ TAT requested available? (Yes) / No Approved by PM

Review Coolers:

- ☑ Were Coolers temperatures measured at ≤6°C? Cooler # 1 Temp 5.4 °C
  - If cooler is outside the ≤6°C; note down below the affected bottles in that cooler
  - Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)
- ☑ Shipment Received Method world courier
- ☑ Custody Seals: Present: Yes / (No) If Yes; Unbroken: Yes / No

Review of Sample Bottles: If you answer no, explain to the side

- ☑ Chain matches bottle labels? (Yes) / No ☑ Sample bottle intact? (Yes) / No
- ☑ Is there enough sample volume in proper bottle for requested analyses? (Yes) / No
- ☑ Proper Preservatives? (Yes) / No Check pH on preserved samples except 1664, 625, 8270 and VOAs.
- ☐ Headspace-VOAs? Greater than 6mm in diameter Yes / No
  N/A List sample ID and affected container

Client Sample ID	pH Check	Other Comments/Issues
-1	pH<2	250mL poly (w/ HNO3)
↓	↓	↓
-7		

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

APPENDIX D

STATISTICAL REPORT ON METHYL MERCURY DATA ANALYSIS

ProUCL Statistical Evaluation of Methyl Mercury in Surface Water
Mount Diablo Mercury Mine
Contra Costa County, California

General Statistics

Number of Valid Observations	21	Number of Distinct Observations	21
Raw Statistics		**Log-transformed Statistics**	
Minimum	0.0607	Minimum of Log Data	-2.802
Maximum	7.26	Maximum of Log Data	1.982
Mean	1.367	Mean of log Data	-0.281
Median	0.657	SD of log Data	1.096
SD	1.797		
Coefficient of Variation	1.315		
Skewness	2.346		

Relevant UCL Statistics

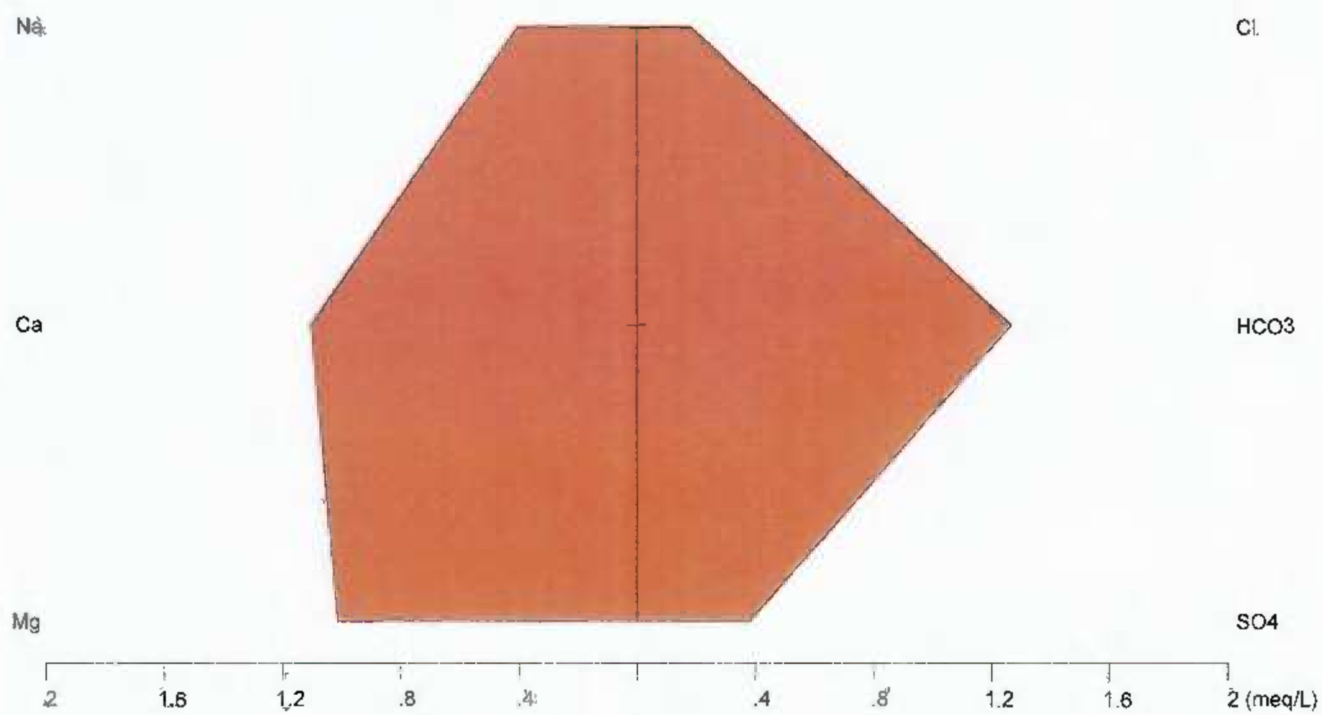
Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.659	Shapiro Wilk Test Statistic	0.954
Shapiro Wilk Critical Value	0.908	Shapiro Wilk Critical Value	0.908
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	2.043	95% H-UCL	2.662
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2.884
95% Adjusted-CLT UCL	2.226	97.5% Chebyshev (MVUE) UCL	3.562
95% Modified-t UCL	2.076	99% Chebyshev (MVUE) UCL	4.893
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	0.868	Data appear Lognormal at 5% Significance Level	
Theta Star	1.575		
MLE of Mean	1.367		
MLE of Standard Deviation	1.467		
nu star	36.44		
Approximate Chi Square Value (.05)	23.62	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0383	95% CLT UCL	2.011
Adjusted Chi Square Value	22.83	95% Jackknife UCL	2.043
		95% Standard Bootstrap UCL	1.984
Anderson-Darling Test Statistic	1.072	95% Bootstrap-t UCL	2.593
Anderson-Darling 5% Critical Value	0.771	95% Hall's Bootstrap UCL	2.547
Kolmogorov-Smirnov Test Statistic	0.198	95% Percentile Bootstrap UCL	2.041
Kolmogorov-Smirnov 5% Critical Value	0.195	95% BCA Bootstrap UCL	2.268
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.076
		97.5% Chebyshev(Mean, Sd) UCL	3.815
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	5.267
95% Approximate Gamma UCL	2.108		
95% Adjusted Gamma UCL	2.181		
		Use 95% Chebyshev (MVUE) UCL	2.88

APPENDIX E

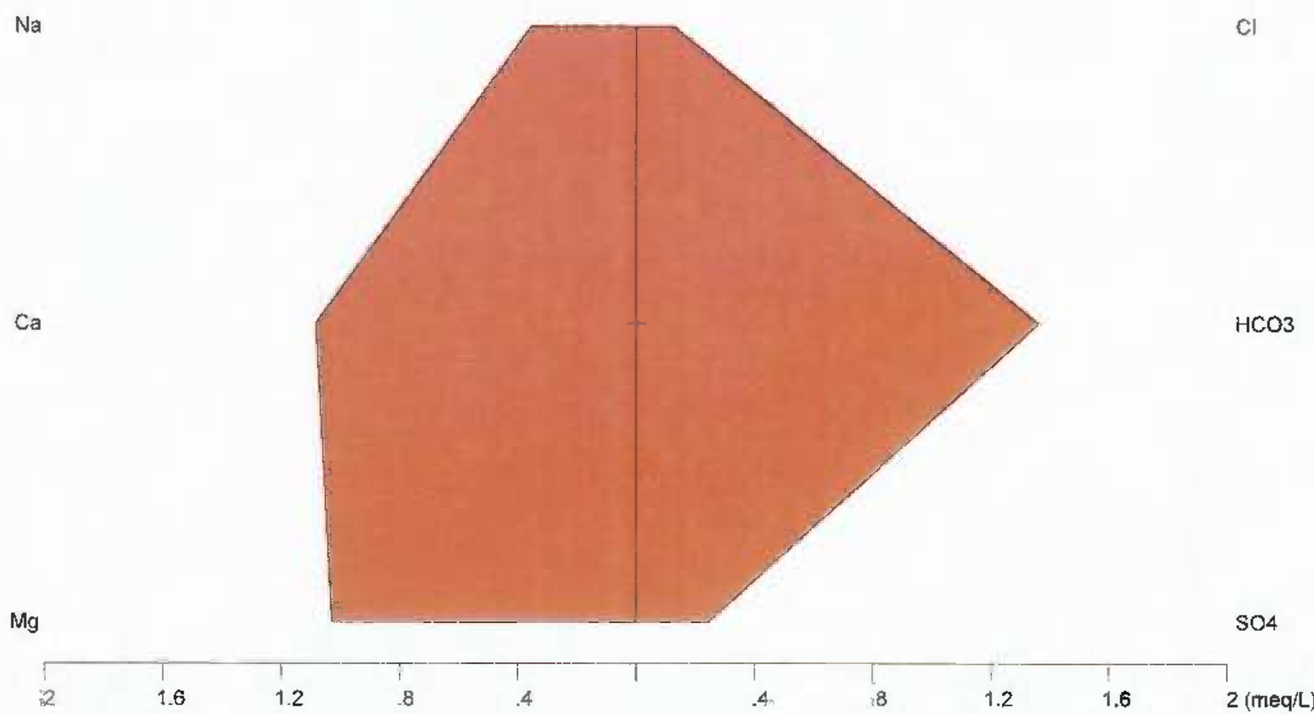
WATER QUALITY STIFF DIAGRAMS FOR 2010 SAMPLING

BACKGROUND WATER SIGNATURE

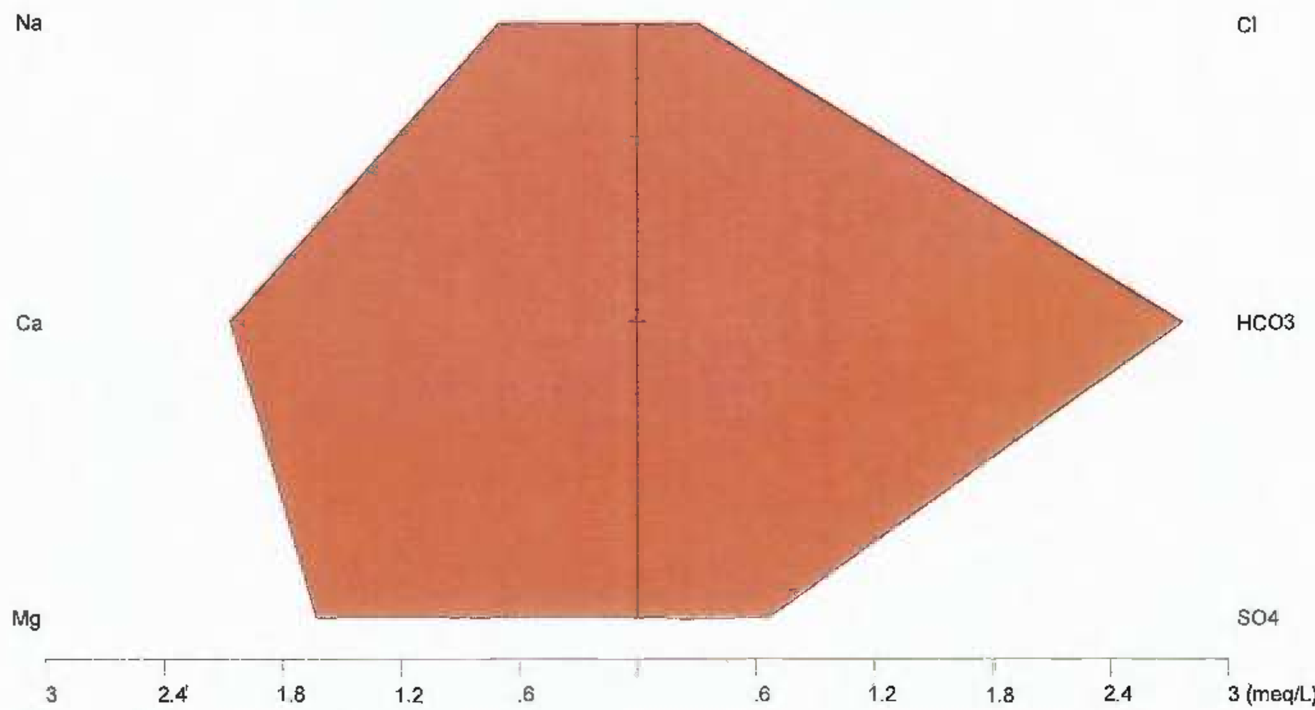
Stiff Diagram – SW-7
Collected April 2010
Background Water
Mt. Diablo



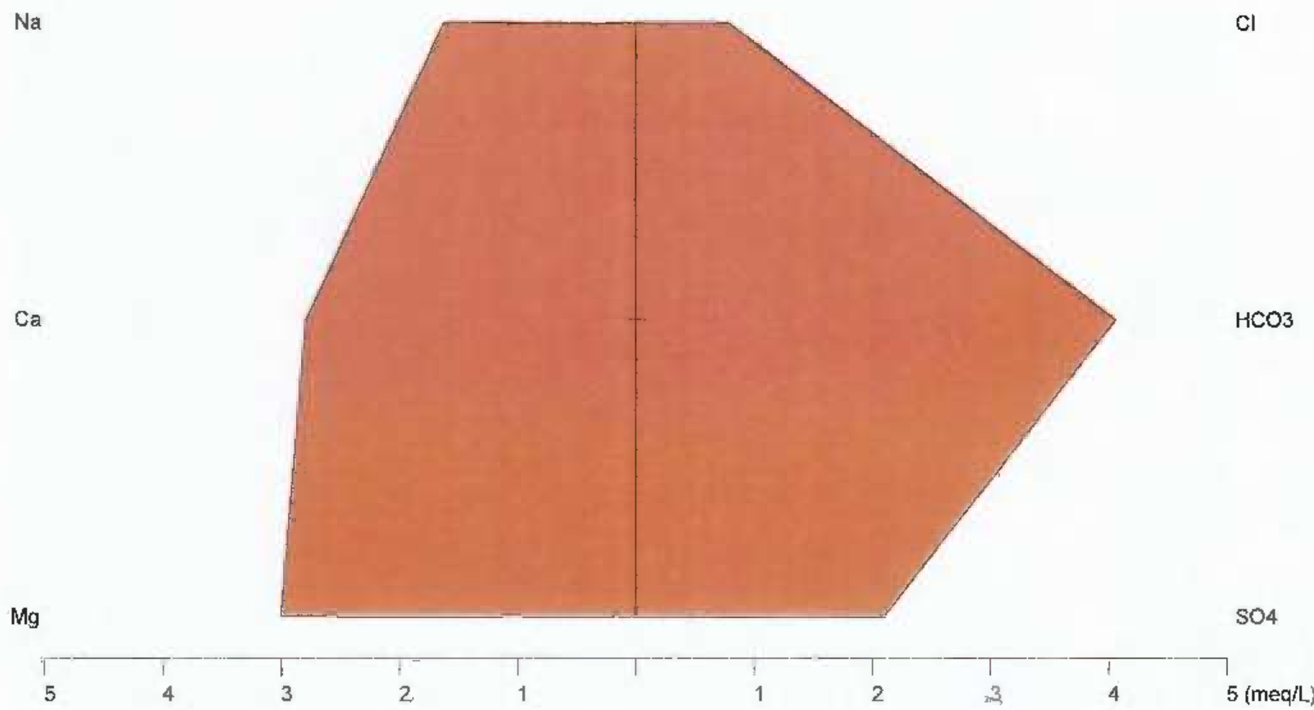
Stiff Diagram – SW-8
Collected April 2010
Background Water
Mt. Diablo



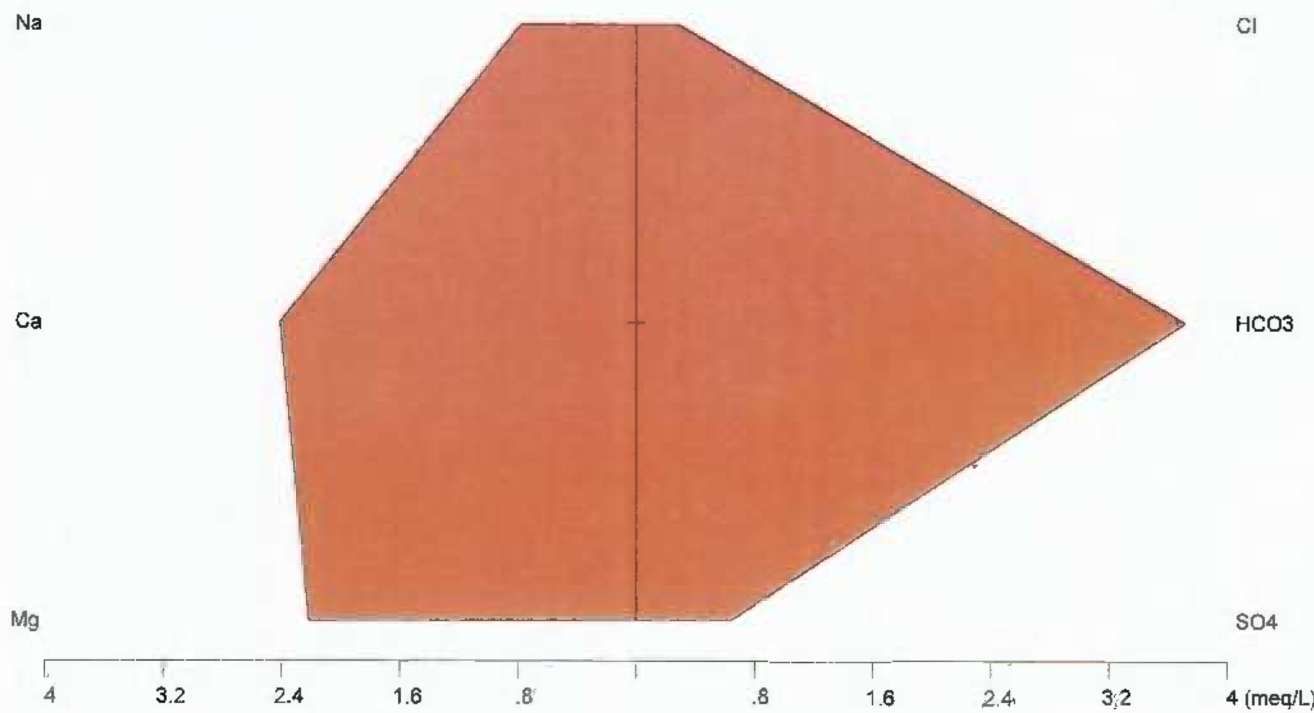
Stiff Diagram – SW-8
Collected May 2010
Background Water
Mt. Diablo



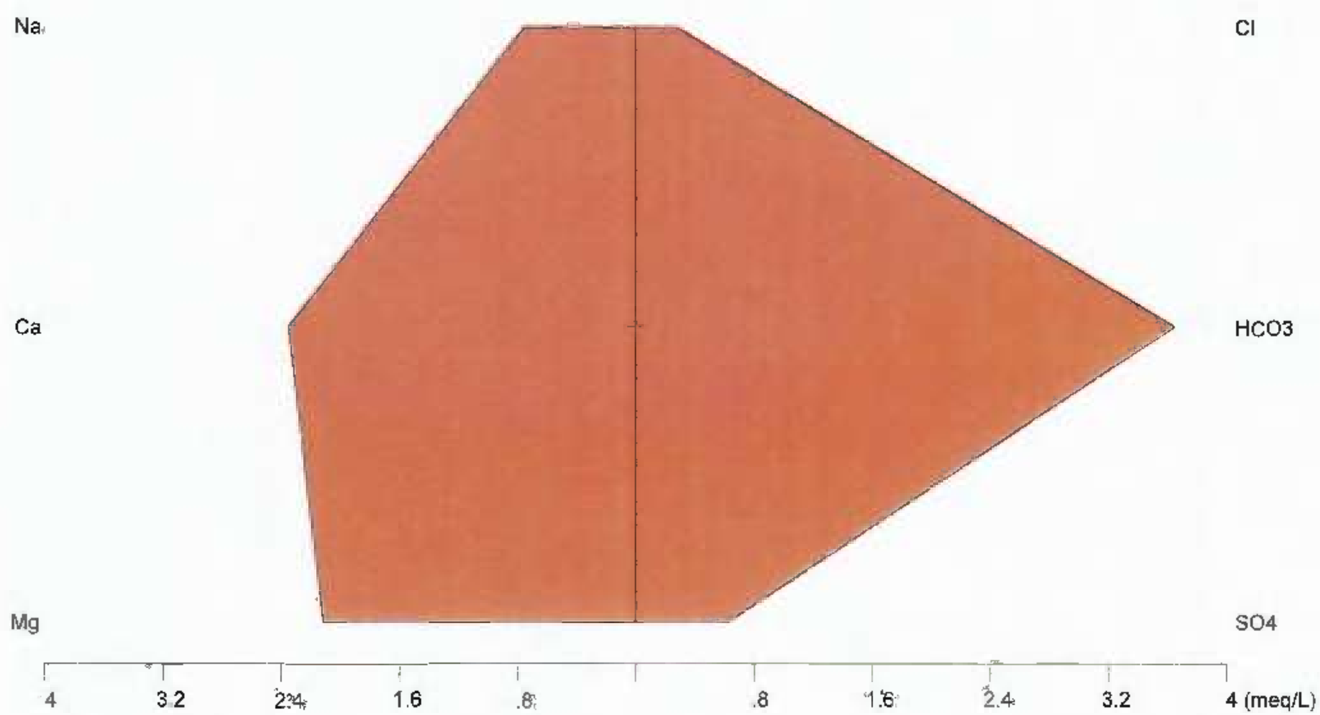
Stiff Diagram – SW-10
Collected May 2010
Background Water
Mt. Diablo



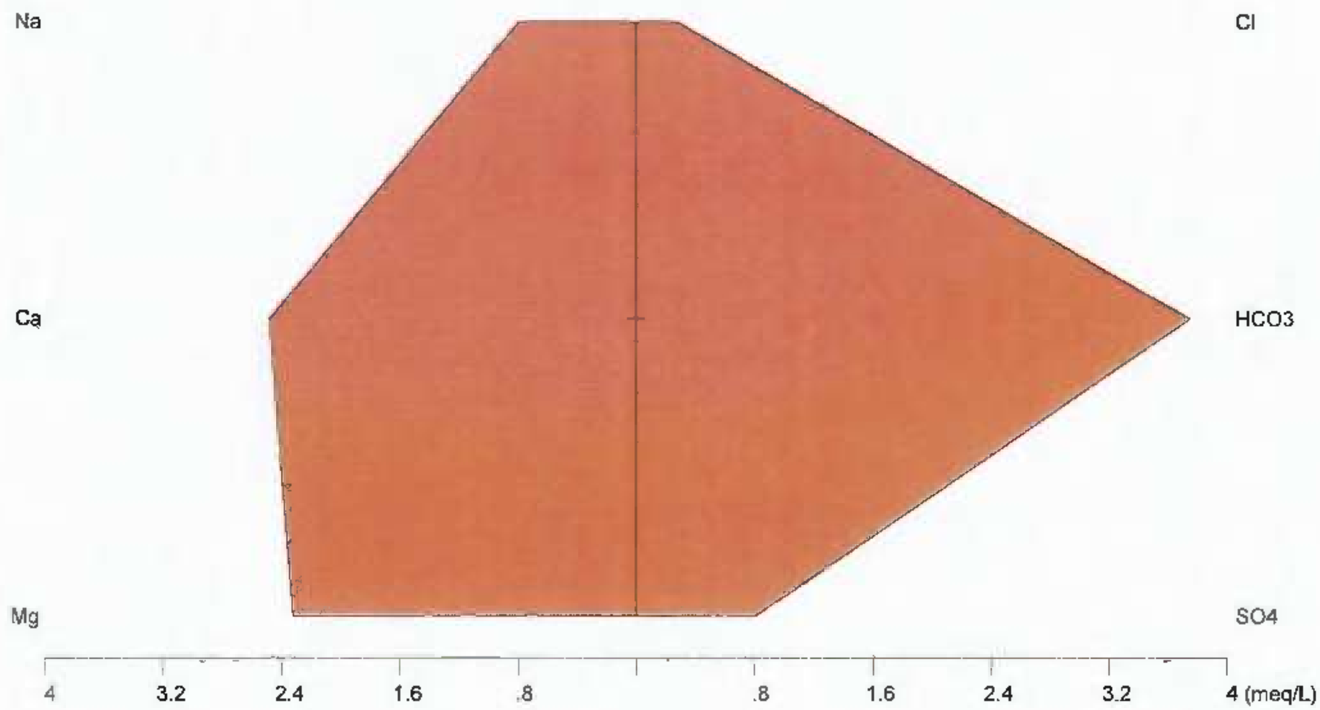
Stiff Diagram – SW-11
Collected May 2010
Background Water
Mt. Diablo



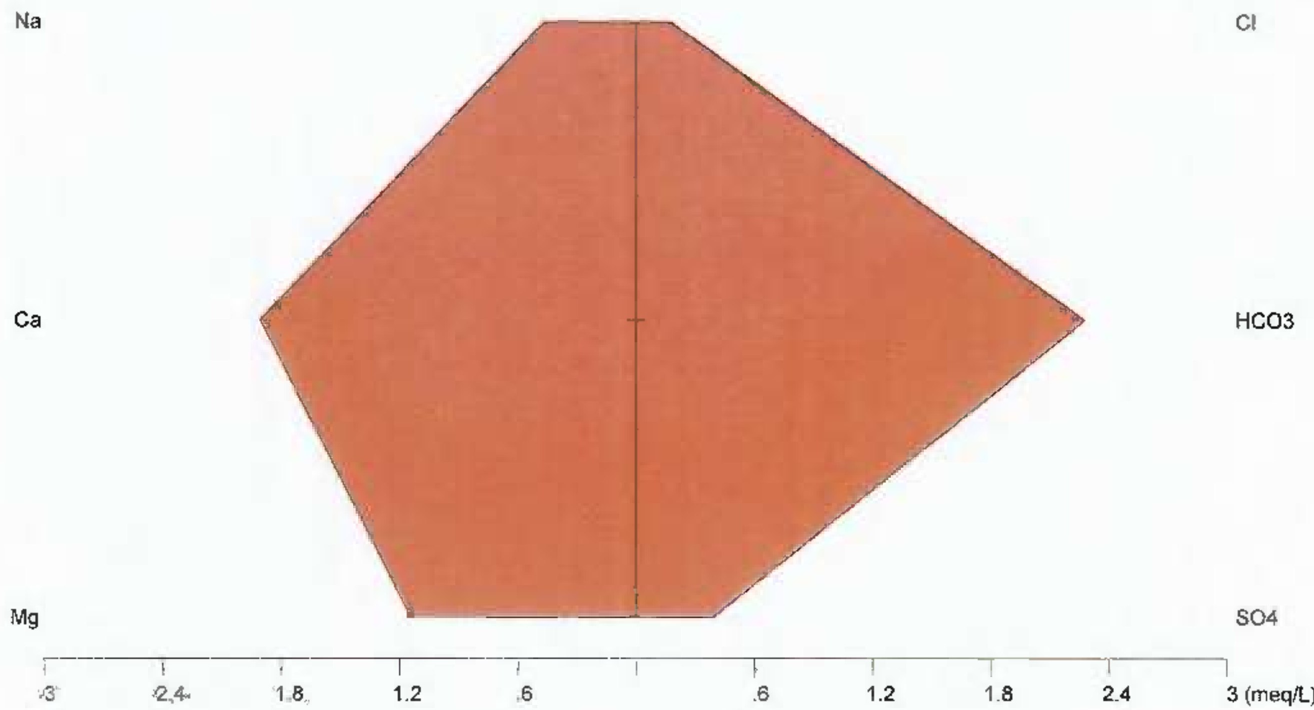
Stiff Diagram – SW-12
Collected May 2010
Background Water
Mt. Diablo



Stiff Diagram – SW-13
Collected May 2010
Background Water
Mt. Diablo

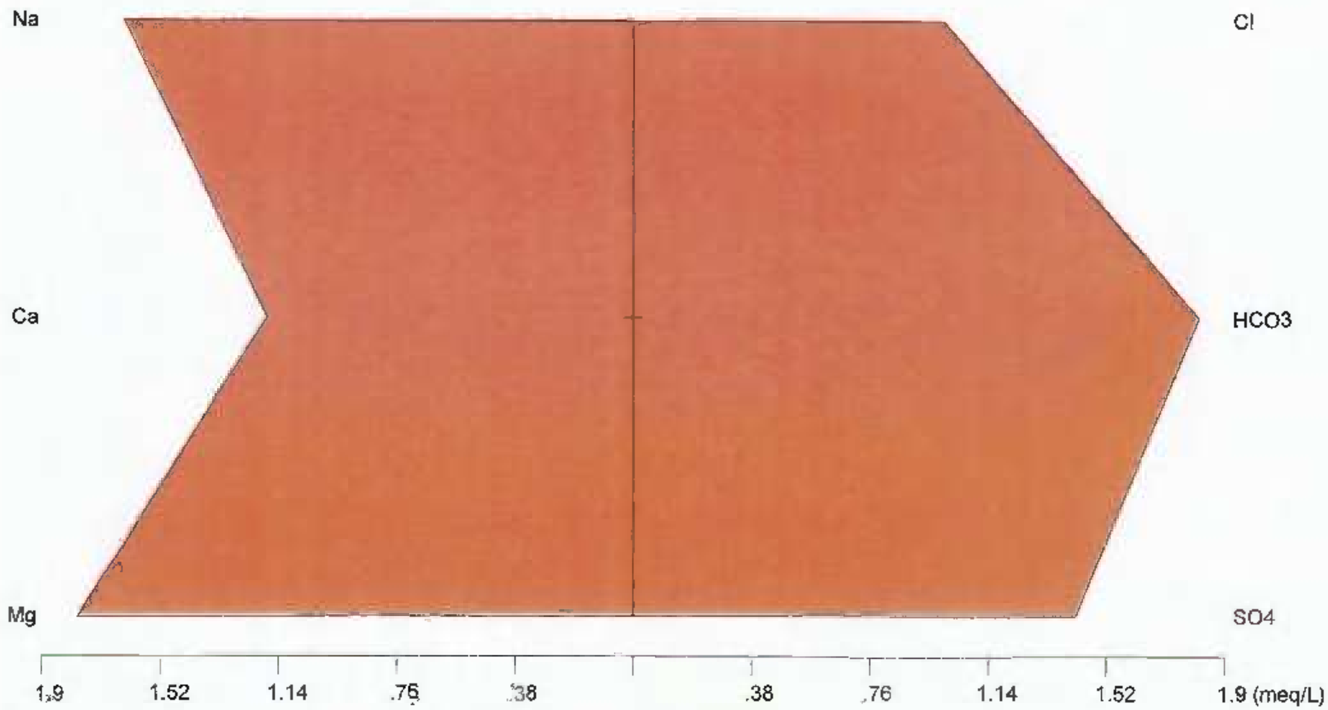


Stiff Diagram – SW-16
Collected May 2010
Background Water
Mt. Diablo

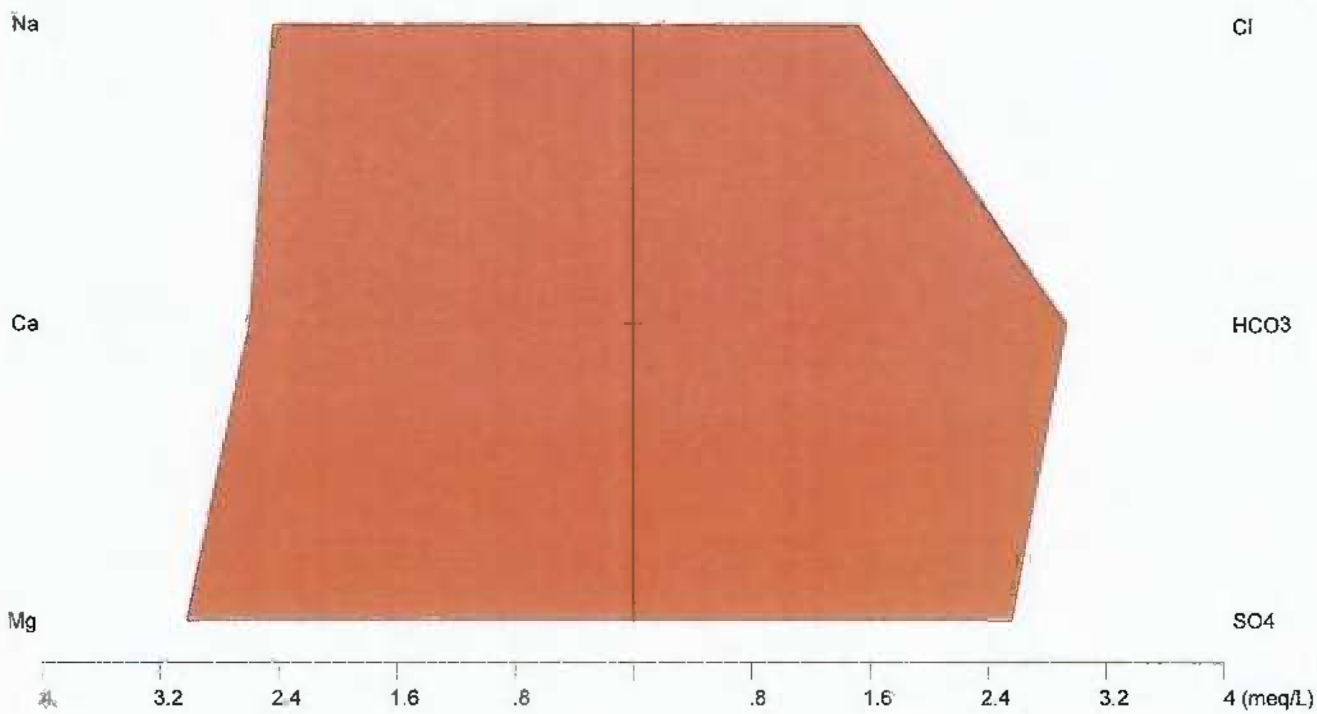


PARK SPRING WATER SIGNATURE

Stiff Diagram – SW-4
Collected April 2010
Background Water
Mt. Diablo

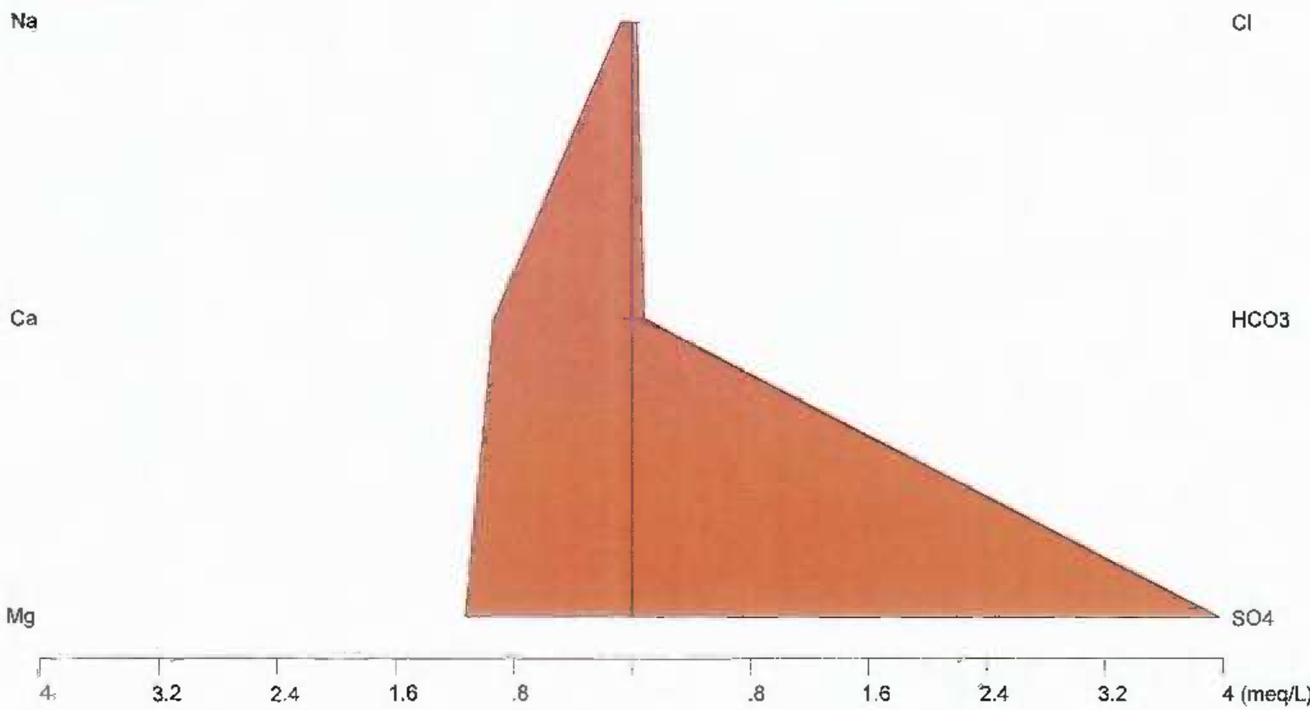


Stiff Diagram – SW-7
Collected April 2010
Park Spring Water
Mt. Diablo

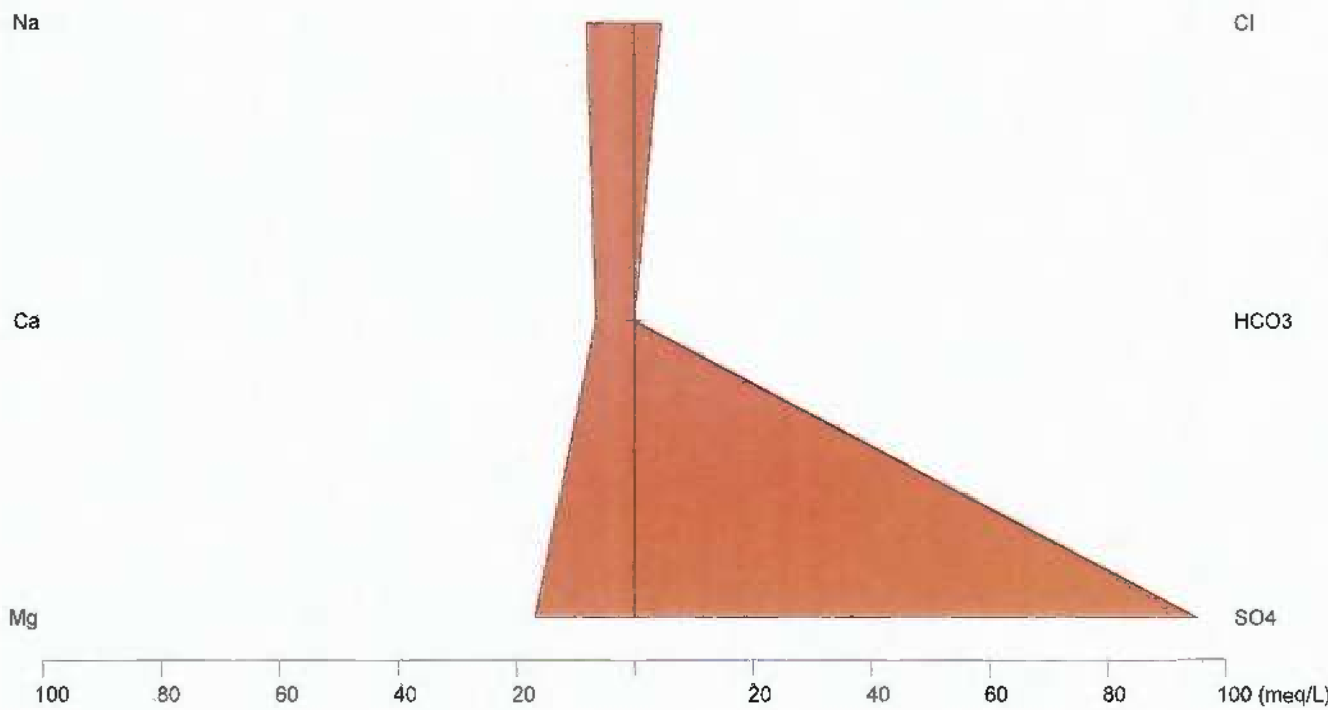


MINE WASTE SOURCE WATER SIGNATURE

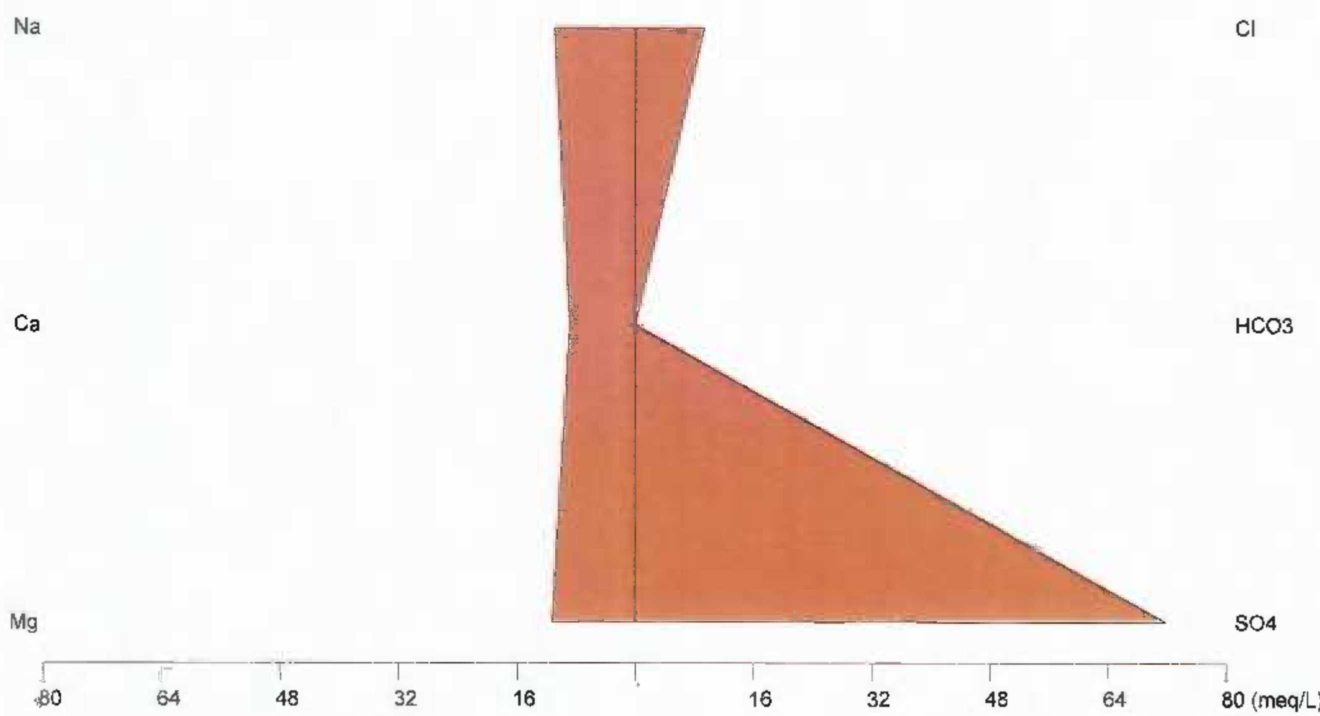
Stiff Diagram – SW-1
Collected April 2010
Mine Waste Source Water
Mt. Diablo



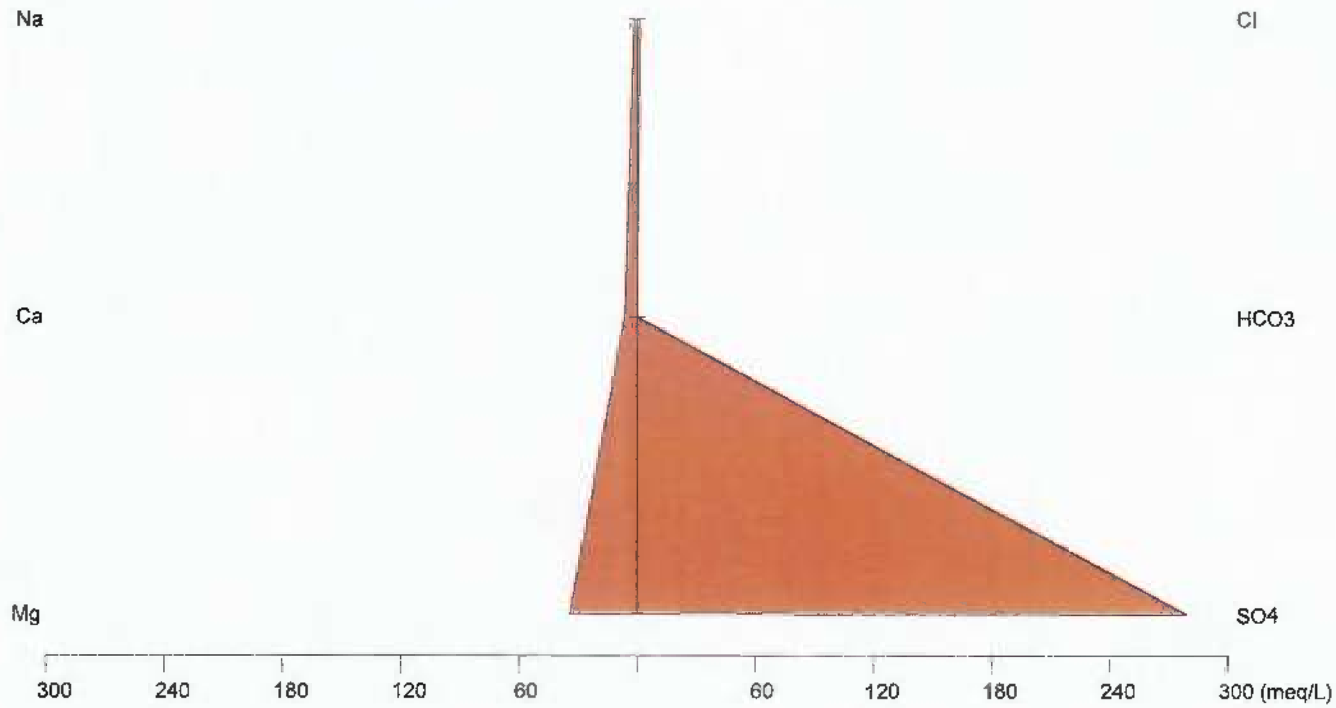
Stiff Diagram – SW-2
Collected April 2010
Mine Waste Source Water
Mt. Diablo



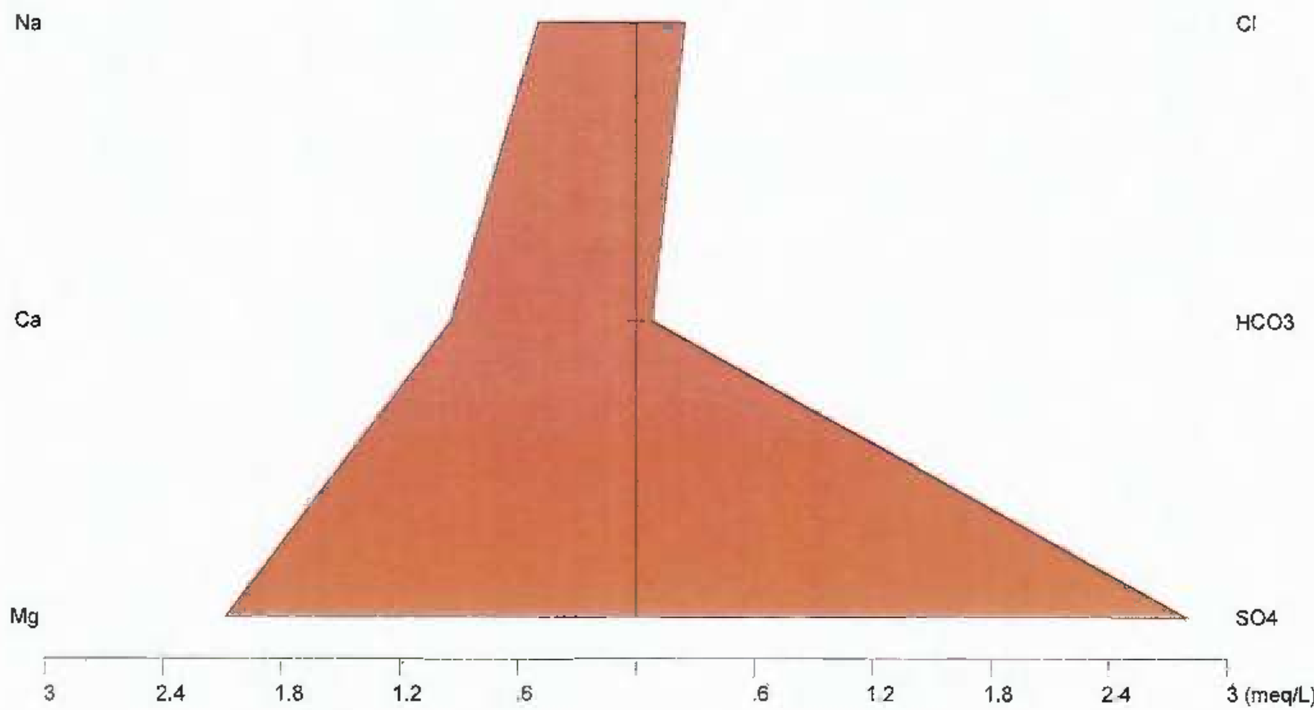
Stiff Diagram – SW-2
Collected May 2010
Mine Waste Source Water
Mt. Diablo



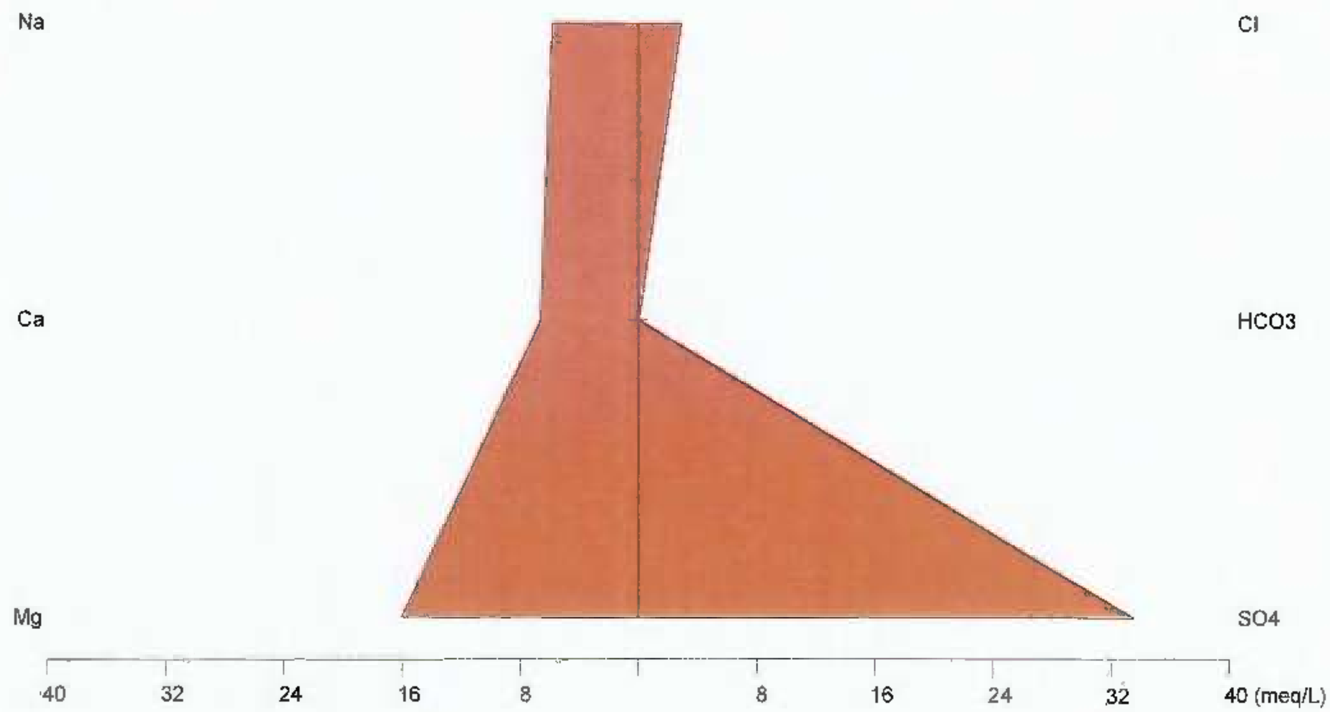
Stiff Diagram – SW-3
Collected April 2010
Mine Waste Source Water
Mt. Diablo



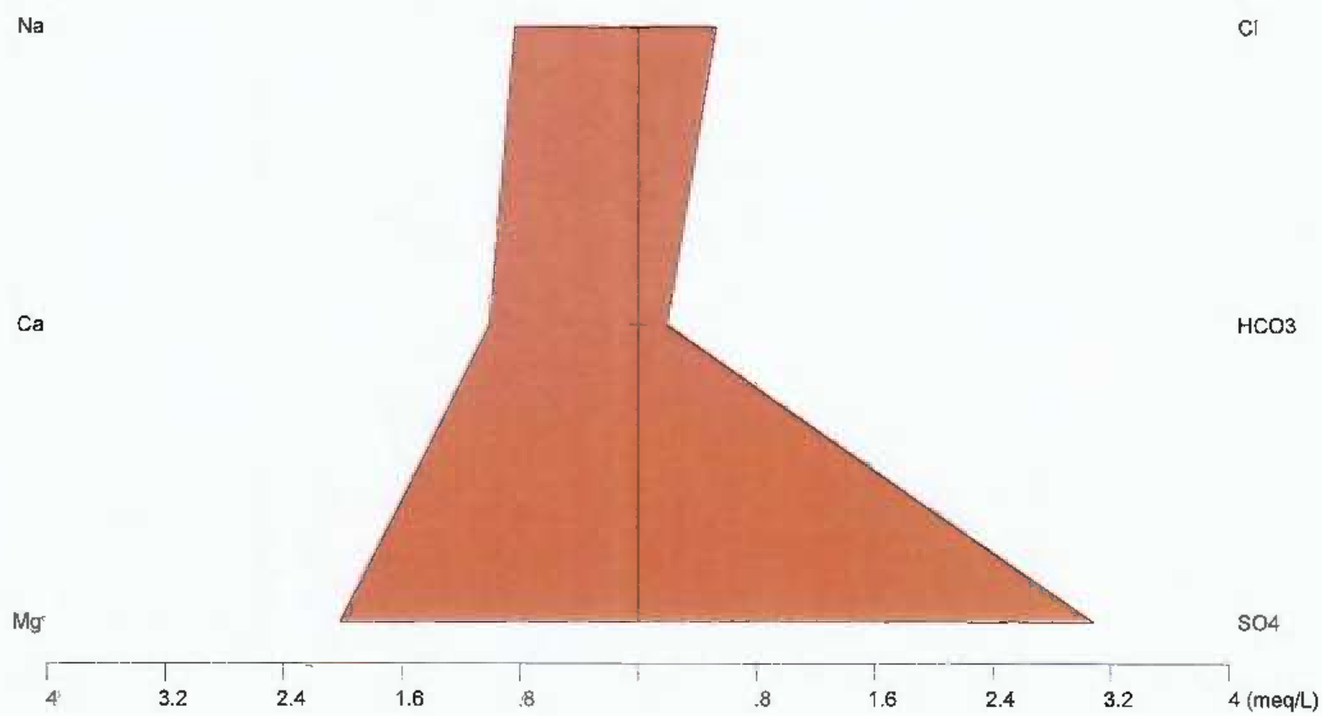
Stiff Diagram – SW-6
Collected April 2010
Mine Waste Source Water
Mt. Diablo



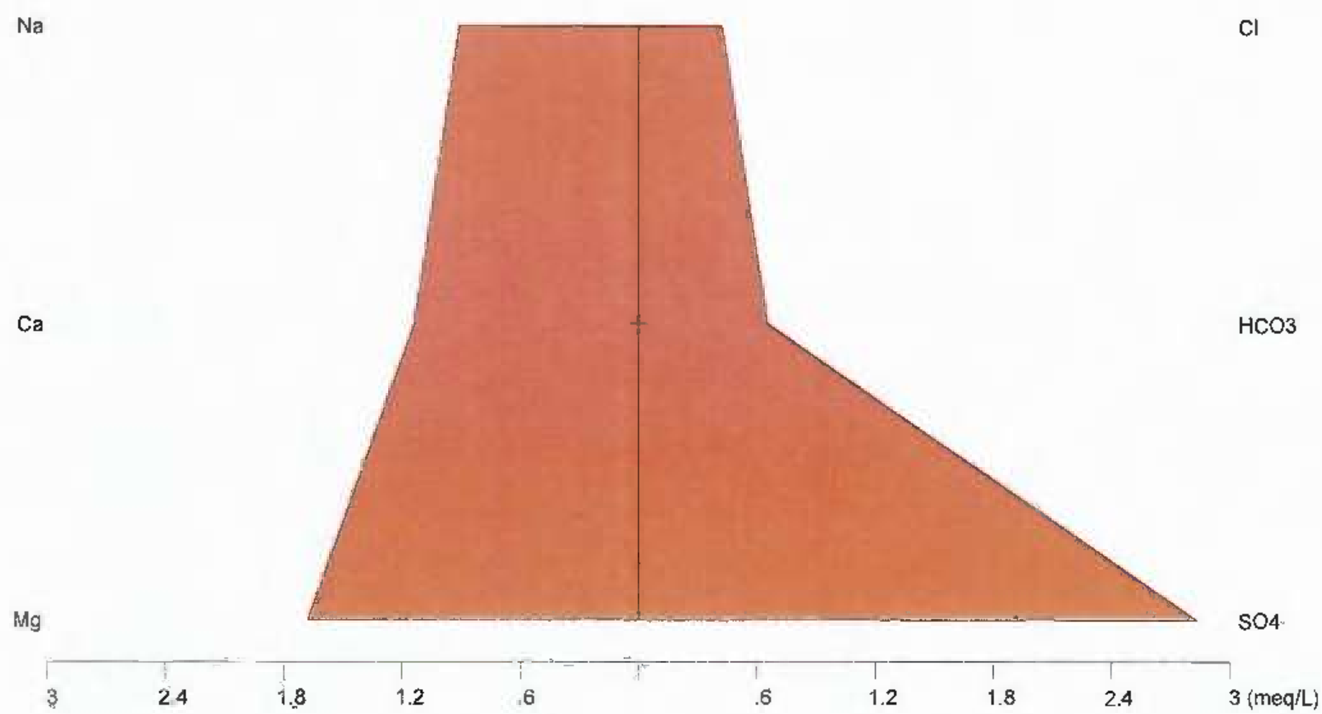
Stiff Diagram – SW-6
Collected May 2010
Mine Waste Source Water
Mt. Diablo



Stiff Diagram – SW-10
Collected April 2010
Mine Waste Source Water
Mt. Diablo

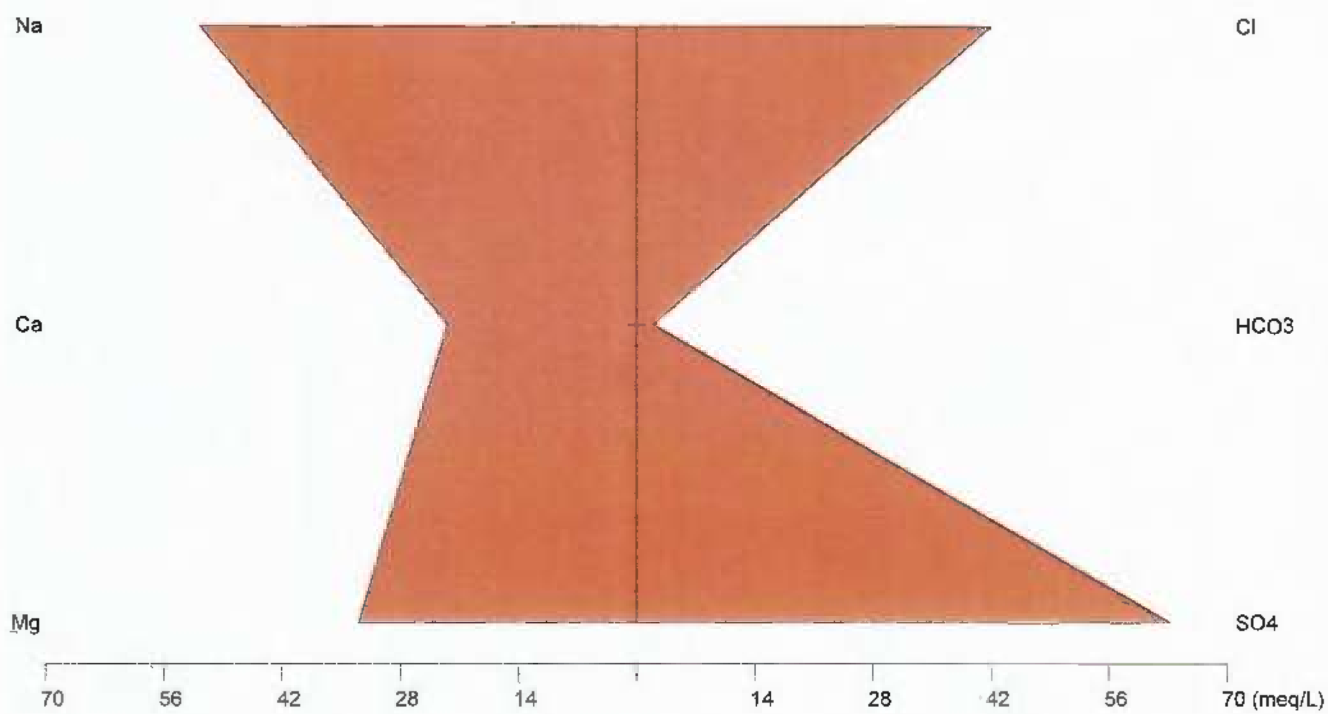


Stiff Diagram – SW-14
Collected May 2010
Mine Waste Source Water
Mt. Diablo

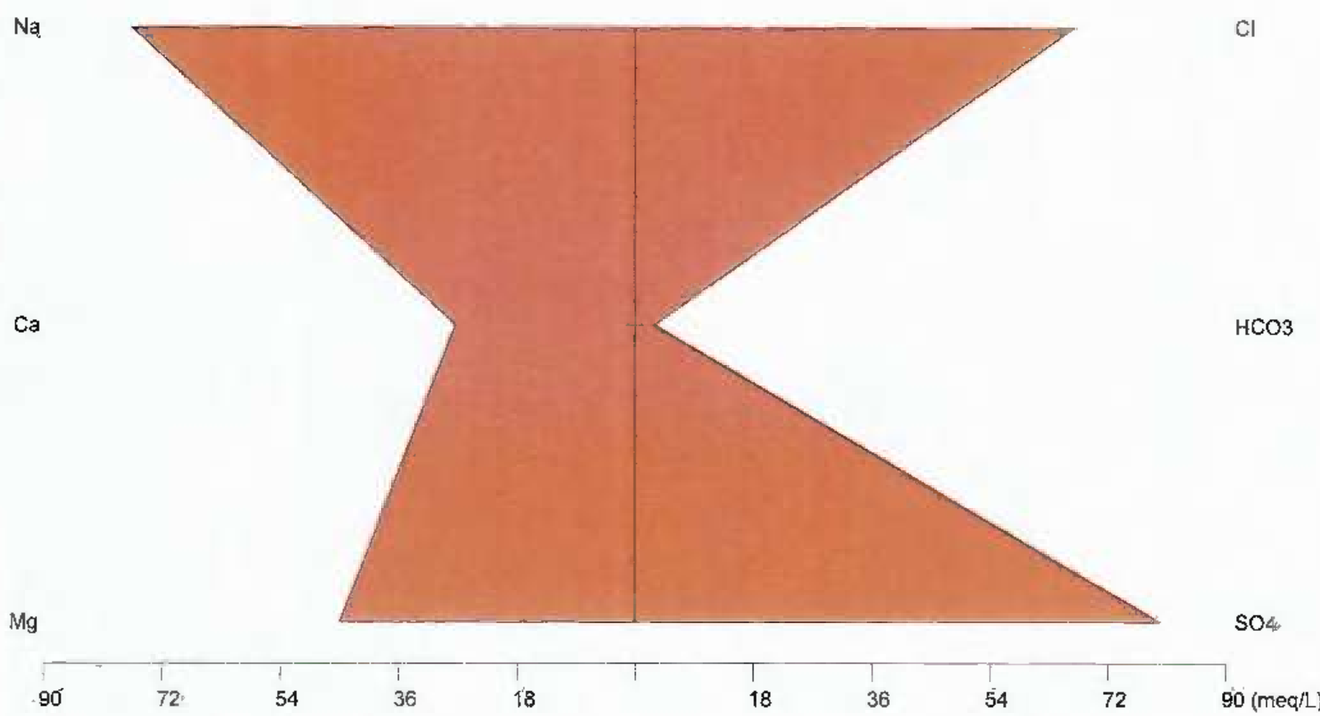


ALTERED MINE WASTE WATER SIGNATURE

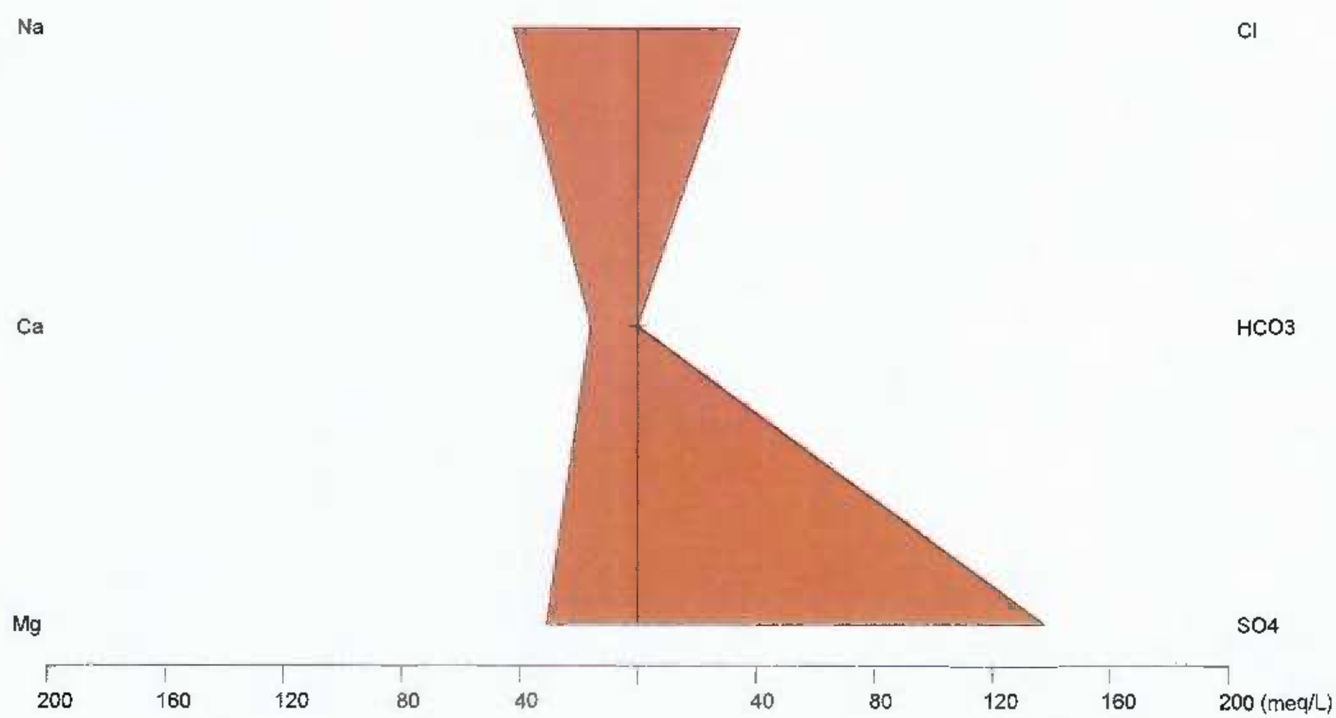
Stiff Diagram – SW-5
Collected April 2010
Altered Mine Waste Water
Mt. Diablo



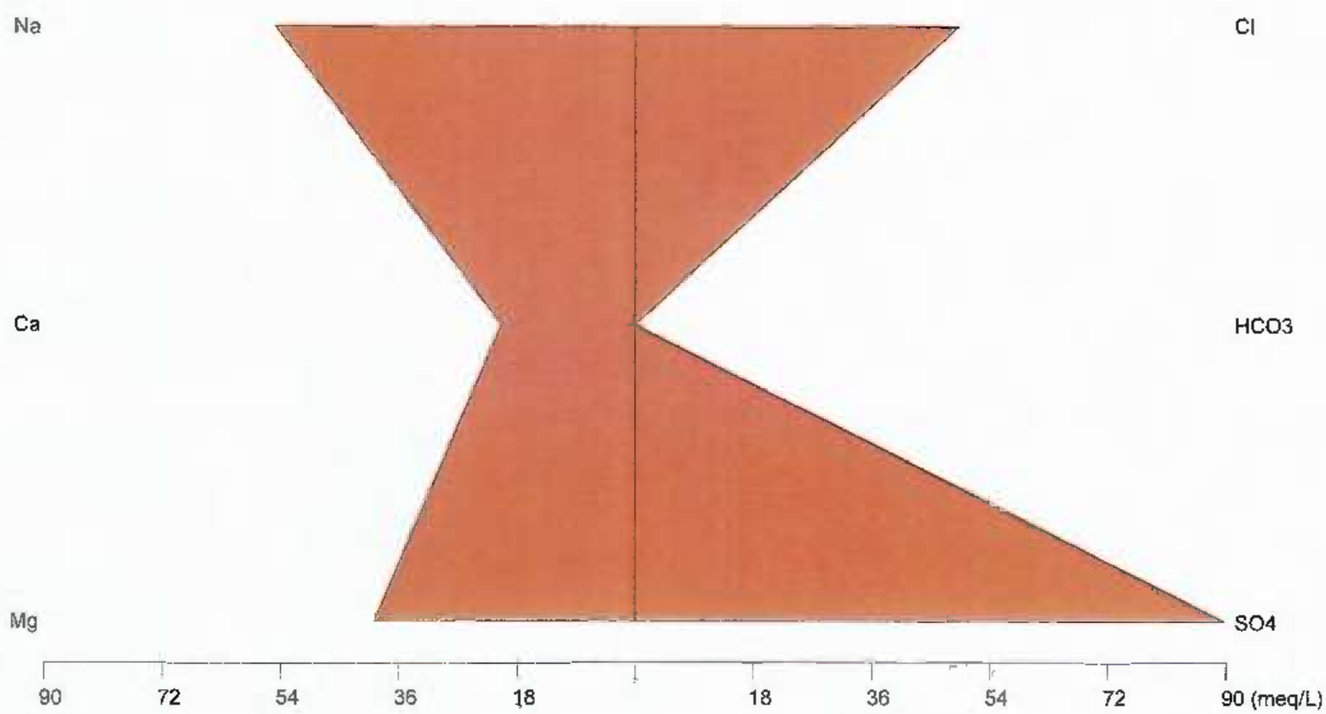
Stiff Diagram – SW-5
Collected May 2010
Altered Mine Waste Water
Mt. Diablo



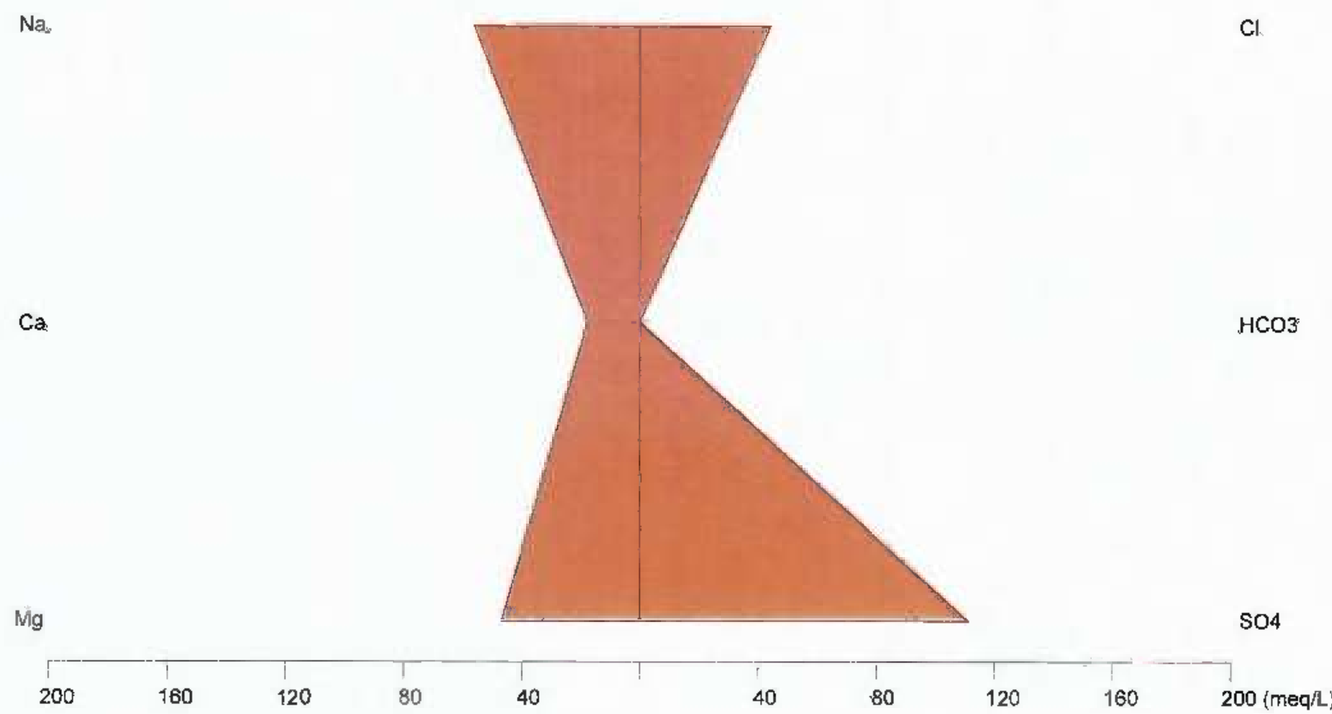
Stiff Diagram – SW-9
Collected April 2010
Altered Mine Waste Water
Mt. Diablo



Stiff Diagram – SW-9
Collected May 2010
Altered Mine Waste Water
Mt. Diablo



Stiff Diagram – SW-15
Collected May 2010
Altered Mine Waste Water
Mt. Diablo



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January 20, 2012

BY EMAIL & U.S. MAIL

Julie Macedo, Esq.
State Water Resources Control Board
Senior Staff Counsel, Office of Enforcement
1001 "I" Street, 16th Floor
P.O. Box 100
Sacramento, CA 95814

Dear Ms. Macedo:

In advance of the January 24, 2012 meeting between Sunoco, Inc. (R&M)("Sunoco") and the Central Valley Regional Water Quality Control Board ("Regional Board") concerning the December 7, 2011 *Additional Characterization Report, Mount Diablo Mercury Mine* ("Site") prepared by Sunoco's consultant SGI, we are bringing to your attention another issue we would like to discuss at that meeting.

Specifically, our ongoing investigation into the corporate relationship between Cordero Mining Company ("Cordero") and Sunoco has determined there is no legal basis for the Regional Board to pursue Site related claims against Cordero, or to attribute Cordero liability at the Site, if any, to Sunoco.

The relevant background facts may be summarized as follows. Cordero was organized under Nevada law on March 4, 1941. Cordero briefly leased the Site and conducted limited operations there between late 1954 and early 1956. Effective as of November 18, 1975, long after Cordero operations at the Site were completed, Cordero was dissolved as a corporate entity, as acknowledged by the Nevada Secretary of State. It is our understanding that Cordero was a wholly-owned subsidiary of Sun Oil Company (Delaware) when Cordero dissolved in 1975.

Nevada law governs the capacity of Cordero, and its former shareholder, to be pursued for Cordero's Site actions. The California Corporations Code does not apply to foreign entities such as Cordero (a dissolved Nevada corporation). *See Cal. Corp. Code § 162* ("'Corporation,' unless otherwise expressly provided, refers only to a corporation organized under this division or a corporation subject to this division under the provisions of subdivision (a) of Section 102.")

Nevada's corporate capacity statute provides that claims against a dissolved corporation relating to pre-dissolution acts survive only for a period of two years following the date of dissolution. NRS 78.595 ("The dissolution of a corporation does not impair any remedy or cause of action available to or against it or its directors, officers or shareholders arising before its dissolution and commenced within two years after the date of the dissolution.") Further, effective June 16, 2011, Section 15 of Nevada Senate Bill 405 enacted a provision reaffirming the limited liability of stockholders of a dissolved corporation:

> "2. A stockholder of a corporation dissolved pursuant to an NRS 78.580 or whose period of corporate existence has expired, the assets of which were distributed pursuant to an NRS 78.590, is not liable for any claim against the corporation on which an action, suit or proceeding is not begun before the expiration of the period described in NRS 78.585."

As noted above, Cordero was dissolved as of November 18, 1975 and lacked the capacity to be sued two years later (November 18, 1977). Therefore, Cordero cannot be a liable party in regards to the Site. For the same reason, and also pursuant to Section 15 of Nevada Senate Bill 405, a former shareholder of Cordero cannot be held liable for Cordero's Site actions either.

A recent decision by the United States District Court for the District of Nevada, *Assurance Co. of Am. v. Campbell Concrete of Nev., Inc.*, 2011 U.S. Dist. LEXIS 145845 (D. Nev. Dec. 19, 2011), supports the non-liability under Nevada law of Cordero's former shareholder with respect to claims arising post-dissolution as well. *See Assurance, supra* (applying Nevada law, grants motion to dismiss filed by defendant shareholder of a dissolved Nevada corporation against which post-dissolution claims had been filed).

We look forward to discussing with you the technical and legal issues related to the Site on January 24, 2012. Please let us know if you have any questions regarding the above in advance of the meeting.

Very truly yours,

John D. Edgcomb

cc (via email only):
V. Izzo
J. Freudenberg
S. Cullinan
B. Morse

SITE REMEDIATION WORK PLAN

Mount Diablo Mercury Mine
2430 Morgan Territory Road
Contra Costa County, California

01-SUN-050

Prepared For:

10 Industrial Highway, MS4
Lester, PA 19029

Prepared By:

3478 Buskirk Avenue, Suite 100
Pleasant Hill, CA 94523

May 8, 2012

Prepared and Reviewed By:

Ivy Inouye
Senior Toxicologist

Paul D. Horton, P.G., C.HG.
Principal Hydrogeologist

Robert Campbell, P.G., C.E.G.
Principal Engineering Geologist

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LIST OF ACRONYMS

As	arsenic
AMD	Acid Mine Drainage
BMP	best management practices
Ca	calcium
CEQA	California Environmental Quality Act
cfs	cubic feet per second
cm/sec	centimeter per second
COC	chemical of concern
COPC	chemical of potential concern
Cr	chromium
Cu	copper
CVRWQCB	Central Valley Regional Water Quality Control Board
CSM	conceptual site model
DMEA	Defense Minerals Exploration Agency
Fe	iron
gpm	gallons per minute
GPS	global positioning system
HASP	Health and Safety Plan
K	potassium
km	kilometer
m	meter
Mg	magnesium
Mn	manganese
msl	mean sea level
Na	sodium
Ni	nickel
NOI	Notice of Intent
Pb	lead
PRP	potential responsible party
RCRA	Resource Conversation and Recovery Act
Sb	antimony
Si	silica
STLC	soluble threshold limits concentrations
SWPPP	Stormwater Pollution Prevention Plan

USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WPCB	Water Pollution Control Board
Zn	zinc
°F	Degree Fahrenheit
ng/L	nanograms per liter
µmhos/cm	micromhos per centimeter

PROFESSIONAL GEOLOGIST CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Paul D. Horton, P.G., C.HG.
Printed Name of Registered Professional Geologist

Signature

PROFESSIONAL GEOLOGIST • PAUL D. HORTON No.5435 • STATE OF CALIFORNIA

CERTIFIED HYDROGEOLOGIST • PAUL D. HORTON HG 581 • STATE OF CALIFORNIA

#5435
Registration Number

California
State

June 8, 1998
Date

1.0 INTRODUCTION

The Source Group, Inc. (SGI), on behalf of Sunoco, Inc. (R&M) (Sunoco), has prepared this Site Remediation Work Plan (Remediation Plan) as required and noted in item 3.0 (Page 5) of the Central Valley Regional Water Quality Control Board (CVRWQCB) December 30, 2009 Revised Technical Reporting Order R5-2009-0869 (Rev. Order) for the former Mount Diablo Mercury Mine in Contra Costa County, California (the Site or Mine). On February 7, 2012, the CVRWQCB issued correspondence approving the Characterization Reports for the Mine and officially setting the due date for submittal of the Remediation Plan as May 8, 2012.

The Revised Technical Reporting Order R5-2009-0869 (Rev. Order) for the former Mount Diablo Mercury Mine was issued to several potentially responsible parties (PRPs), including Jack and Carolyn Wessman, Bradley Mining Co. (Bradley), U.S. Department of the Interior, and Sunoco, which are referred to as Dischargers in the Rev. Order. Sunoco is a named discharger due to its purported connection with the Cordero Mining Company (Cordero) that conducted mercury ore investigations via tunneling and assaying during 1955. Submission of this Remediation Plan on behalf of Sunoco is not a commitment to implement it, which is not required by the Rev. Order, and Sunoco expressly reserves all rights with respect to any obligation to do so.

The Source Group, Inc. has prepared this Remediation Plan, to describe and/or provide the following:

- Site background;
- Characterization of the Mine-related materials to be removed;
- Water quality and human health risk assessment;
- A proposed Mine-related materials removal scope of work;
- A proposed spring/adit water routing and management scope of work;
- The removal design, methods, and procedures;
- A long term maintenance and monitoring plan; and
- A conceptual project schedule.

1.1 Project Objectives

The primary objectives of the removal activities described in this Remediation Plan are to mitigate the migration of particulate material and water potentially containing mercury from Mine-related materials (e.g., waste rock, tailings, and spring/adit discharges) associated with the Site that are potential sources of mercury to Dunn and Marsh Creeks. More specifically, the objectives of this Remediation Plan are to meet the goals specified in the Rev. Order and excerpted as follows:

Order R5-2009-0869, Page 5

3. Within 90 days of staff concurrence with the Characterization Report, submit a Site Remediation Work Plan (hereafter Remediation Plan) for the site. The Remediation Plan shall describe remediation activities to clean up or remediate the mining waste either to background concentrations, or to the lowest level that is technically and economically achievable. The Remediation Plan shall also address long-term maintenance and monitoring necessary to confirm and preserver the long-term effectiveness of the remedies. The potential remediation activities shall comply with all applicable WQOs in the Basin Plan. The Remediation Plan shall also include:

a. An evaluation of water quality risk assessment

b. A human health risk assessment

c. A time schedule to conduct the remediation activities.

The objectives for the Remediation Plan were further discussed and expanded in the February 7, 2012 CVRWQCB correspondence approving Mine Characterization reports excerpted as follows:

"The Reports conclude that groundwater in the Mine workings is chemically no different than background spring water and that Acid Mine Drainage (AMD) discharges are generated by the interaction of water from natural springs, the Mine workings, and rain fall with exposed Mine wastes. The Reports outline a conceptual site remedial plan, which was discussed among Sunoco staff, consultants, and Regional Board staff. The remedial plan could include capturing and re-directing away from Mine waste piles spring/adit discharges. If spring/adit discharges are chemically similar to background native spring discharges then it would be evaluated whether liquid can be released above Dunn Creek as background spring water without further treatment (the Plan should consider an artificial wetlands above the creek to mitigate the discharge). Mine waste may be consolidated where possible and covered to reduce interactions with stormwater. Any Mine wastes or pond solids in the Dunn Creek floodplain should be considered for removal and the Lower Pond SI filled and covered."

This Remediation Plan presents a scope of work designed to address the goals and objectives detailed above. Major scope of work items include the removal, consolidation and capping of Mine wastes of concern, the capture and re-routing of spring/adit discharges, and the restoration of the Dunn Creek Floodplain immediately below the Mine. During execution of the reclamation activities, environmental and health and safety controls would be implemented to ensure the work is completed safely and in accordance with applicable federal, state, and local regulations and permit conditions.

1.2 General Project Approach

The project, as outlined, includes planning, design, permitting, bid specifications, contractor selection, and oversight services during the project development, construction, and post-construction phases. The following summarizes the general approach to each of the project phases and the controls that would be implemented to ensure the work is completed safely and in accordance with applicable federal, state, and local regulations and permit conditions:

- Project Development and Scoping - During this phase, the project will be defined based on the identified objectives and schedule constraints. Applicable county, state, and federal approvals will be attained, bid specifications will be prepared, and the construction contractor selected so construction may be initiated. The implementing parties would work closely with the CVRWQCB, and other regulatory agencies, as needed, to comply with applicable environmental requirements; and identify sustainable business practices that can be integrated into the removal design and implementation. Support from the CVRWQCB through the permitting process to ensure that applications and permits are received in a timely manner will be critical to the overall project success.
- Construction - The construction phase will include Site preparation; removal, consolidation and stabilization of Mine-related waste rock, tailings, and stockpiled ore; removal of Mine-related equipment (if required) and clean capture and routing of Travertine Spring/Adit discharges away from contact with any Mine-related waste materials. During the construction phase, a record of approvals and permit conditions will be created and maintained in a single "*Permit Book*", including all certified and signed permissions and exemptions and a complete list of permit conditions and best management practices (BMPs) that are to be adhered to during construction. In addition, clear lines of communication and project responsibilities will be defined for each construction activity prior to the start of construction. Following completion of removal activities, compliance with permit conditions and requirements will be documented, and the Site will be restored and re-vegetated in working areas, as needed, and a final inspection by CVRWQCB will be scheduled. Following completion of removal and consolidation activities, a long-term maintenance and monitoring plan will be developed as appropriate based on the final disposition of implemented remedial actions concerning capped areas, re-vegetated areas, and water discharge controls.

Descriptions of the removal scope of work and the removal design, methods, and procedures are provided in Sections 3.0 and 4.0 of this Remediation Plan, including the environmental, health and safety controls to be implemented during the project.

1.3 Work Plan Organization

This Remediation Plan is organized as follows:

- Section 2.0 provides background information related to the Site, including an overview of the Site setting, history and development, environmental conditions, and Mine-related material characterization, and conceptual site model (CSM), which provide the basis for the remediation and removal actions.

- Section 3.0 provides the approach and scope of work of the Mine-related material remediation actions.
- Section 4.0 provides detailed descriptions of the removal design, methods, and procedures.
- Section 5.0 discusses the proposed project schedule.

Limitations and list of literature cited in the Remediation Plan are provided in Sections 6.0 and 7.0, respectively.

2.0 BACKGROUND

This section summarizes Site background information relevant to the planned mining-material remediation activities, including the Site setting, history and development, environmental conditions, and characterization of Mine-related material. This information was used to develop the CSM (Section 2.5).

2.1 Site Setting

The Mine is located on the lower flanks of the northeastern environs of Mount Diablo (Figure 2-1). The Site is situated at an elevation of approximately 700 to 1,100 feet above mean sea level (msl), with the general slope of the land down to the east towards Dunn Creek, the eastern border of the property.

The Mine has reportedly been closed since around 1969. Most assay and process equipment has been removed from the Site, yet some abandoned wood structures that were part of the Mine operations remain and are not part of planned remedial actions. Remnants of the Mine visible from Morgan Territory Road include two ponds and bare uncovered tailings piles. The relevant Mine features within the area of focus of this Remediation Plan include the following; collapsed Mine workings area, furnace and processing area, Main Tailings Pile (Bradley Tailings), a series of three ponds on the eastern part of the Mine adjacent to Morgan Territory Road, two springs, and the former Mine portal (165 level Adit).

Currently the Site owners, Jack and Carolyn Wessman, and their lessees, use the Site for residential purposes and small-scale cattle ranching.

2.1.1 Land Use and Ownership

Jack and Carolyn Wessman, additional named dischargers on the Rev. Order, currently own the Mine. The property is used for residential purposes supporting multiple families that include home rentals. Occasionally in the past, the property has been leased for use as an organized paint ball gun battle facility. The property also supports a small herd of cattle owned and managed by Jack Wessman. These cattle are not raised for commercial sale but are used for vegetation control and considered family pets. Jack and Carolyn Wessman have owned the property since 1974 and its use has been primarily the same during this time period. Mr. and Mrs. Wessman purchased the Mine property as part of a larger land purchase in 1974. The property was purchased for residential use. The Wessman family has conducted many modifications to the property over the years during their ownership. This includes the importation of fill materials to fill in Mine openings, covering Mine tailings, and re-directing drainage from the upper Mine area around the exposed eastern Mine tailings as discussed further in Section 2.3.5.

2.1.2 Site Location and Features

The Mine is located in unincorporated eastern Contra Costa County, California at the northeastern base of Mount Diablo. The Mine lies 5 miles east from the town of Clayton and just south of the intersection of Marsh Creek Road and Morgan Territory Road (Figure 2-1). The Site as it pertains to the focus of this Remediation Plan includes the former Mine and its historic working areas that make-up the southeastern quadrant of the property owned by Jack and Carolyn Wessman. The Site is adjoined to the south and west by lands of Mount Diablo State Park, to the north by the remainder of Wessman Property Holdings, and to the east by Morgan Territory Road.

Mine-related features that remain on the Site include buildings associated with the old furnace plant, and various other related Mine buildings including the former electrical shed, the dynamite storage building, a former stack foundation and various other wooden out-buildings (Figure 2-2, Mine Features). The most prominent features that remain include the highly visible Main Tailings Pile located on the eastern slope of the Mine property bounded on the east by the Lower Pond Surface Impoundment (Lower Pond SI). The Main Tailings Pile is highly visible due to the fact that it is a bare, red and orange pile that supports little vegetation. Spring water discharges from the face of the Main Tailings Pile creating a steady source of surface flow that moves across the lower portion of the Main Tailings Pile and into the Lower Pond SI. The source of this continuous spring flow is interpreted to be from two buried Site features. The Main Tailings Pile was placed over a natural spring called the travertine Spring that pre-dates mining activity. This spring has resulted in the deposition of travertine deposits along the slope from the spring emanation point to the valley floor. These travertine deposits underlie on-lapping Mine tailings and derived sediments. Upslope and to the North of the original Travertine Spring emanation point lies the buried portal of the 165 level Adit. The 165 level Adit is buried by approximately 40 feet of tailings material and the location and condition of this portal are unknown. Spring water that emanates from the face of the Main Tailings Pile daylights through one main discharge point supplemented by several seeps below the former locations of both the Travertine Spring and the buried portal of the 165 level Adit (Figure 2-3).

The Lower Pond SI is the location of the historic Mine-constructed surface impoundment that has been upgraded by the current property owner to provide effective containment of historic Mine-derived waste and sediments. The Lower Pond SI contains sediments largely sourced via stormwater flow and Travertine Spring/Adit discharge drainage through and off the Main Tailings Pile. The Middle Pond contains stormwater and flanks the Lower Pond SI to the north. The Middle Pond is not a historic Mine feature but was created by the current property owner, Jack Wessman, as part of stormwater management controls for the Mine conducted under the direction of the CVRWQCB.

2.1.3 Potentially Significant Historical and Archeological Features

The Mine property is currently not listed on the National Register of National Historic Landmarks nor is it listed as a California Historical Landmark. The Mine was developed in the mid to late

1800's and portions of original mining equipment and structures remain at the Site. Remedial actions proposed in this Remediation Plan do not currently include the removal or destruction of any of these historic Site structures.

2.1.4 Regional Geologic Setting

Mount Diablo is a geologic anomaly about 30 miles (50 kilometers [km]) east of San Francisco. The mountain is the result of geologic compression and uplift caused by the movements of the Earth's plates. The mountain lies between converging earthquake faults and continues to grow slowly. The mountain grows from three to five millimeters each year.

The upper portion of the mountain is made up of volcanic and sedimentary deposits of what once was one or more island arcs of the Pacific Plate dating back to the Jurassic and Cretaceous periods, between 90 and 190 million years ago. During this time, the Pacific Plate was subducting beneath the North American continent. These deposits were scraped off the top and accreted onto the North American Plate. This resulted in the highly distorted and fractured basalt and serpentine of the Mount Diablo Ophiolite and metasediments of the Franciscan complex around the summit. East of the subduction zone, a basin was filling with sediment from the ancestral Sierra further to the east. Up to 60,000 feet (18,000 meters [m]) of sandstone, mudstone, and limestone of the Great Valley Sequence were deposited from 66 to 150 million years ago. These deposits are now found faulted against the Ophiolite and Franciscan deposits.

Over the past 20 million years continental deposits have been periodically laid down and subsequently jostled around by the newly-formed San Andreas Fault system, forming the Coast Ranges. Within the last four million years, local faulting has resulted in compression, folding, buckling, and erosion, bringing the various formations into their current juxtaposition. This faulting action continues to change the shape of Mount Diablo, along with the rest of the Coast Ranges.

The following describes the regional geology for Mount Diablo, as reported by Pampeyan (1963):

> "The Coast Ranges of California east of San Francisco consist of Mesozoic and Cenozoic rocks, folded into a series of northwest-striking anticlines and synclines that are in some places overturned to the west. The Diablo Range, which forms the east edge of the Coast Ranges, is made up of a number of folds lying en echelon for more than 150 miles south of the Bay Area; Mount Diablo is at the north end of the Diablo Range and on the crest of one of these anticlines.
>
> The rocks of Mount Diablo and vicinity can be divided into four groups: (1) a basement complex of broken and jumbled sedimentary, igneous, and metamorphic rocks; (2) a section of younger sedimentary rocks, more than 35,000 feet thick, in fault contact with the basement complex; (3) volcanic rocks which locally cut and overlie the younger sedimentary rocks; and (4) landslides, alluvium, and travertine which in places cover the older rocks.

The rocks of the basement complex make up the main mass of Mount Diablo, which occupies an area of about 18 square miles. They are in fault contact with the surrounding sedimentary rocks and form a semicircular plug which has been upthrust through the overlying strata. This plug is divided into two parts by a narrow northeast-trending band of serpentine. South of this band, greenstone, chert, graywacke, shale, limestone, schist, and conglomerate of the Franciscan formation, cut by a few small bodies of serpentine, crop out in an area of 11 square miles. North of the serpentine band, an area of 5 square miles is occupied mainly by diabase but includes a few exposures of pillow basalt and vesicular diabase. The exact age relations of the rocks composing the basement complex are unknown; but it appears that first the diabase and then the serpentine intruded the Franciscan rocks before the plug was emplaced.

The sedimentary rocks overlying the basement complex consist mainly of fossiliferous clastic marine beds ranging in age from late Jurassic to late Miocene, but fresh-water Pliocene deposits overlie the Miocene beds south of Mount Diablo.

On the northeast side of Mount Diablo, Cretaceous rocks are cut by dikes and plugs of rhyodacite probably of late Tertiary or early Quaternary age. South and east of Mount Diablo, along the periphery of the plug, numerous recent landslides obscure much of the bedrock geology."

2.1.5 Mine Geology

The Mount Diablo Mine area geology discussed below is summarized from Knox (1938), Ross (1940), Division of Water Resources (1952), Pampeyan (1963), and Dibblee (1980), and Iovenetti (1989). The most recent geologic maps of the area are in Pampeyan (1963) and Dibblee (1980).

The rocks of the Mount Diablo basement complex are separated from the Jurassic and younger rocks by what Pampeyan (1963) called the boundary fault, which is actually a fault zone. In most places, the boundary fault consists of highly sheared material up to 100 feet wide. In discussing the Mount Diablo Mercury Mine, Pampeyan and Sheahan (1957) reported that, "*The Mine is located in a fault zone that separates Franciscan sandstone and minor chert, greenstone, and shale on the west from Cretaceous shales and calcareous sandstone on the east (Figure 2-4). Two fault trends were mapped in the area. The mercury ore body that sourced the Mount Diablo Mercury Mine is within a northwest trending fault zone consisting of four traces (Knox, 1938). A north-south trending fault zone, approximately 200 feet east of the surface impoundment, was mapped by Dibblee (1980). He also reported that, "The quicksilver deposits form only in Franciscan formation, in serpentine and silica-carbonate rock which is an alteration product of serpentine.*"

Ross (1940) reported that, "*The lodes are in fracture zones near the footwalls of inclined, more or less tabular serpentine masses in Franciscan rock. They are thought to be formed by hot springs so recent that it is still giving rise to sulphurous gases and methane. The lodes are unique in that* *meta-cinnabar is an abundant primary ore mineral. The ore shoots are in zones of intense brecciation and are controlled in part by cross-fractures.*"

The mercury mineralization at the Mine principally occurs in silicacarbonate rocks which are a product of hydrothermal alteration of the Franciscan serpentine. The primary ores in the Mine are metacinnabar and cinnabar. The gangue minerals are quartz, calcite, marcasite, pyrite, chalcopyrite, and stibnite. The iron sulfides, marcasite, and pyrite are commonly present and locally abundant. Hydrogen sulfide, sulfur dioxide, and methane gases were encountered during mining operations in considerable amounts. Several types of sulfates were also widespread throughout the Mine workings especially in portions of the Mine that were relatively undisturbed for a long time.

A relatively large hot spring deposit, which has been variously described as calcareous tufa, calcareous sinter or travertine, is southeast of the Mine. The hot spring is no longer active, but a small spring with continuous flow was reported by Ross (1940) near this deposit and it was mapped as a Travertine Spring by Knox (1938). Neither the water chemistry nor temperature for this spring was documented; however, Pampeyan (1963) reported that the location of this spring was near the portal of the 165 level Adit (Figure 2-4).

Southwest of the Lower Pond SI, a significant but relatively low flow spring complex occurs on the Mount Diablo State Park land (the State Park Spring). This spring complex is apparently on one of the northwest trending faults associated with the mercury mineralization.

The Lower Pond SI is located in the small valley which contains Dunn Creek, a tributary to Marsh Creek. The former channel for Dunn Creek longitudinally traverses the Lower Pond SI. In the area of the "*travertine*" deposit, the base of Dunn Creek is "*travertine*" cemented alluvial gravel. Virtually this entire travertine deposit is presently overlain by Mine tailings to the west and the Lower Pond SI to the east.

2.1.6 Hydrogeology

Groundwater presence and movement in the area is neither predictable nor continuous due to the highly distorted and fractured nature of the Mount Diablo Ophiolite and meta-sediments of the Franciscan complex around the summit. However, the presence of many springs around the base of Mount Diablo attests to the accumulation and movement of groundwater recharged on the slopes of the mountain.

Well drillers in the area report that water production in the Cretaceous shale formations (like those adjacent to the ore zone at the Mine) are very unpredictable. Very often, no water is found. When it is produced, production is generally low and water quality degrades during the summer months. This is corroborated by the findings produced by a study of the Division of Water Resources (1952) when investigating conditions around the Mine.

Groundwater is present in the Mine workings. Two monitoring wells completed within the Mine workings indicate an upward hydraulic gradient in this area of Mount Diablo (see Section 2.3.4).

The presence of springs along the fault trace that defines the mercury ore zone at the Mine indicates the movement of groundwater sourced in the environs of Mount Diablo is moving down slope and forced to the surface as it encounters the highly sheared material within the 100 foot thick fault zone. Groundwater emerging as spring water contains a large mineral load consistent with movement within the highly mineralized rock of the fault zone at the Mine. Monitoring well DMEA-1, located within the Cretaceous shale and calcareous sandstone formations north and east of the fault zone, was dry and devoid of groundwater until the fault zone was encountered at depth (Section 2.3.4 and SGI, 2011).

Hydraulic head conditions combined with water quality data from these monitoring wells confirm the vertical movement of groundwater up through the fault zone on its path to discharge via the springs, and potentially via near-surface sub-flow that is not visible. Under the direction of the CVRWQCB, Jack Wessman conducted an investigation of sub-flow at a location just west of the Lower Pond SI. Jack Wessman constructed the trench on June 5, 1989. Water was found at a depth of 6 feet below grade with a field ph of 4.44 and electrical conductance of 13,620 micromhos per centimeter (µmhos/cm). This is similar to the water quality of current spring water seeps on the face of the Main Tailings Pile (SGI, 2011) and indicates the presence of near-surface sub-flow in the area between the Lower Pond SI and the Main Tailings Pile lying above and west.

One residential supply well is located to the northwest of the Mine area providing potable water supply to the Wessman Family residence. Jack Wessman reports that this well makes plenty of water and has been tested by the Wessman family for suitability as a potable water supply. This well has been the source of water supply to the Wessman family since 1974. Additional residential properties located within the Wessman property tract north of the Mine are provided water by the local water company.

2.1.7 Hydrology

The Mine lies within the upper reaches of the 128 square mile Marsh Creek Watershed (Figure 2-5). The Mine is bordered on the east by Dunn Creek, a minor tributary to Marsh Creek. On the north, a feeder stream to Dunn Creek called "*My Creek*" drains the northern portion of the Mine Site. Two perennially flowing springs are located in the Mine area and are designated the "*State Park*" Spring and the "*Travertine/Adit*" Spring. The State Park Spring is located near the Mine property boundary on lands of the Mount Diablo State Park. The Travertine/Adit Spring emerges on the eastern slope of Mine tailings mid-way between the top of the tailings mound and Dunn Creek floodplain (Figure 2-3). Evaluation of flow from the Travertine/Adit Spring in summer and late fall is based on field observation estimates conducted by SGI are on the order of 3 to 5 gallons per minute (gpm).

One ephemeral spring, the Ore House Spring, is located near the historic Mine Furnace Plant. The Ore House Spring is a low flow spring and has not been observed to have enough flow to cause notable overland flow from the spring's emanation point. Flow from this spring currently moves into a drainage ditch that is channeled with other surface water in the area that ultimately flows into the

Upper Pond and then to Dunn Creek. The only known measurement of flow from the Ore House Spring was made by Slotton (1996) at 0.01 cubic feet per second (cfs) in late March of 1995 following an extensive period of storms (Slotton, 1996). As a result of the timing of measurement by Slotton, this flow rate can likely be considered on the high side of the range for spring base flow at this location.

Two perennial ponds exist in the Dunn Creek floodplain directly below the area of exposed Mine tailings. Both of these ponds drain directly into Dunn Creek. A third ephemeral pond (the Upper Pond), created by the current property owner as part of stormwater controls, is located on the slopes of the Mine above Middle Pond and drains directly into the Middle Pond.

All surface water leaving the Mine is ultimately captured by Dunn Creek. Dunn Creek flows south from the Mine Site to join Marsh Creek 0.5 miles downstream. Marsh Creek then flows approximately 11 miles to discharge into the Marsh Creek Reservoir and then into the western San Joaquin Delta at Big Break.

Surface flow that originates at the Mine takes one of three paths as depicted on Figure 2-6 as follows:

1. Surface flow on the northern portion of the Mine area drains north into the ephemeral feeder stream called My Creek. My Creek then drains into Dunn Creek in the northeastern corner of the Mine area;
2. Flow that originates in the upper reaches of the Mine including the old Mine workings areas is captured via stormwater control features installed by the current property owner and ultimately discharged into the Upper Pond which in turn flows into the Middle Pond. The Middle Pond drains directly into Dunn Creek along the northern boundary of the Lower Pond SI. Dunn Creek then flows along the eastern boundary of the Lower Pond SI south towards Marsh Creek bypassing the Lower Pond SI; and
3. Surface flow and spring flow that originates from the exposed eastern Mine tailings and the Travertine/Adit Spring area drains directly east and flows into the Lower Pond SI. The Lower Pond SI overflows into a channel and flows into Dunn Creek below the southern impoundment berm.

The State Park Spring emerges as a perennial spring on the adjacent Mount Diablo State Park. The spring flows directly east to join Dunn Creek just below the southern bank of the Lower Pond SI impoundment. Some stormwater flow from the southernmost extent of Mine tailings may join State Park Spring water as it migrates downslope towards Dunn Creek.

Above the Lower Pond SI, Dunn Creek is an ephemeral stream. Drainage from the Lower Pond SI and the State Park Spring create a condition of perennial flow in Dunn Creek below the Lower Pond SI as it moves downstream to discharge into Marsh Creek.

Although the primary objective of the Remediation Plan is to control erosion and minimize sediment and dissolved phase mineral discharge into Dunn and Marsh Creeks, the remediation program is not a Dunn Creek stream restoration project.

2.1.8 Climate

The climate in eastern Contra Costa County is "*mediterranean*," characterized by mild to moderately cold, wet winters and hot, dry summers. Mt. Diablo represents the border between the cool summer climate type found along the Pacific coast and the hot summer climate type found in the Central Valley.

The National Weather Service maintains a weather station at Mount Diablo Junction, 2,170 feet (661 m) above sea level. The warmest month at the station is July, with an average high of 85.2 degrees Fahrenheit (°F) and an average low of 59.6°F. The coolest month is January, with an average high of 55.6°F and an average low of 39.3°F. The highest temperature recorded was 111°F on July 15, 1972. The lowest temperature recorded was 14°F on February 6, 1989, and on December 14, 1990. (The San Francisco Chronicle reported that the temperature dropped to 10°F at the summit on January 21, 1962.) Temperatures reach 90°F or higher on an average of 36.0 days each year and 100°F or higher on 3.3 days each year. Lows of 32°F or lower occur on an average of 15.4 days annually.

Annual precipitation averages 23.96 inches. The most precipitation recorded in a month was 13.54 inches in February 1998. The greatest 24-hour precipitation was 5.02 inches on January 21, 1972. The average annual days with measurable precipitation is 65.3 days.

Snowfall at Mount Diablo Junction averages 1.2 inches each year. Prior to 2009, the most snowfall observed in a month was 17.0 inches in April 1975; that same month saw 6.0 inches in one day (April 4, 1975). Measurable snowfall does not occur every year, so the annual average days with measurable snowfall is only 0.5 days. Snow is more common in the upper reaches of the mountain. On December 7, 2009, Mount Diablo received a rare snow event of 18.0 inches, receiving more in one day than what it normally receives in one year. (Mount Diablo Junction Station Data supplied by the Western Regional Climate Center).

2.1.9 Vegetation

Vegetation in the environs of the Mine and Mount Diablo is mixed oak woodland and savannah, and open grassland with extensive areas of chaparral and a number of endemic plant species, such as the Mount Diablo manzanita (*Arctostaphylos auriculata*), Mount Diablo fairy-lantern (*Calochortus pulchellus*), chaparral bellflower (*Campanula exigua*), Mount Diablo bird's beak (*Cordylanthus nidularius*), and Mount Diablo sunflower (*Helianthella castanea*). The area can include a mixed ground cover of western poison-oak that is toxic via skin contact to most people.

2.2 Site History and Development

Historically, mercury has been mined at several localities around Mount Diablo. By far the largest amount was at the Mount Diablo Mine, which operated intermittently between 1863 to the late 1950s.

2.2.1 Mining History

Between 1863 and 1936, various operators removed approximately 1,739 flasks of mercury from the Site. Bradley produced more than 10,000 flasks of mercury during its 15 years of mining operations at the Site between 1936 to 1951. At the end of Bradley's operations, the underground Mine workings consisted of four levels in a steeply dipping shear zone. The Bradley workings were accessed by a main shaft and had an adit that exited to the surface on the 165 level (the 165 level Adit; Pampeyan, 1963).

Bradley generated 78,188 cubic yards of milled tailings and 24,815 cubic yards of waste rock from the Mine tunnels (Ross, 1940). The material generated by Bradley represents 97.3 percent of all waste material generated, and nearly 100 percent of all mill tailings, as documented in the attached Table 2-1. In addition to the materials generated from the Mine, Bradley also operated a rock quarry to the west of the Mine. Waste rock generated from Bradley's quarry operation is reported to have been placed in the area called the "*Waste Dump*" on maps produced by the California Division of Mines and Geology (Pampeyan, 1963). Historical records indicate that Bradley's mining waste and tailings piles at the Site match the waste pile configuration reflected in the 1953 California Division of Mines and Geology's Site mapping (Pampeyan, 1963). Figure 2-4 provides a map depicting the locations of the tailings and waste rock piles that Bradley generated on the Site. The area that received Bradley's quarry waste rock is north (northern waste rock) and is circled in a green outline (figure 2-4).

Following the period of extensive Bradley operations, Mt. Diablo Quicksilver Co., Ltd. (Mt. Diablo Quicksilver) leased the Mine to Ronnie B. Smith and partners (Smith, 1951). Using surface (open pit) mining methods, Smith, et al. produced an estimated 125 flasks of mercury in a rotary furnace. In 1953, the Defense Minerals Exploration Agency (DMEA) granted Smith, et al. a loan to explore the deeper parts of the shear zone (Schuette, 1954). With DMEA's grant money, and under the DMEA's supervision, Smith, et al. constructed a 300-foot-deep shaft (historically referred to as the DMEA Shaft) during the period from August 15, 1953 to January 16, 1954 (Schuette, 1954). The DMEA Shaft and workings flooded on February 18, 1954 and, subsequently, Smith, et al. abandoned the project (Schuette, 1954).

Cordero leased the Site from Mt. Diablo Quicksilver on November 1, 1954, and began re-conditioning the DMEA Shaft in January 1955 before discontinuing operations in December 1955. Cordero conducted its underground mining efforts from the pre-existing DMEA Shaft (Pampeyan and Sheahan, 1957). The total volume of waste rock generated by Cordero was approximately 1,228 cubic yards (Table 2-1). Cordero generated an estimated 100 to 200 tons of ore with a grade of 3 to 10 pounds of mercury per ton (Pampeyan and Sheahan, 1957), which equates to approximately 50 to 100 cubic yards of ore material.

In 1956 the Nevada Scheelite Corp. leased the Mine and installed a deep-well pump (550 gpm) to remove water which had risen to a point 112 feet below the collar of the shaft. Since the downstream ranchers objected to the discharge of acid Mine water into the creek this work was suspended. Attention was then directed to the open pit where some exploration was done using wagon drills. A small tonnage of retort-grade ore was developed. Since this was not sufficient to satisfy the requirements of the company, the lease was relinquished (California Division of Mines, 1958).

A June 1958 State Water Pollution Control Board (WPCB) inspection report states the Mine was leased to John E. Johnson and that he was operating it, but he apparently died later that year and the Site ceased operation. Welty and Randall Mining Co. subsequently operated an unidentified portion of the Site from approximately 1965 to 1969. They apparently re-worked Mine tailings at the Site under a lease from Victoria Resources Company (Victoria Resources), which purchased the Mine from Mt. Diablo Quicksilver in May 1962. On or about December 9, 1969, Guadalupe Mining Co. (Guadalupe) purchased the Mine from Victoria Resources. It is unclear whether Guadalupe actually operated the Mine. In June 1974, the current owners, Jack and Carolyn Wessman and the Wessman Family Trust purchased the Site from Guadalupe. In 1977, the Wessmans sold the portion of the Site containing the settlement pond to Ellen and Frank Meyer, but subsequently re-purchased it in 1989.

2.3 Previous Investigations

The potential for contamination of Marsh Creek from the Site has long been of concern, resulting in considerable sampling of Marsh Creek, Dunn Creek, Horse Creek, pond effluent, and other surface waters, over the past 50 plus years (WPCB Document Log) by the following:

- CVRWQCB and its predecessor, the WPCB, as part of inspection visits to the Mine since the late 1930's;
- J.L. Iovenitti, Weiss Associates, and J. Wessman, as part of *Mount Diablo Mine Surface Impoundment Technical Report* dated June 30, 1989;
- Professor Darell G. Slotton, U.C. Davis, as part of the *Marsh Creek Watershed Mercury Assessment Project* conducted in March 1996, July 1997, and June 1998; and
- Sunoco Inc, via The Source Group, Inc – Site Characterization Report, August 2, 2010 and Additional Site Characterization Report, December 7, 2011.

The following sections briefly summarize these previous investigations.

2.3.1 State Water Pollution Control Board / California Regional Water Quality Control Board Investigations

Sampling events conducted by the CVRWQCB and its predecessor, the WPCB, have consisted of collecting grab samples under varying conditions (ranging from high run-off periods, to periods of little or no run-off). Samples have been collected since the early 1950's at the following locations:

- Dunn Creek (at various locations);
- Horse Creek (upstream of pond outlet);
- Perkins Creek (above the confluence with Marsh Creek);
- Curry Creek (above the confluence with Marsh Creek);
- Marsh Creek (at various locations);

- Drainage from Mine/tailings on Wessman property;
- Drainage from ponded area, north of tailings;
- Springs on State Park Land;
- Alkali Spring below and east of pond/dam;
- Mine pond;
- Zuur well;
- Prison Farm well; and
- Marsh Creek Springs Resort well.

These samples were analyzed for general water quality parameters and metals. The Site Characterization Report (SGI 2010a) includes a summary of these water sample results. In general, these results documented the continuous discharge of high concentrations of minerals and metals derived from surface water interactions with tailings materials and from spring discharges at the Mine.

2.3.2 J.L. Iovenitti, Weiss Associates, and J. Wessman, *Mount Diablo Mine Surface Impoundment Technical Report*

In 1989, a technical report evaluating the geohydrochemical setting of the Lower Pond SI, the source of contaminants in the Lower Pond SI, waste control alternatives, and preliminary cost estimates for these alternatives was prepared as part of the application to qualify for an exemption authorized by the Amendment to the Toxic Pits Cleanup Act of 1984 (Iovenitti, 1989).

The report characterized the contaminants in the Lower Pond SI based on historical data obtained from 11 water samples collected from the surface impoundment from 1953 through 1988. The surface water samples were analyzed for general water quality parameters and metals. The results indicated that the metals concentrations detected in the water within the surface impoundment exceeded primary drinking water standards and that sediment contained mercury and nickel in exceedance of soluble threshold limits concentrations (STLCs).

2.3.3 Professor Darell G. Slotton, Marsh Creek Watershed Mercury Assessment Project

Contra Costa County sponsored a three-year study (Slotton,1996; 1997; and 1998) of the Marsh Creek Watershed to comprehensively determine the sources of mercury in the Marsh Creek Watershed, both natural and anthropogenic. These studies also documented mercury concentrations in indicator species, surface water, and sediment to evaluate mercury bioavailability within the Marsh Creek Watershed. These studies were designed to characterize baseline conditions of the Marsh Creek Watershed and to evaluate the relative effectiveness of potential future remedial actions at the Mine.

The results of the 1995 study are summarized in a March 1996 report titled "*Marsh Creek Watershed 1995 Mercury Assessment Project – Final Report*" prepared by Darell G. Slotton, Shaun M. Ayers, and John E. Reuter (Slotton, et al., 1996). The 1995 study evaluated aspects of mercury loading within the Marsh Creek Watershed. As part of this Mercury Assessment Project, sampling was conducted at the Site, including the Lower Pond SI, the spring on State Park property, the spring emanating from the tailings pile, and other locations upstream in Dunn Creek and downstream along Marsh Creek.

The results of the 1996 study are summarized in a July 1997, report titled "*Marsh Creek Watershed Mercury Assessment Project – Second Year (1996) Baseline Data Report*" prepared by Darell G. Slotton, Shaun M. Ayers, and John E. Reuter (Slotton, et al., 1997). The 1996 study, (the second year of the three-year baseline study), evaluated mercury availability in indicator species and sediment within stream sites and the Marsh Creek Reservoir by collecting 175 individual and composite samples of invertebrates, sediment, and young fish from 13 stream sites and the Marsh Creek Reservoir (Slotton, et al., 1997).

The results of the 1997 study are summarized in a June 1998 report titled "*Marsh Creek Watershed Mercury Assessment Project – Third Year (1997) Baseline Data Report with 3-Year Review of Selected Data*" prepared by Darell G. Slotton, Shaun M. Ayers, and John E. Reuter (Slotton, et al., 1998). As with the 1996 study, the 1997 study (i.e., final year of the three-year baseline study) focused on evaluating mercury availability in indicator species and sediments within stream sites and the Marsh Creek Reservoir and involved the collection of 137 individual and composite samples of invertebrates, sediment, and young fish from 12 stream sites and the Marsh Creek Reservoir (Slotton, et al., 1998).

As part of this Mercury Assessment Project, sampling was also conducted at the Mine area, including the Lower Pond SI, the spring on State Park property, the spring emanating from the waste rock, and other locations upstream in Dunn Creek and downstream along Marsh Creek. Based on the results of the 3-year study and extensive sampling of the entire Marsh Creek watershed, the Slotton report concluded that the Mount Diablo Mercury Mine, and specifically the exposed tailings and waste rock (Bradley's waste) above the existing pond combined with acidic discharge from the spring emanating from the waste rock above the pond, was the dominant source of mercury in the watershed. Sampling of Dunn Creek above the Lower Pond SI indicated minimal sourcing of mercury was occurring from the watershed immediately above the Lower Pond SI.

As specifically stated by Slotton, et al. (1996) the data indicates that "*the great majority of the mercury load emanating from the tailings is initially mobilized in the dissolved state. This dissolved mercury rapidly partitions onto particles as it moves downstream. The bulk of downstream mercury transport is thus particle-associated.*" The Slotton report also states that "*...major mitigation focus should be directed toward source reduction from the tailings piles themselves, with subsequent containment of the remaining mobile mercury fraction being a secondary consideration.*"

Slotton, et al.'s three-year study and extensive sampling of the entire Marsh Creek Watershed (Slotton, 1996) specifically concluded that the Mt. Diablo Mercury Mine region contributed the great majority of the entire watershed's mercury loading (95 percent with 88 percent directly traceable to the ongoing drainage from exposed tailings, [Bradley's waste]) at the Site (Slotton, et al., 1996).

The results of the Slotton studies were incorporated in the design of follow on studies implemented by Sunoco as described in the following Section 2.3.4.

2.3.4 2010 Site Characterization

Initial Investigation

Initial work conducted by SGI on behalf of Sunoco included research, acquisition, review and analysis of existing published information and data related to the former Mine and attendant water quality impacts, field surveys of the Mine conducted over a period of two years, property owner interviews, and two surface water sampling events at the Mine Site. This work is documented in the Site Characterization Report (SGI, 2010a).

A total of 23 surface water samples were collected at the following 16 locations during the two sampling events conducted in April and May of 2010:

- Bradley Tailing Piles (four locations, SW-01, SW-02, SW-03, and SW-15);
- Springs (three locations, including the Adit Spring [SW-01, SW-15], Mount Diablo State Park Spring [SW-04] and the Ore House Spring [SW-14]);
- Run-off water between the Bradley Tailings Piles and the Lower Pond SI (SW-05);
- Storm Water Retention Ponds (three locations, including the Upper Pond [SW-06], the Middle Pond [SW-10], and the Lower Pond [SW-09]);
- Dunn Creek (three locations, including downstream of the Lower Pond SI [SW-07], between the Middle Pond and My Creek [SW-08], and upstream of My Creek [SW-16]); and
- My Creek (three locations, including upstream, within, and downstream of the Northern Waste Dump [SW-12, SW-11, and SW-13, respectively]).

Upstream surface water sampling locations SW-12 and SW-16 were considered background locations. The 2010 surface water sampling locations are presented on Figure 2-7.

Additional Investigations

In response to the results of a Site Characterization Report (SGI, 2010a) technical review meeting with the CVRWQCB and subsequent correspondence, SGI, on behalf of Sunoco, conducted additional investigations (SGI, 2011).

This work supplemented SGI's initial investigation (SGI, 2010a), which identified data gaps and recommended work elements to complete characterization of the Site pursuant to the Rev. Order. CVRWQCB staff concurred with the proposed additional elements in its August 30, 2010 letter to Sunoco. SGI then presented a detailed scope of work in its Additional Characterization Work Plan (SGI, 2010b), which included the following activities:

- Performance of a detailed 2-foot topographic survey;
- Installation of two groundwater monitoring wells: 1) a well within the Bradley Mine workings, specifically, in the 165 level (completed at a total depth of 85 feet below ground surface

[bgs] and; 2) a well into the former DMEA/Cordero underground Mine workings, specifically, into the Cordero 360 level lateral tunnel (completed at a total depth of 275 feet bgs);

- Sampling and analysis of groundwater and evaluation of gradients within these wells; and
- Surface water sampling at 16 locations to determine and/or confirm sources of mercury to Site surface waters to assist the CVRWQCB's evaluation of remedial alternatives.

The 2011 surface water sampling locations are presented on Figure 2-8.

The data collected during this phase of investigation enabled a more complete understanding of the relationships between different water sources and overland flow patterns at the Site. Specifically, water sampling results from the two monitoring wells (ADIT-1 and DMEA-1) enabled comparison of these results to the surface water sampling events that have been carried out in 2010 and 2011. This comparison and evaluation has resulted in more holistic understanding of the sources of surface water present at the Site, which specifically falls into three general categories: water sourced from underground Mine workings (i.e., the Bradley Mine workings); water sourced from overland flow through Mine tailings and waste rock; and surface water which does not come in contact with Mine tailings.

The review of historical data (including scientific studies, corporate records and regulatory reports); the georeferencing of historical features with the current physical disposition of the Mine Site, the physical mapping of Site features such as tailings piles and surface water drainage, and the collection of surface water samples, including the comparison to historical data set, combine to paint a detailed physical picture of current Mine Site conditions (SGI, 2010a).

As represented in the Site Characterization Report, both historical documentation and surface water analytical data collected in 2010 support the conclusion that the majority (93 percent based on Slotton [1995] calculations) of the mercury mass loading into the Marsh Creek Watershed originates via run-off over and through Bradley's operation-derived waste rock and tailings piles.. The Mine wastes contain trace amounts of pyrite and other sulfur-containing minerals. These minerals, when exposed to air, oxidize to form sulfates. The sulfates, once dissolved in water, form sulfuric acid which depresses the pH. This low pH drainage is able to solubilize minerals and release metals such as mercury. The cycle of wetting and drying of soils, promotes the formation of acid and the release of minerals from the Mine waste.

The primary path from the mining waste is through overland flow into the Lower Pond SI into nearby Dunn Creek that subsequently leads into the greater Marsh Creek Watershed. The works of Slotton (Slotton, 1996) and of SGI's surface water sampling in 2010 quantified the concentrations of mercury and other chemical constituents emanating from the various Mine Site features via overland water flow. The water from My Creek, along with the Dunn Creek water above the Lower Pond SI, have no detectable mercury concentrations and have a chemical signature distinct from the water that had come in contact with the Bradley tailings piles. My Creek collects drainage water from the Northern Waste Dump. Water Quality data from My Creek indicates that material present in the Northern Waste Dump do not contribute mercury or other chemicals of concern (COCs) to surface water runoff in that area.

The Site surface water sampling locations (Figure 2-8) associated with run-off of surface water through the Bradley Tailings Piles and into the Lower Pond SI (SW-15, SW-02, SW-03, SW-05 and SW-09) fairly consistently exceeded water quality criteria for total and dissolved mercury, nickel, lead, and zinc, and less consistently exceeded the same criteria for methyl mercury, arsenic and chromium (e.g., Lower Pond SI sample location SW-09 had no methyl mercury, arsenic or chromium exceedances).

In summary, data analysis indicates that groundwater in the Mine workings is chemically no different than background spring water and that Acid Mine Drainage (AMD) discharges may be solely generated by the interaction of water from natural springs, the Mine workings, and rainfall in contact with exposed Mine wastes.

Dunn Creek Surface Water Quality

Surface sample location SW-07 (Figure 2-8) was collected in Dunn Creek, downstream of surface water from the Site, and is considered a point-of-compliance sampling point. As such, the analytical results from this sampling location and all other surface sampling locations were compared to water quality criteria developed for bodies of freshwater by the CVRWQCB and the USEPA. The comparisons indicated several key points including:

- Mercury and arsenic were not detected above water quality criteria in SW-07;
- Methyl mercury, alkalinity, total dissolved solids, chloride, iron, and nickel were detected above water quality criteria in SW-07; and
- With the exception of methyl mercury, all of these compounds were also detected at concentrations exceeding the water quality criteria in SW-04, at the background State Park Spring sample location.

As reported by Dr. Slotton of the University of California at Davis, methyl mercury is pervasively present in aquatic systems that include any oxic/anoxic interface. Sampling of surfaces waters in and around the Mt. Diablo mercury mine have confirmed the consistent and natural presence of methyl mercury in site and background waters. Methyl mercury has only been detected in down-gradient surface water sample SW-07 (detected at maximum of 6.56 nanograms per liter [ng/l]) above water quality criteria (3 ng/l) on one of five sampling events (SGI, 2011). This sampling event was conducted in late October corresponding with the driest part of the year. This one time exceedance is likely related to the subsurface discharge of waters through the toe of the Lower Pond Surface Impoundment mixing with State Park Spring waters flowing at normal reduced dry-season flows.

This point of compliance and water quality criteria evaluation shows that in general, water downgradient of the Mine exceeds water quality criteria only for compounds present in background samples above water quality criteria. Although COCs from the Mine are travelling into Dunn Creek, the volume contribution of the water from these sources is so small compared to other sources (i.e., State Park Spring, normal watershed run-off that does not come in contact with tailings), the presence of these compounds are reduced to background or near background levels at point of compliance sampling location SW-07.

2.3.5 Previous Remedial Actions

The current property owner, Jack Wessman, over the period of his ownership since 1974, has conducted work in an effort to minimize the impact of exposed Mine waste material to surface water run-off. This work has included earth moving at the Site involving the importation of a large quantity of fill material (reported by Jack Wessman to be on the order of 50,000 cubic yards), and the movement and grading of this fill material around the Site to cover Mine waste. In 1978, Order No. 78-114, Waste Discharge Requirements for the Mount Diablo Quicksilver Mine, was issued to Mr. and Mrs. Wessman, prohibiting the direct discharge of Mine waste to surface waters or surface water drainage courses. That same year, a cleanup and Abatement Order was issued ordering the Wessmans to, among other things, (1) "*...redivert the springs from the Mine overburden...back to the storage reservoir [surface impoundment] to abate further discharge", and (2) "...complete the repair of the storage reservoir...*". In compliance with this order, the surface impoundment was rebuilt in 1978/1979 by the Wessmans.

Based on SGI's discussions with Jack Wessman during Site inspections in 2008, this work has specifically included: 1) infilling and covering of the original collapsed Mine workings area, 2) filling of the DMEA Shaft and filling and capping of waste rock below the shaft toward the furnace, 3) filling and capping of a small pond located west of the DMEA Shaft, 4) grading of waste rock and tailings piles located to the east of and overlying the Mine workings as part of surface drainage control actions, 5) re-configuring, enhancing and maintaining impoundments around the lower waste ponds, and 6) installing drains and drainage pipe for the purpose of re-directing surface rainfall run-off in the upper Mine area around the exposed tailings and waste rock into Dunn Creek directly bypassing flow through the Lower Pond SI.

Current surface drainage for the higher elevations of the Site, including the Cordero operations around the DMEA Shaft area, is captured and routed around the exposed tailings and waste rock, and around the Lower Pond SI, emptying directly into Dunn Creek at a location upgradient of the Lower Pond SI (Figure 2-6).

Sunoco conducted follow on work relating to stabilization of the surface impoundment in 2008/2009. In response to a Unilateral Administrative Order for the Performance of Removal Action from the United States Environmental Protection Agency (USEPA), Sunoco conducted an emergency stabilization of the southeastern wall of the Lower Pond SI's impoundment dam to prevent continued storm flow erosion of the impoundment in 2008/2009. This work was documented in the SGI report titled "*Final Summary Report for Removal Action to Stabilize the Impoundment Berm*" (SGI, 2009).

2.4 Mining-Related Material Waste Characterization

2.4.1 Material Classification

Three main categories of Mine-related waste are targeted for remediation within this Remediation Plan. These wastes have been categorized based on the characterization work conducted by SGI in 2010/2011, which included a review of historic Mine operational documents in combination with field inspections and near surface material examination by tailings experts. In the order of significance, these three waste categories are defined as follows:

1. Main Tailings Pile and Waste Rock Dump. The Main Tailings Pile is located in the eastern perimeter of the Mine workings area as shown on Figure 2-2. The Main Tailings Pile is composed of general Mine tailings including calc-silicate ore zone waste rock that is well graded from small grain processed material to large boulders. Additional waste rock is present in this tailings pile composed of shale and sandstone materials derived from the country rock that surrounds the ore zone. These waste rock materials are inter-mixed with processed tailings and calcines.
2. Pond Sediments. The Lower Pond SI sediments were characterized in 1989 (Iovenetti, 1989). The Lower Pond SI receives run-off from the Main Tailings Pile combined with the steady flow from the Travertine/Adit Spring that emerges from the Main Tailings Pile and travels through and over the Main Tailings Pile on its path to the impoundment. Volume calculations on the Lower Pond SI sediments provided in Table 2-2 include the volume of the impoundment berm.
3. Calcines. North of the Main Tailings Pile and immediately east and down-slope of the old furnace plant is a free-standing calcines pile not apparently mixed with other Mine waste. The calcines consist of the well sorted and highly processed roasted waste material.

2.4.2 Estimation of Mining-Related Material Volumes and Areal Extent of Material

The locations and extent of Mine-related wastes that will be addressed as part of this Remediation Plan are shown in Figure 2-9. An inventory of the Mine-related materials, including volume estimates, is included in Table 2-2.

Volumes of waste rock and tailings piles were estimated using the following procedure:

- The ground topography was surveyed to a 2-foot contour level by a licensed surveyor;
- The pre-accumulation ground surface topography provided on historic DMEA maps was utilized where possible, combined with interpolation of surrounding topography based on the available geolocated base map; and
- Based on a comparative analysis on a point-by-point basis of pre-existing to current topography, a tailing's pile thickness map was developed. Tailings pile volumes were then calculated based on these known and/or estimated thickness determinations.

The preliminary total volume of Mine-related materials to be managed is approximately 124,000 cubic yards. The bulk of this material is made up of waste rock and tailings from the former Bradley Tailings Pile located on the eastern scarp of the Mine Site (102,245 cubic yards). Approximately 7,500 cubic yards of the total is composed of calcines. Approximately 14,089 cubic yards of material is made up of pond sediments from the Lower Pond SI and the impoundment berm. The Lower Pond SI estimate includes the removal of Mine wastes located at the southern foot of the impoundment as shown on Figure 2-9.

2.5 Conceptual Site Model Overview

The conceptual site model (CSM) summarizes available information about potential sources, release mechanisms, contaminant fate and transport, exposure pathways, and potential receptors at the Site. This CSM presented in this section is focused on Mine-related materials within the remedial action area of the Site (Figure 2-9), and is based on SGI's current understanding of Site conditions.

The CSM incorporates the following components:

- Mine-related sources;
- Future land and resource uses; and
- Exposure pathways and receptors of concern.

2.5.1 Mining-Related Sources

Visible Mine-related features that remain on the Site include various Mine buildings, bare uncovered tailings piles, a Middle Pond, and a Lower Pond SI. The Main Tailings Pile is located on the eastern slope of the Mine property bounded on the east by the Lower Pond SI. Spring water discharges from the face of the Main Tailings Pile creating a steady source of surface flow that moves across the lower portion of the Main Tailings Pile and into the Lower Pond SI. The Lower Pond SI is the location of the historic Mine constructed surface impoundment that has been upgraded by the current landowner to provide effective containment of historic Mine derived waste and sediments. The Lower Pond SI contains sediments largely sourced via stormwater flow and Travertine Spring/Adit discharge drainage through and off the Main Tailings Pile. Residual Mine features that are contributing mercury loading to the Marsh Creek watershed are the subject of the actions proposed in this Remediation Plan as depicted on Figure 2-9.

The Middle Pond is not a historic Mine feature but was created by the property owner, Jack Wessman, as part of stormwater management controls for the Mine conducted under the direction of the CVRWQCB. The Middle Pond contains stormwater and flanks the Lower Pond SI to the north and, based on characterization data, is not currently considered a source of significant mercury loading to Marsh Creek.

2.5.2 Potential Future Land and Resources Uses.

The Mine has reportedly been closed since around 1969. The Wessmans have owned the property since 1972 and it has been primarily used for residential purposes, supporting multiple families that include home rentals. No residences are located in the remedial action area (former Mine work area). Occasionally in the past, the property has been leased for recreational activities such as paint ball. The property also supports a small herd of cattle owned and managed by Jack Wessman. These cattle are not raised for commercial sale but are used for vegetation control and considered family pets. Future land use is expected to remain the same.

2.5.3 Potential Exposure Pathways and Receptors of Concern

This section provides a scientifically defensible basis for the selection of potentially exposed hypothetical receptors and the most likely ways they might be exposed to chemicals at the Site. To develop a conceptual understanding of the Site, information regarding potential chemical source, chemical release and transport mechanisms, locations of potentially exposed receptors, and potential exposure routes were assessed. This information is outlined schematically in a CSM shown on Figure 2-10. The CSM associates source of chemicals with potentially exposed receptors and associated complete exposure pathways. In this way, the CSM assists in quantifying potential impacts to human and ecological health.

As defined by USEPA (1989), all of the following four components are necessary for a chemical exposure pathway to be considered complete and for chemical exposure to occur:

- A chemical source and a mechanism of chemical release to the environment;
- An environmental transport medium (e.g., soil) for the released chemical;
- A point of contact between the contaminated medium and the receptor (i.e., the exposure point); and
- An exposure route (e.g., dermal contact with chemically-impacted soils) at the exposure point.

The following sections describe these components and provide a basis for the CSM.

2.5.3.1 Chemical Release Mechanisms and Identification of Transport Media

In this section, the first two components necessary for a complete exposure pathway are addressed. Chemical properties of the detected chemicals and the physical characteristics of the Site were reviewed to identify factors that might allow the release and transport of a chemical in the environment. Other than the on-site residential properties, which are outside the remedial action area, the Site remains undeveloped. The Site is on the lower flanks of the northeastern environs of Mount Diablo and is generally unpaved. The Site landscape is not expected to change in the future except as described in remedial actions proposed in this Remediation Plan.

The chemicals of potential concern (COPCs) at the Site are mercury and arsenic. Release of COPCs can potentially occur through wind and/or mechanical erosion (i.e., during construction), infiltration of chemicals into the groundwater, or lateral migration of chemicals in groundwater.

These types of releases may result in dust (with sorbed chemicals) emissions in air, or the movement of chemicals downward into groundwater with infiltrating rain water or stormwater run-off into surface water. The COPCs are not particularly mobile in soil; therefore, soil to groundwater is not considered a likely transfer mechanism. However, groundwater that flows from the underground Mine workings does contain COPCs. The groundwater is interpreted to daylight via springs or seeps on the face of the Main Tailings Pile.

2.5.3.2 Potential Exposure Points

The third component necessary for an exposure pathway to be complete is a point of contact between the contaminated medium and the receptor (i.e., the exposure point). For soil, the exposure point for potential receptors is defined as the remedial action area (former Mine work area).

As mentioned previously, other than the two groundwater monitoring wells installed into the Mine workings by SGI, only one additional groundwater well is located at the Site. This well is referred to as the "*Wessman Well*". The groundwater from the Wessman Well is used for domestic purposes by the residents located at the top of the hill well above the historic Mine workings. This well is located outside the remedial action area (former Mine work area). As such, the water from this well is not expected to be impacted by the Mine workings or actions proposed in this Remediation Plan. According to Jack Wessman, groundwater from the Wessman Well has been tested in the past and has been deemed potable. Residents located on the lower portions of the Site are connected to a public water supply system. Groundwater from the remedial action area (Figure 2-9) is not being used for domestic purposes and groundwater use is not expected to change in the future.

Although it is possible that a hypothetical outdoor construction worker receptor could contact shallow groundwater during excavation, this contact is expected to be very infrequent and involve only minor contact, if any, with contaminated groundwater. In general, any hypothetical construction worker receptor will be performing activities consistent with a site health and safety plan (HASP). This HASP and BMPs would require control measures to limit and preclude any direct contact with groundwater for workers at the Site.

Additionally, surface run-off and near-surface groundwater is assumed to discharge via ephermeral streams, springs, or seeps into surface waters adjacent to the Site (i.e., Dunn Creek). Dunn Creek is seasonal and intermittent adjacent to the Site and not used for recreational purposes in the stretch adjacent to the Mine. Intermittent presence of water is considered unlikely to support fish suitable for human consumption. Dunn Creek flows south from the Mine Site to join Marsh Creek 0.5 miles downstream, then flows approximately 11 miles to discharge into the Marsh Creek Reservoir, and then into the western San Joaquin Delta at Big Break. Metals (e.g., mercury) may move from the Site to adjacent waterways in dissolved and particulate form. As mentioned previously in Section 2.3.3, 95 percent of the total input of mercury to the upper watershed has been estimated to come from Dunn Creek, with 88 percent traceable to exposed tailings piles of the Mount Diablo Mercury Mine (Slotton, 1996, 1997, 1998). However, 95 percent of the watershed's suspended sediment load is from non-Mine, low mercury source regions. Although Site-related contaminants may flow to potential drinking water sources further downstream from the Site, concentrations are expected to be significantly diluted.

2.5.3.3 Potential Receptors

In addition to exposure points, potential receptors at the Site are necessary for an exposure pathway to be complete. Hypothetical receptors identified for evaluation in this assessment were identified on the basis of proximity to the remedial action area of the Site, proposed activities that could possibly result in direct or indirect contact with chemicals. On the basis of current and potential future uses of the Site, the following hypothetical receptors were evaluated in this risk assessment:

On-Site

- Hypothetical Future Construction Worker Receptor; and
- Hypothetical Current/Future Recreational Visitor Receptor.

Off-Site

- Hypothetical Current/Future Recreational Angler Receptor; andl
- Hypothetical Current/Future Aquatic Biota.

2.5.3.4 Exposure Pathways Considered Potentially Complete and Significant

The fourth and final component, a complete exposure pathway (i.e., route of exposure) is discussed in combination with the third component (i.e., presence of receptors) to define those exposure pathways considered to be complete and significant. As indicated in the CSM (Figure 2-10), contact with COPCs at the Site could occur via exposure to soil, groundwater, and surface water. The following sections separately summarize those pathways considered complete and significant for each receptor.

2.5.3.4.1. Hypothetical On-Site Construction Worker Receptor

The hypothetical construction worker receptor is included in this CSM due to planned future construction at the Site. Future construction may occur during installation, monitoring, and maintenance of remedial actions implemented at the Site as proposed and detailed in this Remediation Plan. Therefore, future hypothetical construction worker receptors are expected to perform soil invasive activities. This receptor is expected to be a short-term outdoor worker (i.e., 2 weeks to 7 years [USEPA, 1989]) for a single construction or development project at the Site. This receptor spends the workday outdoors performing construction-related tasks. The exposure pathways assumed to be complete and significant for the hypothetical outdoor construction worker receptor include:

- Incidental ingestion of soil;
- Dermal contact with soil; and

- Inhalation of dust in outdoor air generated from the subsurface.

2.5.3.4.2. Hypothetical On-Site Recreational Visitor Receptor

The hypothetical recreational visitor receptor is included in this CSM in the event any recreational activities occur at the Site. The Site is accessible through privately owned lands and is blocked from public access by fencing and locked gates. Due to access restrictions in place at the Site, the number of visitors is anticipated to be minimal and infrequent and of short duration. This receptor may also include an unauthorized visitor (or trespasser). Conservatively, this receptor is expected to be a long-term recreational receptor that includes exposures as both a child and adult recreational visitor. Exposure to surface water is not expected due to the intermittent presence of surface water and the infrequent and limited time spent at the Site by the recreational visitor. The exposure pathways assumed to be complete and significant for the hypothetical recreational visitor receptor include:

- Incidental ingestion of soil;
- Dermal contact with soil; and
- Inhalation of dust in outdoor air generated from the subsurface.

Areas of the Site outside of the remedial action area are currently used for residential purposes, but these areas are not expected to be impacted by Site-related contaminants from the remedial action area. However, as residents on the property, they may walk or hike on the property. This on-site recreational visitor receptor will address any potential exposures to a potential resident receptor conducting recreational activities in the remedial action areas.

2.5.3.4.3. Hypothetical Off-Site Recreational Angler Receptor

The hypothetical recreational angler receptor is included in this CSM in the event recreational angling is conducted in downgradient waterways that support fish. This hypothetical recreational angler receptor includes both a child and adult. Conservatively, this receptor is expected to be a long-term recreational receptor. The exposure pathways assumed to be complete and significant for the hypothetical recreational angler receptor include:

- Ingestion of fish.

2.5.3.4.4. Hypothetical Off-Site Aquatic Biota

Due to the ecological concerns associated with mercury and formation of methyl mercury in aquatic systems and the presence of surface water that receives run-off from the Site, aquatic biota are included in this CSM. The exposure pathways assumed to be complete and significant for the hypothetical aquatic biota include:

- Uptake of surface water by aquatic biota (i.e., aquatic plants, water-column invertebrates, fishes); and
- Uptake of sediments by sediment dwelling invertebrates.

2.5.4 Summary of Potential Human Health Risks

For the hypothetical on-site human receptors, potential exposure to COPCs in Mine-related materials is possible through direct contact (i.e., incidental ingestion or dermal contact) with contaminated material and inhalation of airborne dust particulates. The Site-related contaminants may pose a risk to human health as a result of work performed at the Site (i.e., construction worker exposure scenario) or recreational activities conducted at or near the Site (i.e., hiking, biking, and other outdoor activities). In general, any hypothetical construction worker receptor will be performing activities consistent with a site HASP and BMPs, which would require proper personal protective equipment to limit direct contact with soil for workers at the Site. In the current exposure scenario, recreational visitor receptor exposures are expected to be infrequent and of short duration; therefore, reducing actual exposure to the Site. In the future exposure scenario, the Mine waste will be capped. As a result, future recreational visitor receptors will not be exposed to Mine waste at the Site.

For the hypothetical off-site recreational angler receptor, water quality criteria for human health (i.e., consumption of water and organisms and consumption of organism only) were lower than the analytical detection limit for surface water samples. Surface water sample location SW-07 (Figure 2-8) in Dunn Creek is the natural point of compliance sampling location for monitoring run-off impacts from the Site. In sample location SW-07, arsenic was not detected above the analytical detection limit and mercury (total and dissolved) were detected below or slightly above the analytical detection limit. Because analytical detection limits are above the water quality criteria, arsenic impacts cannot be evaluated. Site-related contaminant concentrations are expected to be diluted significantly by the time they reach the Marsh Creek Reservoir. Mitigation of sourcing of Site-related contaminants into Dunn Creek and its tributaries and subsequently the Marsh Creek watershed with remedial actions at the Site coupled with ongoing dilution will reduce any potential risks to hypothetical off-site recreational angler receptors from Site-related contaminants.

2.5.5 Summary of Potential Ecological Risks

As mentioned previously, water from the Site eventually flows into Dunn Creek and its tributaries. Although chemistry results fluctuate based on seasonal nature of precipitation events which result in more or less dilution of the waters flowing from the Site, no mercury (total or dissolved) or arsenic have been detected at concentrations that have exceeded the water quality criteria (SGI; 2011). Water quality criteria that have been exceeded at sample location SW-07 include methyl mercury, alkalinity, total dissolved solids, chloride, iron, and nickel. With the exception of methyl mercury, all of these compounds exceed the water quality criteria in the State Park Spring sample location (SW-04), which has no known connection to the Mine and likely reflects natural chemistry of waters that would flow from background areas around the Site. Therefore, these exceedances would occur independent of the any impacts caused by former Mine operations in the remedial action area of the Site. In Dunn Creek (SW-07), methyl mercury concentrations ranged from 0.68 to 6.56 ng/l. However, background concentrations for methyl mercury ranged from 0.077 to 0.980 ng/l. Due to the endemic presence of trace levels of mercury in the environment at some trace level, in aquatic systems with any oxic-anoxic interface (i.e., subsurface in sediments), some small fraction of mercury will inevitably be methylated.

Potential aquatic receptors in surface waters downstream of the Site may be impacted by exposure to methyl mercury, which also has the potential to bioaccumulate in biota. However, remedial actions for the Site are designed to mitigate sourcing of Site-related contaminants into Dunn Creek and its tributaries and subsequently the Marsh Creek watershed.

3.0 REMEDY APPROACH AND SCOPE OF WORK

This section describes the planned remediation activities of Mine-related material at the Site, including permitting, Site preparation and control, Mine-related material removal and in-place management, waste management, removal confirmation, and Site restoration.

3.1 Remedial Action Overview and Approach

Mining waste targeted for remedial action was identified via characterization activities that have essentially been ongoing over the last 50 years (Section 2.3). Recent characterization activities were conducted by SGI on behalf of Sunoco to expand and refine historic characterization activities as detailed in SGI's Additional Characterization Report of December 7, 2011 (Summarized in Section 2.3.4). The focus of characterization activities has been to identify Mining waste based on its demonstrated contribution of sediment and COCs to Dunn Creek and the Marsh Creek watershed. Characterization activities have all indicated that the continuing source of mercury impact to lower Dunn Creek and Marsh Creek and its environs emanates from the Lower Pond that is filled via spring discharge and surface run-off that flows over the Main Tailings and waste rock pile (Bradleys' eastern tailings piles) at the Mine. As a result, the focus of this Remediation Plan is to effectively remediate this condition and reduce discharges into Dunn Creek from the Mine Site to be consistent with natural background specific to the Mine Site. Since the Mine Site and the adjacent State Park contain highly mineralized natural springs that pre-date mining activities, restoration of natural background surface water discharges is focused on activities that reduce and eliminate contribution of Mine derived additional COCs and mineral content to the natural highly mineralized background water quality.

Characterization has identified three main categories of solid Mine waste material that are the focus of this Remediation Plan. The primary focus is concerned with the Main Tailings Pile that has been demonstrated to be providing the bulk of COC loading to Dunn creek via storm flow, seepage and movement of recharge through the pile, and the discharge and movement through and on the pile of the Travertine/Adit Spring. The secondary focus is the presence of sediments in the Mine surface impoundment located below the Main Tailings Pile. A third and minor item is the calcines located north of the Main Tailings Pile. The locations and extent of the materials targeted for remedial action are depicted on Figure 3-1. Volumes of these materials are summarized in Table 2-2.

The Main Tailings Pile is made up of both capped and uncapped Mine-related wastes as indicated on Figure 3-1. Surface water sampling has indicated that COC sourcing is occurring on the lower, uncapped portion of the Main Tailings Pile. The remedial approach for the Main Tailings Pile is to remove the portion of these tailings that are uncapped and consolidate them within the area of the former Mine workings as shown on Figure 3-1. The former Mine workings area is located directly west of the Main Tailings Pile and consists of a flat base made up of compacted fill placed over the collapsed Mine workings by the current property owner. The Mine workings area is bounded on the north, south and west sides by the steep slopes of the mountainside as a result of historic Mine-related excavations in the Mine workings area. The Mine workings area thus forms an ideal location for the consolidation and capping of Mine wastes away from the Dunn Creek environs. Figure 3-2 presents a cross section demonstrating the nature of the disposition of Mine wastes and the selected area for consolidation and capping.

The sediments and berm materials of the Lower Pond SI will also be excavated and consolidated with materials from the Main Tailings Pile in the Mine workings area. Additionally, a smaller volume of processed ore (calcines), located north of the Main Tailings Pile will be excavated and consolidated with the other material (Figure 3-1). These consolidated materials will then be capped and appropriate surface water drainage controls implemented.

Excavation and removal of these Mine waste materials will expose the portal of the 165 level Adit and any associated Mine water discharge as well as the pre-mining emanation point of the former Travertine spring. The relationship of these discharge locations to Mine waste and remedial actions is shown on the cross section of Figure 3-2 and on Figure 3-3. Discharge waters encountered from these sources will be sampled and analyzed as detailed in section 4.1. The short-term solutions implemented as part of this Remediation Plan will include the capture and routing of these groundwater discharges away from and around all contact with Mine waste materials prior to discharge into Dunn Creek below the Lower Pond SI. Based on characterization data, it is anticipated that elimination of contact of these waters with Bradley Mine wastes will likely reduce COCs to natural background conditions. Regardless, these groundwater discharges will be evaluated to determine if additional remedial action concerning them is warranted.

The general approach described above for Mine-related material remediation is consistent with previous federal and state recommendations for similar settings in California. In the case of the Sulfur Creek Mercury Mining District, the United States Geological Survey (USGS, 2004) and Churchill and Clinkenbeard (2003) reports concluded that effective Mine Site remediation should be based on general Site erosion control and Mine-related material isolation measures. Similarly, a CalFED Bay-Delta Program (CalFED) Report regarding the Sulfur Creek Mercury Mining District also recommended that Mine-related wastes with elevated mercury levels be excavated and removed off-site and/or consolidated and stabilized on-site, with the implementation of institutional and surface water run-on/run-off controls to reduce the potential for erosion into nearby surface water (CalFed, 2003).

3.2 Permitting

All necessary approvals must be obtained prior to initiating the remediation activities described in this Remediation Plan to ensure the project is completed in compliance with applicable regulatory requirements. Mine and mill wastes are specifically excluded from regulation as hazardous wastes under the Bevill Amendment and as such, RCRA Subtitle C regulations do not apply. The general approach to the permitting process will be to:

- Identify potentially applicable approvals required from regulatory agencies and private parties;
- Meet with key regulatory agencies for pre-application meetings to confirm the potential requirements, and establish early communication with agencies and adjust data needs as required; and
- Facilitate the approval process from pre-application to submittal and approval.

Tracking of the approval status and compliance with the potential requirements will be conducted including:

- Use of a permit-tracking matrix to manage submittal of materials and status of approvals. A master permit list with more detailed information on permit requirements and planned dates will be prepared and will be updated throughout the project for use as a tracking and management tool as part of pre-implementation.
- Development of specific oversight plans and documentation as required for permit compliance.
- Implementation of field monitoring requirements, as needed. Work monitoring and inspection activities (e.g., monitoring of BMPs) required by applicable permits during field work/construction will be implemented into the bid specifications.

3.3 Site Preparation and Control

This section describes the Site preparation and control activities to be completed prior to and during remediation and restoration work at the Site, including Site access agreements, mobilization and demobilization, material and equipment staging, road construction and improvements, and transportation.

3.3.1 Site Access Agreements

Updated Site access agreements will be required with the current property owners at the Site by all parties involved in implementation of the remedy. In addition, a Site access agreement will be required with the Mount Diablo State Park to allow removal of waste material that overlaps the property border to the south (Figure 3-1 illustrates the State Park boundary overlap).

3.3.2 Mobilization and Demobilization

Mobilization and demobilization will include all work necessary to manage operations for the duration of the project. Mobilization will be an ongoing task as new resources are needed for specific operations. The project-specific HASP will be completed as part of the mobilization phase. A draft HASP will be finalized prior to beginning field activities, with input from the selected remediation contractor during the pre-mobilization phase of work. During mobilization, equipment will be cleaned to limit noxious weed transport to the Site. A stormwater pollution prevention plan (SWPPP) will be prepared prior to the initiation of any soil disturbing activities at the Site.

Demobilization will include the removal of all equipment and personnel mobilized to the Site and waste generated during the duration of the project. Final demobilization will include cleanup and restoration of all staging areas to pre-existing conditions. At the conclusion of the construction season, work areas will be secured and appropriate stormwater BMPs will be implemented to reduce the potential for Site activities to impact stormwater run-off.

3.3.3 Erosion Control

Remediation of the Mine-related materials will require establishing equipment access and the excavation, loading, and haulage of the materials. The disturbance associated with these activities will need to be mitigated to prevent erosion. A notice of intent (NOI) and storm water pollution prevention plan (SWPPP) will be prepared and certified through the CVRWQCB. This mitigation will involve the re-grading and reclamation of the natural ground surface and the temporary placement of erosion control BMPs.

BMPs will be selected based on the planned reclamation activities and include categories related to erosion control, sediment control, tracking control, wind erosion, non-stormwater controls, and waste management and materials control. These BMPs can include, but are not limited to:

- Grading;
- Silt Fences;
- Straw Bales;
- Biodegradable Fiber Rolls;
- Loose Straw, Mulch;
- Grass Filters;
- Sand/Gravel Bags;
- Dust Control Moderation;
- Good Housekeeping Practices;
- Site Entrances and Exit Maintenance; and
- Management of Construction-Related Wastes.

The combination of the above-listed BMPs will protect the stormwater quality during reclamation activities. Procedures to ensure proper implementation of erosion control BMPs during remediation will be identified and described in the SWPPP. The SWPPP will be established prior to starting any soil disturbing activities associated with construction work at the Site, and will be included as necessary in permitting documentation. Specific construction activities likely to require erosion control measures are addressed in the task descriptions in the following sections. Erosion control materials will be on standby for use if rainfall events occur during construction activities.

3.3.4 Material and Equipment Staging

All materials and equipment will be staged on the Mine Site. Each work area will have a temporary staging area for equipment and personnel. These areas will be determined and approved by the current property owners and the Site engineer prior to mobilization.

3.3.5 Road Improvements and Construction

Mine access road construction and improvement will be required throughout the project. Proposed locations of access routes and roads are preliminary and will be revised as necessary pending final approvals by the property owners and the Site Engineer. Access improvements will be located to minimize disturbance.

In the event that any roads cross a drainage channel, existing culvert, or small tributary, a replacement culvert will be installed or temporary steel plating will be placed across to keep drainage areas open.

3.3.6 Transportation Plan

A Site transportation plan will be prepared during pre-mobilization activities and will cover on-site transport of Mine-related material and other material generated during Site removal and restoration activities. The transportation plan establishes procedures to minimize the environmental and health and safety risks associated with material transportation conducted for the project.

3.3.7 Dust Control

Reclamation activities anticipated to generate dust during the project include construction vehicle traffic and ground disturbance activities associated with material removal, consolidation and re-contouring. Routine dust control measures will consist of water spray to moisten disturbed areas, on-site haul roads and other areas, as needed (e.g., unpaved construction roads are commonly watered three or more times per day during the dry season). If dust emissions are visible, dust control practices will be modified or other corrective measures will be implemented immediately.

3.4 Mining-Related Material Remediation

This section describes in greater detail the remediation (e.g., removal and management-in-place) of Mine-related materials including waste rock and tailings, calcines, spring water discharge and Lower Pond SI sediments.

3.4.1 Main Tailings Pile and Calcines

The Main Tailings Pile is generally laid at a slope of 3:1 (18 degrees) from the Lower Pond SI up to the beginning of the capped area near the top of the slope (Figure 3-1). The waste is covered in places with boulders up to 6 feet in diameter. The internal character of the waste in the Main Tailings Pile has not been investigated by intrusive activities. The thickness of the material in the Main Tailings Pile has been determined via comparison of historic topography with the current surveyed Site topography as demonstrated on Figures 3-2 and 3-3. The average thickness of the western portion of the Main Tailings Pile targeted for removal is 24 feet. The eastern portion of waste extending from the lower reaches of Main Tailings Pile to the Lower Pond SI is estimated to be as little as three feet thick or less. Along the east-west edge of the upper portion of the Main Tailings Pile, the slope is very steep - on the order of 1:1. The waste area extends into the adjacent State Park to the south.

The top surface of the Main Tailings Pile is essentially level with a grade to the west for the capture of surface water as designed by the landowner. The tailings have been capped with 10 to 20 feet of fill as estimated by the landowner (Figure 3-2). The capping material extends down the face of the Tailings a significant distance. The cap material is reported to be from a local pool contractor who has stored excess soils on the Site for many years. The leading downhill slope of the stockpile is quite steep and likely is on the order of 2:1 (26.5 degrees) or steeper. The estimated volume of wastes proposed for removal from the Main Tailings Pile, as depicted on Figure 3-1, is 102,245 cubic yards.

A small area of calcines is located to the north of the Bradley wastes (Figure 3-1). The gravel-size material was roasted to drive off the mercury as a vapor. The calcines are distinctive and their extent is readily discernable on the ground. The estimated volume of these materials is 7,500 cubic yards based on topographic analysis.

The remedy proposed is the removal and transport of these uncapped exposed Mine waste materials as depicted on Figure 3-1 to the former Mine workings area for consolidation and capping. Figure 3-4 depicts cross sections of the expected configuration of the Mine waste after all waste has been consolidated in the former Mine workings area. The cross sections depict Mine waste extending to an elevation of 930 feet. The planned footprint of consolidated waste in the former Mine workings area extends from the base of the floor at approximately 875 feet to the 930-foot contour interval as shown on Figure 3-1. The volume capacity of this consolidation area is calculated to be approximately 150,000 cubic yards.

Removal of the waste footprint from the Main Tailings Pile as depicted on Figures 3-1 and 3-2 will result in the exposure of the toe of the capped waste that lies above. During the pre-implementation planning phase of the proposed project, an approach for the stabilization and capping of the exposed toe of the capped waste material will be developed by the Site engineer in consultation with an appropriate geotechnical expert. Currently, insufficient data combined with the unknown condition of the base rock under the tailings preclude the development of a detailed plan. The capping and grading plan developed will be based on appropriate field sampling and investigation conducted during the pre-implementation phase of the project and will be submitted to the CVRWQCB for review and approval.

3.4.2 Lower Pond Surface Impoundment

A surface impoundment at the location of the Lower Pond SI has been present at the Mount Diablo Mine since at least the late 1930s. Division of Water Resources (1952) reports the results of a chemical analysis of "*final*" pond outflow from 1939. It is believed that this final pond occupies the same approximate footprint as the present day surface impoundment. The current condition of the Lower Pond SI at the Mine is a result of upgrade and modifications conducted by the current property owner. The Lower Pond SI was re-built in 1978/1979 by Jack Wessman as one of the requirements of the Waste Discharge Requirements and the Cleanup and Abatement Order issued in 1978. Jack Wessman has stated that the Lower Pond SI levee material was derived from local soils that were not in contact with the Mine tailings with the bulk of the material derived on-site from an area north and east of the Lower Pond SI. The lower pond was designed to have an effective storage capacity of 3.0 acre-feet.

A small secondary pond (herein referred to as the Middle Pond) was also constructed by Jack Wessman, immediately north of the Lower Pond SI. This Middle Pond was built by Jack Wessman to capture the stormwater drainage as part of his work to manage stormwater flow away from exposed Mine waste as discussed in Section 2.1.7. Removal of the Middle Pond is not part of this Remediation Plan.

Removal of the Lower Pond SI and berm materials is estimated to generate approximately 14,189 cubic yards of solid waste material form the area depicted on Figure 3-1. Of this total, approximately 9,400 cubic yards are estimated to be sediment contained within the impoundment. Additionally, approximately 2,400 cubic yards of waste material that is observable below the southern levee of the surface impoundment is included in the total.

In its current configuration, the Lower Pond SI drains directly into Dunn Creek. De-watering of the Lower Pond SI will be conducted via pumping and on-site treatment to remove sediment load and reduce total metals loading to Dunn creek. Estimated water volume in the pond at the time of project implementation will be dependent on the time of year and the total winter rainfall preceding the project start. Water volume is estimated to be on the order of 2 to 3 million gallons. Based on the requirements determined during the permitting stage of the Remediation Plan implementation process, a de-watering plan for the impoundment will be developed and submitted to the CVRWQCB for review and approval.

The Lower Pond SI is bounded on the west by a large area of open ground with a gentle slope that is already covered and impacted with Mine waste materials. During sediment excavation, staging and amendment of sediments will be conducted in this area such that run-off from the staging and processing area will naturally be contained within the catchment of the Lower Pond SI.

Lower Pond SI sediments will be excavated and amended via the addition of cement and/or other satisfactory pozzolonic material to stabilize them and allow transport to the consolidation area. Initial estimates indicate the need for 1200 tons of dry cement for application to the pond sediments in order to stabilize and condition the sediments.

The footprint of the excavated Lower Pond SI will be restored via implementation of a re-vegetation plan as discussed in Sections 3.7 and 4.4.

3.4.3 Mine Adits and Shafts

Based on review of Site mining history information and interviews with the current property owners, no mineshafts are known to exist in the area of planned tailings removal. Removal of the Main Tailings Pile is expected to uncover the former 165 level Adit as shown on Figure 3-2. The condition of the adit opening is unknown. Historic information indicates that this adit may be the source of some or all of the spring water currently exiting the Main Tailings Pile and called the Travertine/Adit Spring. Based on the condition of the adit when uncovered, a plan will be developed to; 1) remove Mine waste in the adit mouth that could contribute mercury loading to spring water, 2) stabilize and plug the adit opening, and 3) construct a catchment to capture any water drainage effectively and route it away from all Mine waste as detailed in following Section 3.4.4.

3.4.4 Travertine Spring /Adit Discharge

Removal of the Main Tailings Pile will allow access to the historic emanation location of the Travertine Spring and the possible groundwater discharge from the portal of the 165 level Adit (Figure 3-2 and 3-3). Through access to these areas, the sources of current groundwater discharge that emerges as the spring and seeps will be determined. Based on the determination of the source of the spring water, appropriate catchment/s will be designed. The catchment/s will be designed to allow complete capture of these groundwater discharges allowing competent routing of the flow away from contact with Mine waste. During project implementation, a temporary catchment will be designed by the Site engineer to route the groundwater discharge away from the on-going work areas. This flow will be diverted to Dunn Creek and bypass any further contact with existing Mine waste. Due to the planned removal actions that will be occurring in the vicinity of these groundwater discharges, the likely routing direction for this flow is to the south in the vicinity of the State Park Spring. As a result of this planned re-routing, it is expected that the groundwater discharge water quality will be significantly improved in comparison to the current discharge of these waters to Dunn Creek.

A spring water catchment and routing plan will be developed and submitted to CVRWQCB for review and approval. During the intervening time, a temporary catchment and routing plan will be developed and immediately implemented by the Site engineer in consultation with CVRWQCB staff. Maintenance of this temporary discharge routing will be conducted throughout the implementation process. Construction of permanent catchment and routing structures will be conducted following approval of the developed plan by the CVRWQCB and the effective completion of removal and stabilization activities in the area.

3.5 Material Management Plan

This section describes the material management plan for Site Mine-related material, including structures and equipment, waste rock, tailings, calcines, and mercury-enriched sediments.

3.5.1 Recycling and Disposal of Structures and Equipment

The Remediation Plan does not include the removal of Mine-related equipment. However, it is possible that during the process of excavation and consolidation of Mine waste, Mine-related equipment will be encountered.

Mine-related equipment that is encountered, such as pipes and retort remnants, will be consolidated within the consolidation area if feasible. Where inclusion of Mine-related equipment encountered is considered by the Site engineer to be infeasible, the Mine-related equipment will be further evaluated to determine if removal is necessary. If equipment or structures encountered cannot be included in the consolidation area, then the procedures that would be followed are described below.

Where possible, based on the available material characterization data, remnants of former Mine-related structures and equipment will be recycled. Only those materials demonstrated to contain concentrations of mercury below applicable regulatory limits will be considered for recycling. Materials will be sorted by type (i.e., brick/concrete, dimension stone, wood, and metal) in the staging area as they are removed. Brick, dimension stone, and concrete debris will be transferred to a recycling facility or disposed as construction waste, depending on condition. Wood will either be recycled or disposed of as construction waste depending on condition. Steel will be transferred to a recycling facility as general scrap metal.

3.5.2 On-Site Stabilization and Capping

Mine waste consolidation and stabilization will be completed so that the consolidated and capped materials will not be actively eroding material directly to Dunn creek or its minor tributaries. In general, materials that are moved for consolidation will be placed in lifts, keyed into existing slopes and compacted between lifts. Water trucks will provide water that will be used for dust control as well as to enhance soil compactability. Lifts will be keyed in for stability and erosion control. Once final grading is complete, the materials will be capped with soil. The source of the borrow soil will be determined prior to contractor selection and detailed in a capping plan. The cap material will be keyed into the surrounding native material and proof rolled for compaction.

A licensed geotechnical engineer under the direction of the Site engineer will perform a geotechnical investigation. The investigation will include slope stability, seismic stability, and design of the capping area. Furthermore, the licensed geotechnical engineer will provide drainage recommendations to be installed within the consolidated waste material. Based on this pre-implementation design, a general Capping Plan will be prepared by the Site engineer and submitted to the CVRWQCB for review and approval.

3.5.3 Hazardous Waste

Mine-related waste that is the subject of this Remediation Plan is by its nature considered to fall under the Bevill exclusion. In October, 1980, Resource Conservation and Recovery Act (RCRA) was amended by adding section 3001(b)(3)(A)(ii), known as the Bevill exclusion, to exclude "*solid waste from the extraction, beneficiation, and processing of ores and minerals*" from regulation as hazardous waste under Subtitle C of RCRA.

No waste is planned for off-site disposal as a result of the actions described in the Remediation Plan. Although not anticipated, if hazardous wastes are generated during the project and they do not meet the Bevill exclusion requirements, these wastes will be transported to an appropriate hazardous waste landfill facility for disposal. In this event, a transportation plan will be developed. The transportation plan will include, if required, trucking routes and manifest required for the hazardous waste facility. The final hazardous waste disposal facility will be determined based on the waste characteristics, waste profile, and the acceptance criteria for the available disposal facilities.

3.6 Removal Confirmation

The extent of excavation of Mine-related waste rock, and tailings at the Site will be determined in the field using qualitative (visual) techniques before and during excavation activities. Samples for laboratory analysis will not be collected to confirm removal and/or stabilization limits or boundaries.

The horizontal and vertical limits of the waste rock, and tailings piles will be identified and confirmed using the following guidelines:

- Topographical expression (many material piles have well-defined topographic profiles);
- Color change (calcine tailings have a distinctive reddish color);
- Presence of buried soil horizons, as evidenced by the presence of organic material, roots, and developed soil horizons;
- Presence of in-place bedrock;
- Presence of laminated or bedded fine-grained material indicative of natural overbank deposits; and
- Presence of an abundance of rounded gravel and cobbles indicative of former streambed or stream terrace deposits.

Delineation of the horizontal and vertical limits of the waste rock, ore, and tailings piles will be conducted by or under the direction of registered Professional Geologists with relevant expertise in accordance with California Business and Professions Code sections 6735, 7835, and 7835.1. The delineation tasks will also be documented and reported to the CVRWQCB.

In order to distinguish Mine-related materials from natural soils and rock materials, the following guides will be used; the soil classification guidelines published in American Society for Testing and Materials Standard D-2487 and the standard practice for classification of soils for engineering purposes (Unified Soil Classification System). The available guidelines will be applied in a manner that allows for the removal or stabilization of all targeted Mine-related materials while minimizing the removal or disruption of in-place naturally occurring materials.

3.7 Site Restoration Approach

This section describes the Site restoration approach, including temporary road removal; re-grading, slope stabilization and bank stabilization; and re-vegetation that will be conducted in accordance with the NOI storm water discharge permit.

3.7.1 Temporary Road Removal

All Mine access roads or constructed temporary roads, bridges, or steel plates used during construction will be removed and the area restored upon the completion of work in that area as described in Sections 3.7.2 and 3.7.3. Unless required for future access or requested by the property owner, culverts placed or repaired during the construction of the roads will be removed and disposed of in accordance the recycling plan described in Section 3.5.1.

3.7.2 Re-grading, Slope Stabilization, and Bank Stabilization

Disturbed areas and temporary roads will be restored upon completion of all removal and/or on-site stabilization activities. Slopes and roads will be graded to a natural line that limits run-off and drainage. Fill material will be borrowed from on-site as need for grading and stabilization. Positive drainage will be achieved to minimize ponding of water. Slopes will be stabilized by eliminating run-off from the top of the slope, or cutting the slope back to slow stormwater run-off. Grading around on-site stabilized materials will be used to divert stormwater away from the stabilized material. Grading near creeks will be completed to limit streambed disturbance and maintain the natural flow. The grading of Site areas will remain above the Dunn Creek elevation to minimize the potential for undercutting.

Temporary bank stabilization measures may be necessary at the Dunn Creek drop adjacent to the southeast corner of the Lower Pond SI to minimize lateral creek migration following removal of the pond and associated berms.

3.7.3 Re-vegetation and Monitoring

A re-vegetation plan will be developed for the project that focuses on the seeding of early succession herbaceous grasses and/or forbs upon completion of the Site removal actions.

Disturbed Site areas will be re-vegetated following the completion of the construction season just prior to the first rain events. Re-vegetation will include hydro seeding, or other techniques where more appropriate, with an appropriate soil stabilization seed mix. Upon completion of re-vegetation activities, a Site Inspection with the CVRWQCB will be scheduled. See Section 4.4.5 for additional details of the re-vegetation plan.

4.0 REMOVAL DESIGN, METHODS AND PROCEDURES

This section describes the removal design, methods and procedures, including sample collection and analysis, Site preparation and control, Mine-related material removal, Site restoration design, equipment decontamination, geolocation, and recordkeeping.

4.1 Sample Collection and Analysis

Sample collection during project implementation is anticipated for both soil and water as follows:

1. Geotechnical evaluations discussed in Section 3.5.2 will be required during the removal, consolidation, and capping of Mine waste material. Sample collection and analysis specifications for soil samples will be described in the capping and grading plan developed before and during project implementation.
2. Water sampling will be conducted at the Lower Pond SI to evaluate water treatment and discharge options during planned de-watering.
3. Additionally, water samples will be collected from spring discharge upon uncovering of the former Travertine spring and the portal of the 165 level Adit. These samples will be collected and analyzed to aid in the management of these spring waters during and after completion of the removal actions specified in this Remediation Plan. All water samples will be collected under chain-of-custody protocols and transported to a State-certified laboratory for analysis. Samples will be analyzed for the following constituents using the appropriate test method:

Constituent	Test Method
Total/Dissolved Mercury	EPA 245.1
Methyl Mercury	EPA 1630
pH/Specific Conductivity/Turbidity	SM18 4500H+/2510B/2130B
Alkalinity (Bicarbonate, Carbonate, Total)	SM18 2320B
Total Organic Carbon	SM18 5310C
Total Dissolved Solids	SM18 2540C
Chloride, Bromide, Fluoride, Nitrate	EPA 300/SW846 9056A
Metals (Sb, As, B, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Si, Na, Zn)	SW846 6010B

4.2 Site Preparation and Control

This section outlines the Site preparation and control methods and procedures to be implemented during Site removal and restoration activities, including mobilization and demobilization, materials and equipment staging, and road construction and improvements.

4.2.1 Mobilization and Demobilization

Mobilization and demobilization includes all work necessary to manage operations for the duration of the project. Mobilization tasks will include, but are not limited to:

- Project management of all construction operations;
- Completion and maintenance of the HASP;
- Delivery of all equipment and materials to support work and health and safety requirements;
- General Site preparation, including fencing, and signage, to support operations for the duration of the project; and
- Installation and maintenance of all stormwater BMPs.

Demobilization tasks will include, but are not limited to:

- Removal of temporary Site controls and facilities established by the subcontractor;
- Removal of any damage caused by temporary Site controls and/or removal work;
- Verification that post-construction SWPPP BMPs are in place at the conclusion of the project;
- Decontamination of all equipment leaving the Site; and
- Final inspection by CVRWQCB at the conclusion of the project.

4.2.2 Materials and Equipment Staging

Material and equipment staging areas will be located on the valley floor near the entrance to the Mine property and on the Mine terrace area located as shown on Figure 4-1. The staging areas will house field offices, equipment and material storage, and heavy equipment staging areas.

The valley floor staging area will be located in an area that is not impacted by past mining operations. Only minor or emergency equipment repair or maintenance will be completed in the staging area. Activities will be conducted within the staging areas in a safe manner that is protective of the environment. All generators used for power will have secondary containment for fueling and a spill response kit available at all times. The equipment maintenance area will also have secondary containment as well as stormwater BMPs in place to protect the surrounding area. Note non-emergency maintenance will be conducted off-site.

Storm water BMPs will be in place anytime material is being stored in the stockpile portion of staging areas. Stockpiles will be covered if substantial rain is in the forecast and run-off is possible.

At a minimum, BMPs will consist of straw wattles around the base of the pile and silt fence around the perimeter of the stockpile area.

Both the materials and equipment staging areas will be restored as described in Section 4.4 upon completion of the project.

4.2.3 Road Construction and Improvements

Road construction and improvements will be an ongoing task during the project. Mine access roads will be constructed or existing roads repaired on an as needed basis. Conceptual plans for road construction and improvements are shown in Figure 4-1. Tasks that will be performed for Mine access road construction include the following:

- Grading of existing roads for use by off-road trucks and equipment will be kept to a minimum. Roads will only be scraped to remove ruts, large rocks, or widened for safe passage of the largest piece of equipment using the road. These roads will be constructed by using a dozer to create a road and berm the spoils along the outer edge of the road for use later. The maximum road width will be 14 feet except in turn out areas. Roads will be re-contoured to minimize the disturbance of existing slopes.
- Replacing or extending drainage culverts may be required to accommodate larger vehicles.
- New culverts, steel trench plates, or a combination of the two will be used at locations where existing culverts or drainage channels require additional support.
- New access roads will be constructed only when needed. Each road will be constructed with a dozer just deep enough to remove vegetation and wide enough for the largest piece of equipment to access. Any material removed from the road will be bermed on the side for re-vegetation use when the work is complete. Roads will be constructed along contour as much as possible while providing safe passage of trucks and equipment. Turns will be kept wide so that additional rutting and damage to the area does not occur.

4.3 Mining-Related Material Remediation

This section describes the Mine-related material remediation methods (i.e., removal and managed-in-place) and procedures to be implemented during Site removal and restoration activities, including required equipment; structures and equipment removal and staging; waste rock, tailings, and sediment removal segregation, and staging; on-site management of Mine-related materials; and transportation.

4.3.1 Required Equipment

The removal of Mine-related materials (e.g., rock, tailings, and debris) will require at a minimum the use of heavy equipment, including:

- Excavator with thumb;
- Excavator with straight edge bucket;

- Multiple 10-wheel truck or off-road trucks;
- Water truck, all wheel drive;
- Drop tank for water;
- Loader;
- Dozer, D-6; and
- Dozer, D-6 LGP.

4.3.2 Structures and Equipment Removal and Staging

The removal of Mine-related structures is currently not anticipated as part of this Remediation Plan. If required due to encountered conditions, the removal of former Mine structures will be completed with an excavator with thumb with minor cutting. If hot work is need to dismantle steel structures, a separate job safety analysis form will be completed and included in the project HASP.

4.3.3 Waste Rock, Tailings, and Sediment Removal, Segregation, and Staging

Waste rock, tailings, and sediment will be removed from the Site using a systematic approach. Excavators will be used to excavate the material and load into haul trucks. The material will be removed using a straight edge bucket working from the outside edges of dumps and piles inward. The process will minimize the mixing of native material with the tailings, the over excavation of material, and the spreading of material into adjacent creeks and clean areas. To the extent possible, work will proceed from the furthest location of the Mine back toward the staging area. Material will be directly loaded into trucks and transported to the consolidation area in the former Mine workings for placement.

During sediment excavation, staging and amendment of sediments will be conducted in the area located immediately west of the pond as shown on Figure 4-1. Pond sediments will be excavated and amended via the addition of dry cement to stabilize them and condition the sediments allowing transportation to the consolidation area. Care will be taken to prevent generation of cement dust using a water buffalo during mixing activities. Mixing will also occur during sunny and low wind conditions. If average wind velocities are greater than 25 miles per hour, then lime stabilization activities will cease until conditions stabilize to stabilize them and allow transport to the consolidation area.

4.3.4 On-Site Management of Mine-Related Materials

The Mine-related material will be spread in thin lifts and compacted. The final surface shall be graded to match the surrounding surface, have positive drainage, and seeded with the approved upland seed mix to vegetate the finished surface. The final specifications for the consolidation and capping of waste materials will be detailed in the capping and grading plans developed as discussed in Section 3.4.1.

4.3.5 Transportation Plan

A Site transportation plan will be prepared during pre-mobilization to identify potential health and safety risks resulting from on- and off-site movement of materials, equipment, and debris. The preliminary transportation plan outlines appropriate procedures and precautions that will be taken to minimize potential risks, and will be modified during the project to reflect changing conditions, improved procedures, and expanded scope, as needed, including additional off-site disposal locations, if necessary.

4.4 Site Restoration Design

This section describes the Site restoration design, including required equipment, temporary road removal, re-grading and slope stabilization, sediment controls, and re-vegetation.

4.4.1 Required Equipment

Equipment required for Year 1 Site restoration may include the following:

- Water truck, all wheel drive;
- Dozer, D-6, with rippers; and
- Hydro seeder.

4.4.2 Restoration of Temporary Roads

All temporary roads used or constructed as part of this project will be removed when all construction is completed. Using excavating equipment and starting at the furthest extent of the access road, the roadway shall be graded to match existing grade and contour as the equipment "*backs out*" of the access road alignment. Road areas shall be graded such that no ponding of stormwater will occur and seeded with the approved seed mix to re-establish the vegetative cover. Restoration activities will include:

- Removal of culverts installed for creek crossings;
- Removal of signs or markers installed during mobilization;
- Removal of new temporary bridges, anchor blocks, and support blocks in creek;
- Rip the soil compacted during road construction to facilitate re-vegetation;
- Re-grade the road location to minimize visual evidence of the road;
- Re-grade to minimize run-off and erosion, per Sections 4.4.3 and 4.4.4; and
- Re-vegetate area per Section 4.4.5.

4.4.3 Regrading and Slope Stabilization

The restoration of disturbed areas and temporary roads will be completed by grading the area to blend with the surrounding grades and natural slopes to the extent practicable. Areas that have been compacted and abandoned will be graded and/or ripped to facilitate vegetation growth. All slopes and graded areas will minimize channeled stormwater run-off and erosion.

Slopes will be stabilized by track rolling with the dozer, will comply with stormwater BMPs, and will be finished with hydro seeding per the re-vegetation plan. For areas requiring fill along slopes, the material will be keyed in and compacted.

Where appropriate, grass filters may be employed to facilitate stabilization and mitigate sediment run-off to the creek. A grass filter is essentially a vegetated buffer zone lying on the flat to gently sloping terrace surface between the toe of the slope and the top of the main channel bank. The vegetation slows the velocity of sediment laden run-off causing the sediment to deposit on the surface within the limits of the vegetation coverage before reaching the edge of the stream bank. It relies on a high cover density of grass or grass-like vegetation (a dense cover of weeds will also be effective). The grass filter can be formed either by preserving an existing stand of dense vegetative cover (i.e., leaving a buffer zone) or by re-establishing a dense vegetative cover on a newly disturbed surface.

4.4.4 Potential Channel Sediment Controls at Dunn Creek

Dunn Creek flows on the eastern portion of the Site, and flow is toward the south. Dunn Creek's drainage on the northern portion of the Site is relatively topographically flat and near the northern portion of the Lower Pond SI, Dunn Creek is funneled into a narrow channel, which increases stream velocity and erosive energy. Near the southern end of the Lower Pond SI, Dunn Creek topographically drops approximately 4 feet, which has resulted in moderate to severe erosion at this location. At the request of Sunoco, SGI concreted with shotcrete the western portion of Dunn Creek as it bounds the Lower Pond SI to prevent erosion from damaging the southeast corner of the surface impoundment (SGI, 2009). The eastern portion of Dunn Creek at this location has since experienced moderate erosion and BMPs will be deployed to reduce the velocity of the channelized water before and after falling over the topographically higher ledge. BMPs will include inert rip-rap, energy dissipaters, and splash preventers. All BMPs will be selected and designed by a Professional Geologist/Professional Engineer prior to deployment.

4.4.5 Re-vegetation

A re-vegetation plan will be developed during the implementation phase of the project. The goal will be to introduce early succession stage vegetation that will (a) control soil erosion and (b) promote future succession of plant communities at the Mine. As underlying substrate and slope of areas following remediation cannot be accurately determined at this time, the re-vegetation plan will be developed during project implementation following completion of excavation and removal activities.

4.4.6 Maintenance and Monitoring Plan

Due to the unknown nature of the final design of some of the specific remedial actions described herein, development of a maintenance and monitoring plan will be conducted following completion of removal and consolidation activities. The maintenance and monitoring plan will be developed as appropriate based on the final known and/or designed disposition of implemented remedial actions concerning capped areas, re-vegetated areas, and water discharge controls. The maintenance and monitoring plan will be submitted to the CVRWQCB for review and approval consistent with the approach for the multiple implementation plans specified for development in this Remediation Plan.

4.5 Equipment Decontamination

Equipment decontamination will occur anytime a piece of equipment or truck that was in contact with contaminated material leaves the Mine area (boundaries to be determined in the field) or the Site. Mine area and staging area decontamination will be conducted in accordance with the following procedures:

- Contaminated material with be knocked off all equipment tracks and/or tires prior to leaving work area;
- Bulk transporters or on-site trucks will load in a single area outside of the contaminated zone to prevent material from being tracked out;
- Bulk transporters and on-site trucks will keep loads below the rail and will clean rails prior to proceeding on haul road; and
- Support vehicles will not enter contaminated zones.

Equipment and or trucks leaving the project Site will adhere to the following procedures:

- Equipment will be decontaminated in the staging area prior to leaving the Site. The bid specifications will include specific demobilization decontamination procedures.
- Bulk transport trucks will verify that rails and fenders of trucks are clear of soil and that tires are clean prior to leaving staging area. Knock-off pads will be constructed if necessary.
- Pickup trucks leaving the Site will have clean tires prior to leaving the Site on the access road.
- All vehicles leaving the property will have clean tires prior to entering Morgan Territory Road. Knock-off pads will be constructed if needed.

4.6 Geolocation

The limits of removal actions at the Mine will be photo-documented in the field and will be geolocated using a portable global positioning system (GPS) unit. The GPS data will be used to develop as-built maps of the construction effort using the existing project base maps, and will be augmented by a series of before-and-after photographs of all of the working areas.