

of the seasonal nature of large precipitation events. In winter, rain events fill Dunn Creek resulting in a dilution of the waters flowing from the Site. Flow from the Site is greatly reduced during the generally dry summer months, though there is typically no baseflow in Dunn Creek to dilute it. However, across the range of flows that have been sampled during this site investigation, no mercury (total or dissolved) or arsenic have been detected at concentrations that have exceeded the freshwater criteria. Freshwater criteria that have been exceeded by waters from 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 were also found at concentrations exceeding the freshwater criteria in the samples collected from the Park Spring sample location (SW-04). The Park Spring is an offsite source of water with no known connection to the Mine. The waters from this spring are reflective of natural chemistry of waters that would flow from the area around the mine. Park Spring water contains concentrations in excess of the freshwater criteria of similar constituents to that of Dunn Creek immediately downgradient of the Site, which indicates that these exceedences would occur independent of any impacts caused by former Mine operations.

5.0 INVESTIGATION SUMMARY AND CONCLUSIONS

The investigation activities described in this report have included the following:

- Additional background site mapping using a topographic survey;
- Installation and sampling of wells completed within the former tunnel systems of the Bradley 165-level and the DMEA 360-level; and
- Surface water sampling at a total of sixteen locations.

The data collected during this phase of investigation have 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) has 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.

As described in Section 4.1.1.3 the chemical signatures of the water present in DMEA-1 and ADIT-1 are generally similar to one another, with the exception that DMEA-1 contains no mercury. Both wells contain arsenic. A dissimilarity in chemical signature between the wells was noted during the July 2011 well sampling compared to the June 2011 sampling, indicating that water present in the 165-level Adit had not been significantly affected by the 360-level. This observation suggests that the connection between the two systems is likely muted and being overwhelmed by the other sources of water flowing into the 165-level Adit level, specifically the brecciated source rocks and the saturated zone of the nearby fault. Therefore, the contribution of groundwater flow directly from the 360-level to the 165-level is likely small and insignificant, with the majority of water emanating from Adit Spring sample location (SW-15) being sourced from the natural fractures and saturated fault zone present near the mine workings, and independent of the Cordero tunnel systems.

Water flowing across the Site is either sourced from springs (including the Adit Spring) or from rainwater. These sources result in the three flow patterns described in Section 4.4 which include water sourced from the former underground mine workings, water that is sourced from precipitation which travels through the Bradley tailings and waste rock, and background water sources that generally do not contact mine tailings or waste rock. Water sampling along the pathway from the Adit Spring to the pond indicate that mercury concentrations increase the longer they are in contact with the mine tailings, and are highest in the lower pond, after the most time in contact with the tailings. Arsenic concentrations generally decrease, indicating the tailings are not a source of additional arsenic in water at the Site. Rainwater which percolates into the tailings piles also picks

up mercury and other compounds in its way to the pond. Sample locations SW-02 and SW-03 are representative of this pathway, but are similar in chemistry to SW-15. This observation shows they are all in contact with similar material, although not sourced from the same water. Water sampling locations SW-12, SW-16, and SW-4 are indicative of water that does not come into contact with former mine tailings. Samples collected from these locations are considered background concentrations and represent pre-mining site surface water conditions.

Surface sample location SW-07 is 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 are not present in location SW-07 above water quality criteria;
- Freshwater criteria are exceeded by waters from sample location SW-07 including methyl mercury, alkalinity, total dissolved solids, chloride, iron, and nickel; and
- With the exception of methyl mercury, all of these compounds are also detected at concentrations exceeding the freshwater criteria in the samples collected from the background Park Spring sample location (SW-04).

This point of compliance and water quality criteria evaluation shows that water downgradient of the Site exceeds water quality criteria only for compounds present in background samples above water quality criteria. Although mercury and other compounds from the mine are travelling into Dunn Creek, the contribution of the water from these sources is so small compared to other sources (i.e. Park Spring, runoff 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.

The additional surface water samples collected have confirmed the results of previous samples collected earlier in 2010 and the Slotton data. These similar results support the conclusions of the Characterization Report that the majority (94.3 percent based on Slotton, 1995 calculations) of the mercury mass loading from the Site into Dunn Creek originates via surface runoff through the Bradley tailings piles, into the Lower Pond, and then into Dunn Creek.

The Site surface water sampling locations associated with runoff of surface water through the Bradley tailings piles and into the Lower Pond (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 sample location SW-09 had no methyl mercury, arsenic or chromium exceedences).

Data collected to date, including historical and current data, indicate that 1) the 360-level Cordero workings have little to no impact on the flow of water from the 165-level Adit workings that were mined by Bradley; 2) water emanating from the 165-level at sample location SW-15 and in ADIT-1 contains mercury concentrations above freshwater CVRWQCB and USEPA criteria, but does not contribute a significant enough flow into Dunn Creek to result in downgradient concentrations above the criteria; and 3) other compounds present in SW-07 (Dunn Creek) above these criteria area are also present in background water samples above water quality criteria. Data collected support conclusions by previous investigations that the key remedial focus at the Site is mitigating contact of surface and mine water with the Bradley tailings piles through removal and/or capping.

6.0 REFERENCES

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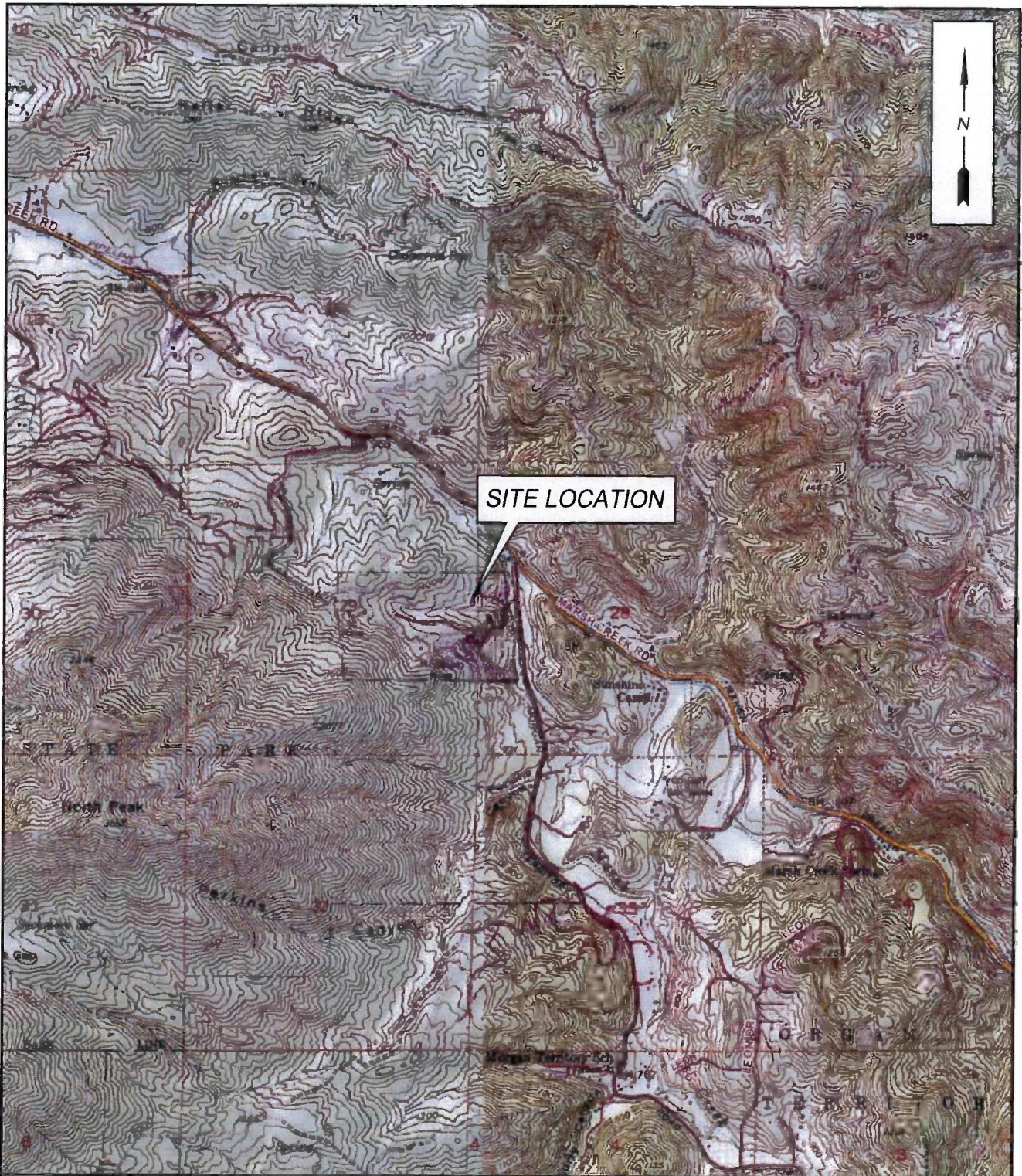
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FIGURES

FIGURES



SGI environmental
THE SOURCE GROUP, Inc.

3451 C VINCENT ROAD
 PLEASANT HILL, CA 94523

MAP SOURCE: U.S.G.S.

SCALE:

0 MILES 0.5

SITE LOCATION MAP

SITE:

SUNOCO
 MT. DIABLO MERCURY MINE

DATE:

12/05/08




LOCATION:

2430 MORGAN TERRITORY ROAD
 CLAYTON, CALIFORNIA









FIGURE:

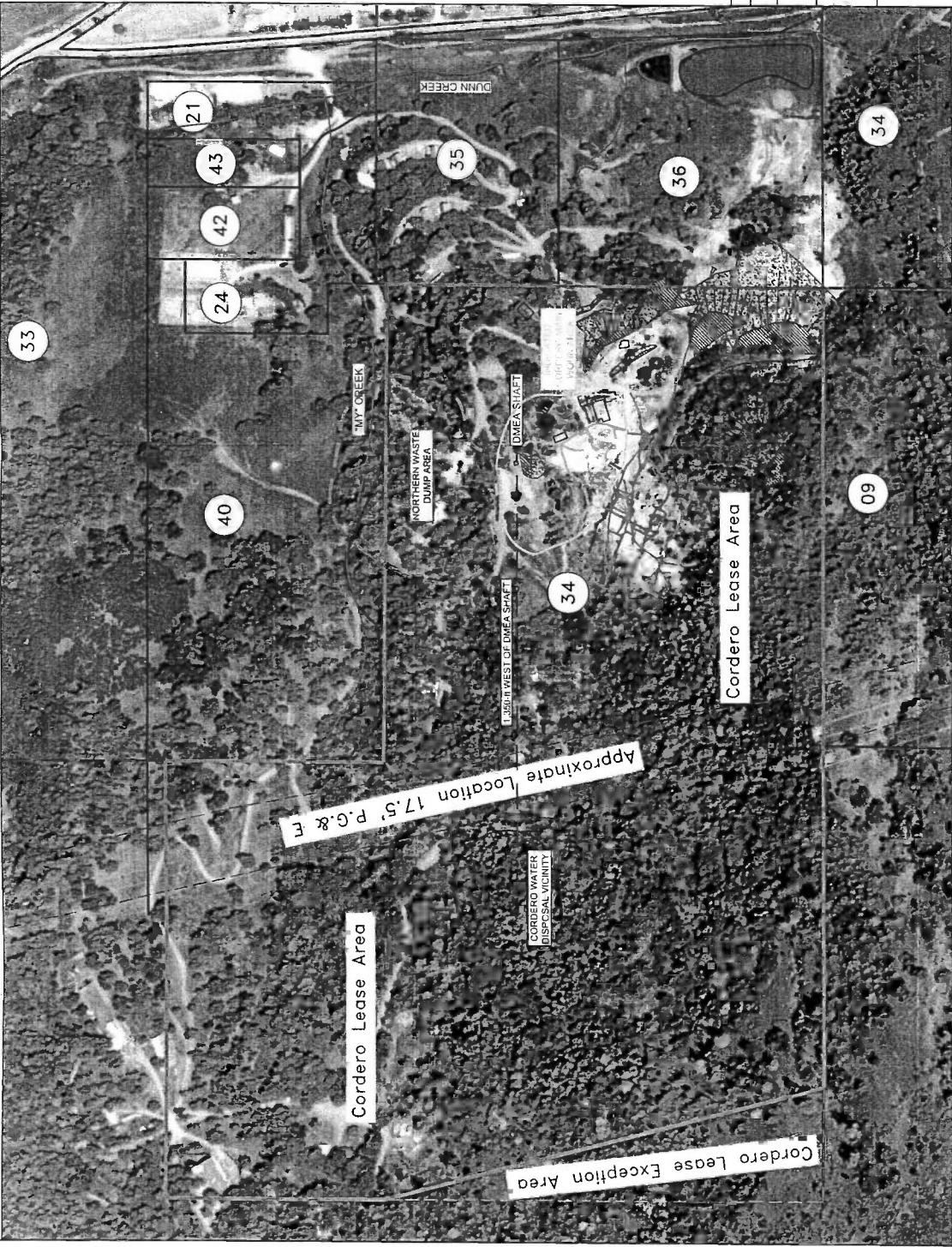
1-1



<p>LEGEND</p> <ul style="list-style-type: none">  Mine Structure (1953)  Spring  Pond (2004 Outline) 	<p>SCALE</p> <p>0 150 300 SCALE IN FEET</p>	<p>FILE NAME Mine Features Map.dwg</p>	<p>DATE 5/4/09</p>	<p>DR. BY JP</p>	<p>APP. BY PH</p>	<p>PROJECT NO. 01-SUN-050</p>	<p>FIGURE NO. 2-1</p>
<p>THE SGI environmental Source Group, Inc. 3451C VINCENT ROAD PLEASANT HILL, CA 94523</p>		<p>MT. DIABLO MERCURY MINE CONTRA COSTA COUNTY, CALIFORNIA (2004 AERIAL)</p>		<p>2004 AERIAL PHOTO OF MT DIABLO MINE SITE</p>			

LEGEND

-  Mine Structure (1953)
-  Tailings/Waste Rock (Pre Cordero)
-  Waste Rock (DIMEA/Cordero)
- Underground Workings**
-  Adit Level
-  80-ft Level
-  165-ft Level
-  270-ft Level
-  360-ft Level (Cordero)



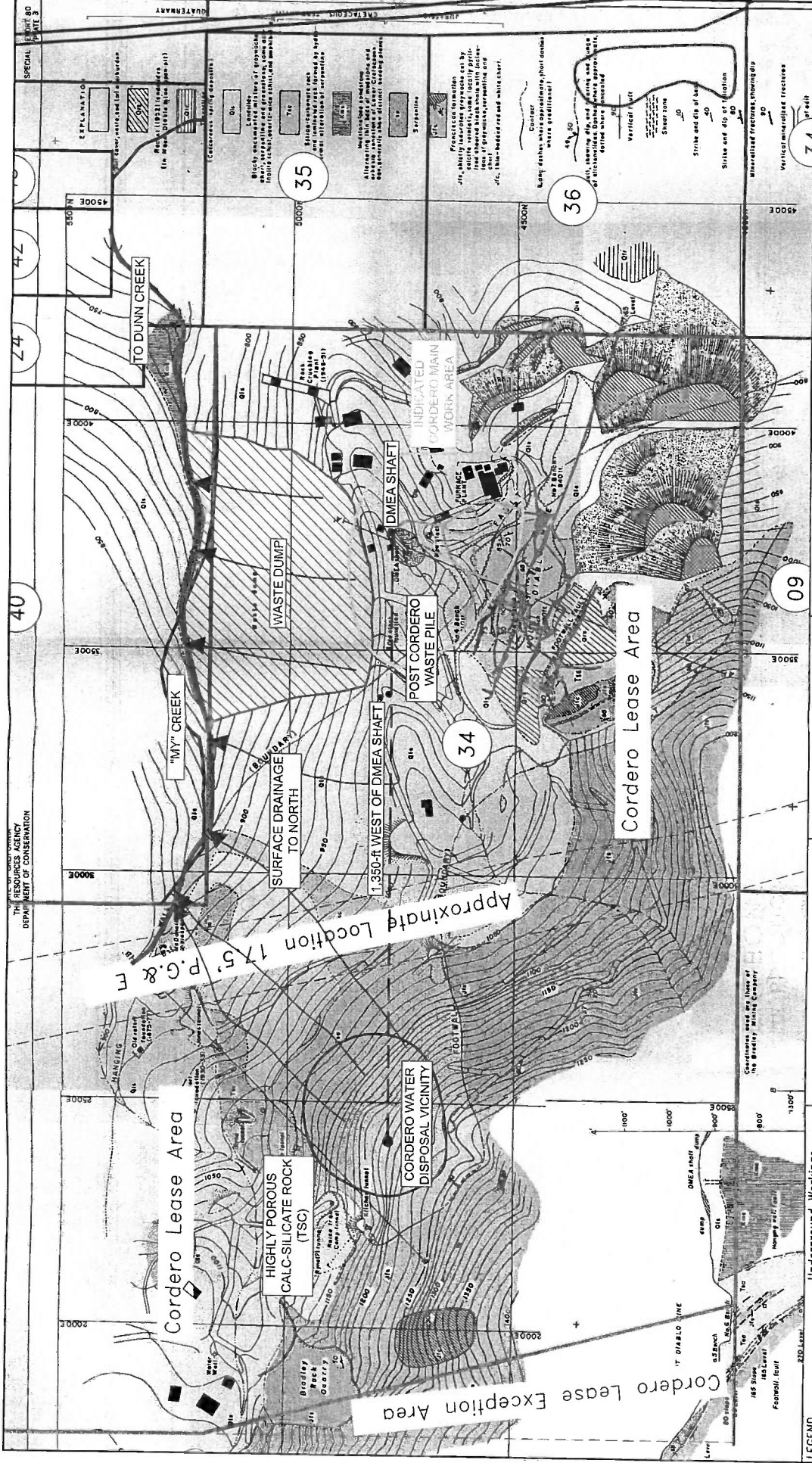
PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
01-SUN-050	07/17/09	JP	PH



2004 AERIAL PHOTO SHOWING PARCEL AND CORDERO LEASE BOUNDARIES

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 3451-C VINCENT ROAD
 PLEASANT HILL, CA 94523

FIGURE: 2-2



<p>THE RESOURCE AGENCY DEPARTMENT OF CONSERVATION</p>	<p>DATE: 4/14/09</p>	<p>DR. BY: JP</p>	<p>APP. BY: PH</p>	<p>PROJECT NO.: 01-SUN-050</p>	<p>EXHIBIT: 2-3</p>
<p>MT. DIABLO MERCURY MINE CONTRA COSTA COUNTY, CALIFORNIA (2004 AERIAL)</p>	<p>DMEA MAP SHOWING PRE- AND POST-DMEA/CORDERO MINE FEATURES</p>				
<p>SCALE 0 200 400 SCALE IN FEET</p>	<p>FILE NAME: Mine Features Map.dwg</p>				
<p>LEGEND</p> <ul style="list-style-type: none"> Underground Workings <ul style="list-style-type: none"> Adit Level 80-ft Level 165-ft Level 270-ft Level 360-ft Level (Cordero) Mine Structure (1953) Tailings/Waste Rock (Pre-Cordero) Waste Rock (DMEA/Cordero) 	<p>Approximate Location 175' P.G. & F</p>				



**TOPOGRAPHIC MAP OF SITE -
2-FOOT CONTOURS**

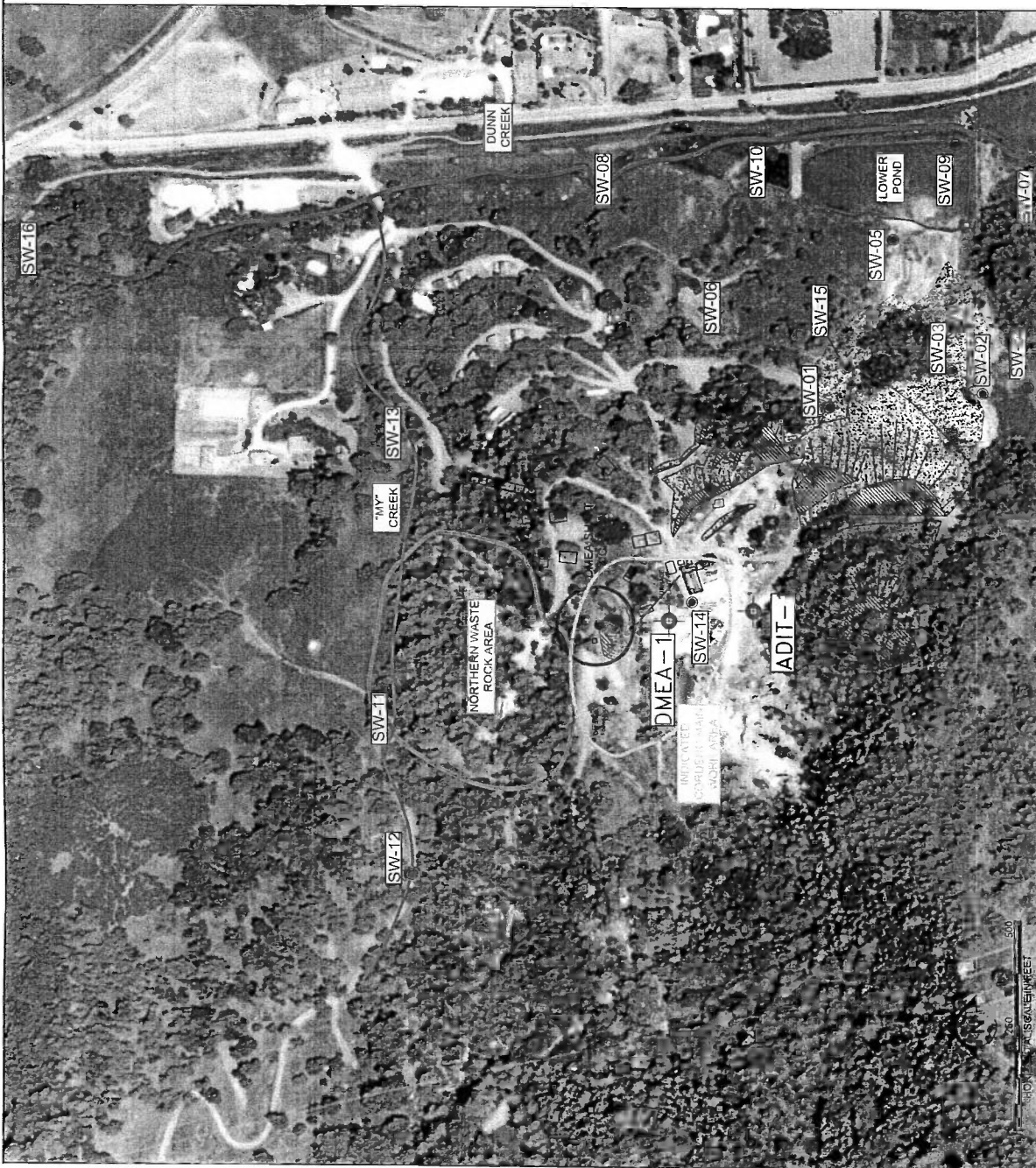


FIGURE
3-1

SGI THE SOURCE GROUP, INC.
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PLEASANT HILL, CA 94523

MT. DIABLO MERCURY MINE
CONTRA COSTA COUNTY, CALIFORNIA

PROJECT NO.	DATE	DRAWN BY:	APP BY:
01-SUN-055	09/13/11	KT	PDH



LEGEND

Mine Structure (1953)



Tailings/Waste Rock (Pre Cordero)



Waste Rock (DMEA/Cordero)



Surface Water Sample Location



Monitoring Well Location

SITE MAP WITH SURFACE WATER SAMPLING AND MONITORING WELL LOCATIONS

MT. DIABLO MERCURY MINE
CONTRA COSTA COUNTY, CALIFORNIA
(2004 AERIAL)

PROJECT NO.	DATE	DRAWN BY:	APP. BY:
01-SUN-055	8/13/11	JP	PH

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PLEASANT HILL, CA 94523

FIGURE 3-2

3 - 90 / 597

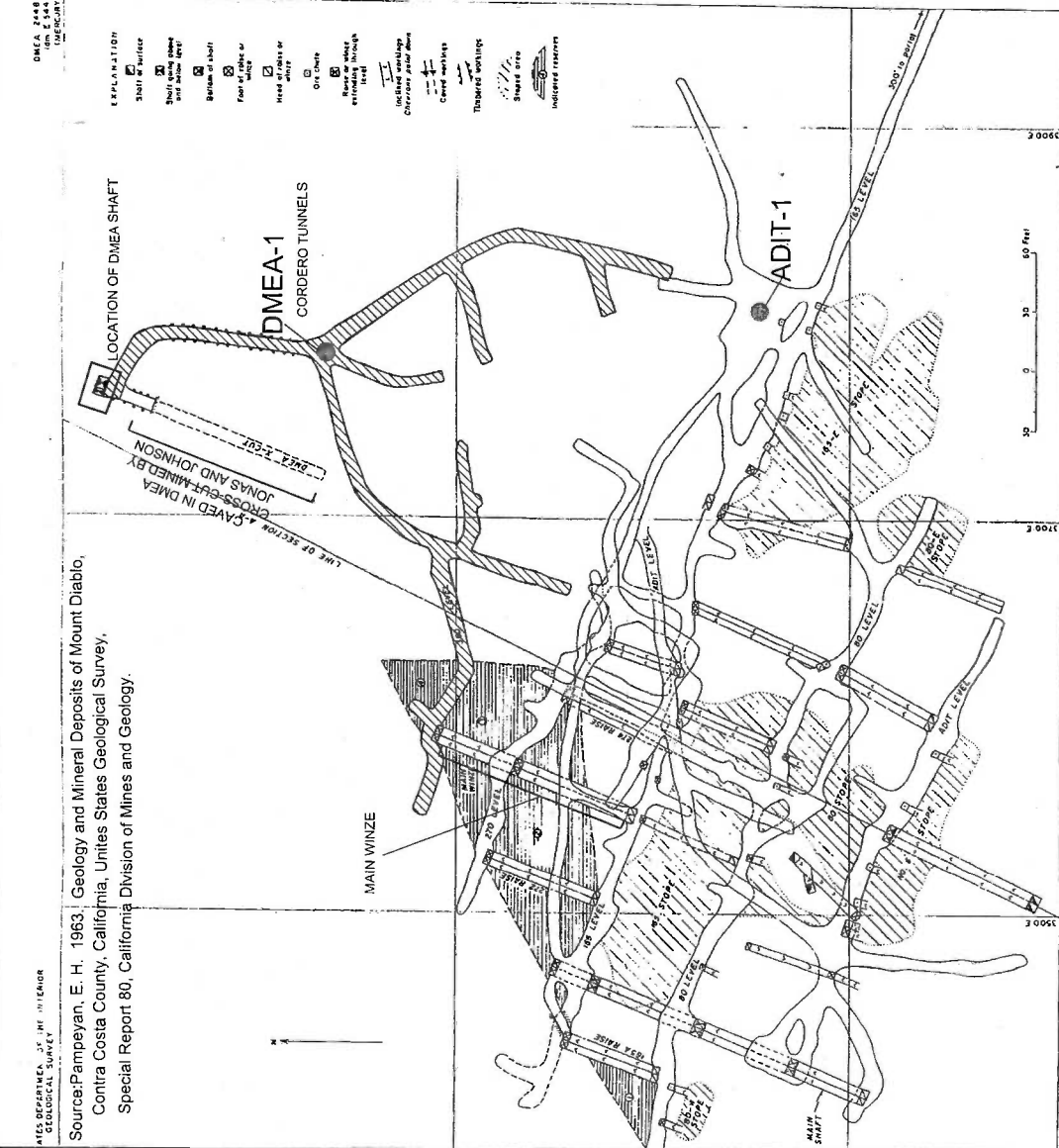


Figure 4 COMPOSITE MAP OF MILL WORKINGS, MT DIABLO MINE
CONTRA COSTA COUNTY, CALIFORNIA

MINES RESEARCH, CONSULTING AND ENGINEERING
GEOLOGICAL SURVEY

Source: Pampeyan, E. H. 1963. Geology and Mineral Deposits of Mount Diablo, Contra Costa County, California, United States Geological Survey, Special Report 80, California Division of Mines and Geology.

DMEA 2448
10m x 5.44
1:50,000

- EXPLANATION
- Shaft
 - ▨ Shaft with downcast
 - ▩ Shaft with upcast
 - ▧ Shaft with both
 - ▦ Shaft with both or
 - ▥ Shaft with both or
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LEGEND

Cordero Workings

ADIT-1

Monitoring Well Location

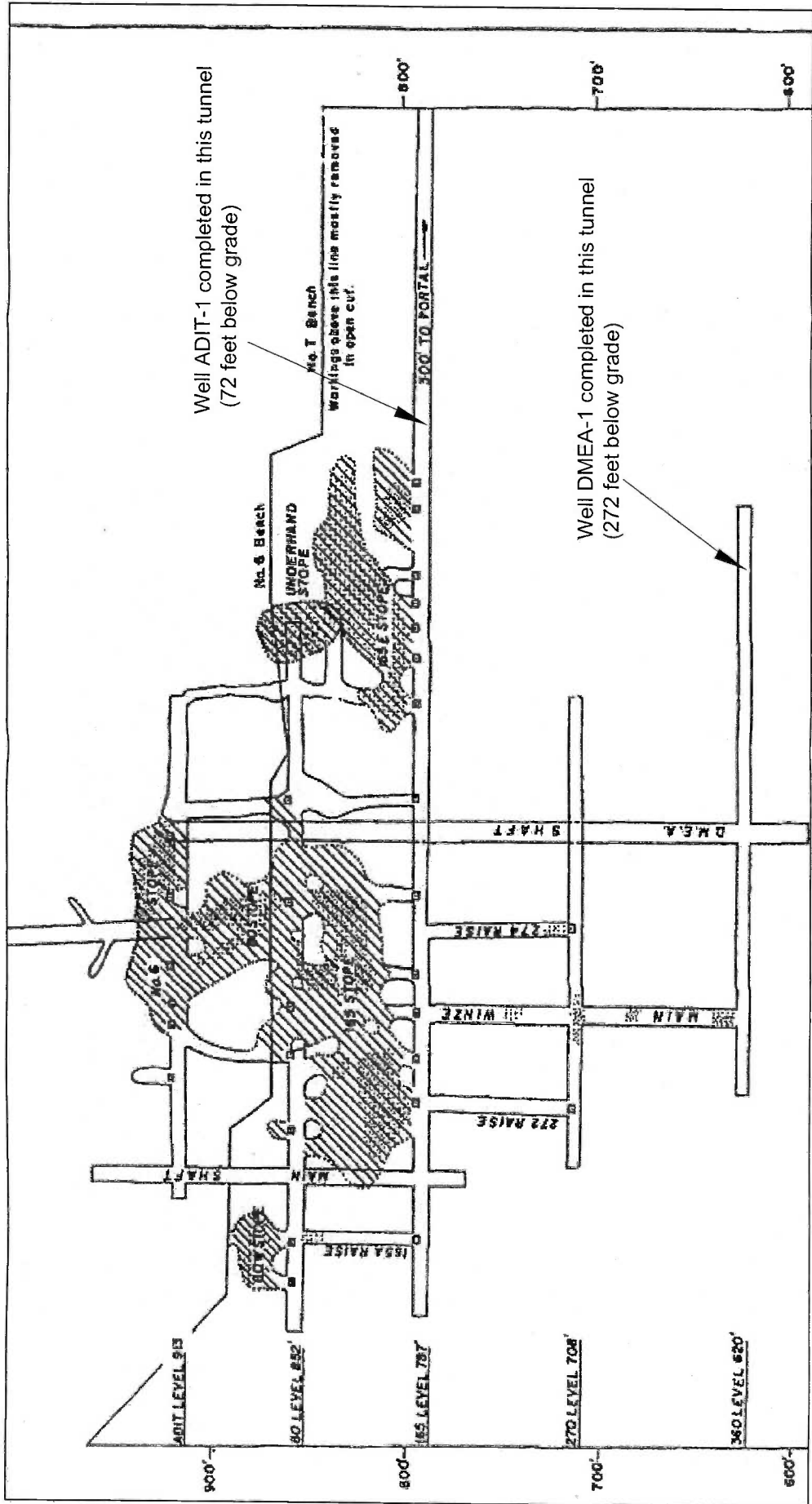
PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
01-SUN-050	07/16/09	JP	PH

HORIZONTAL SCALE IN FEET
0 60 120

**MONITORING WELL LOCATIONS WITH
CORDERO AND BRADLEY TUNNEL SYSTEMS**

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PLEASANT HILL, CA 94523

FIGURE:
3-3



Well ADIT-1 completed in this tunnel
(72 feet below grade)

Well D.M.E.A.-1 completed in this tunnel
(272 feet below grade)

PROJECT NO.		DATE	DRAWN BY:	APP. BY:
01-SUN-055		10/10/11	KT	PDH

CROSS SECTION OF TUNNEL SYSTEMS

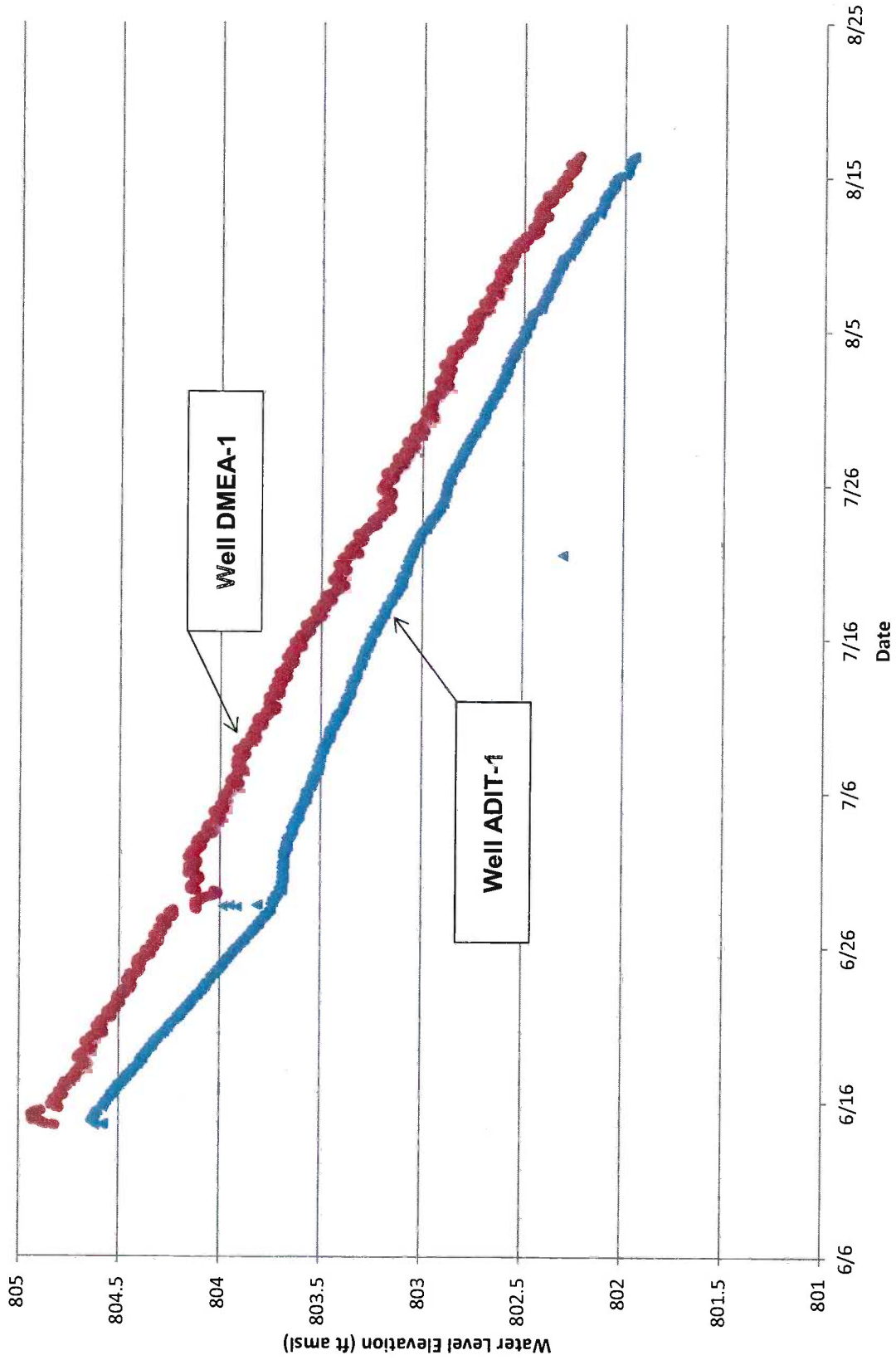
FIGURE:
3-4

HORIZONTAL SCALE IN FEET

THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

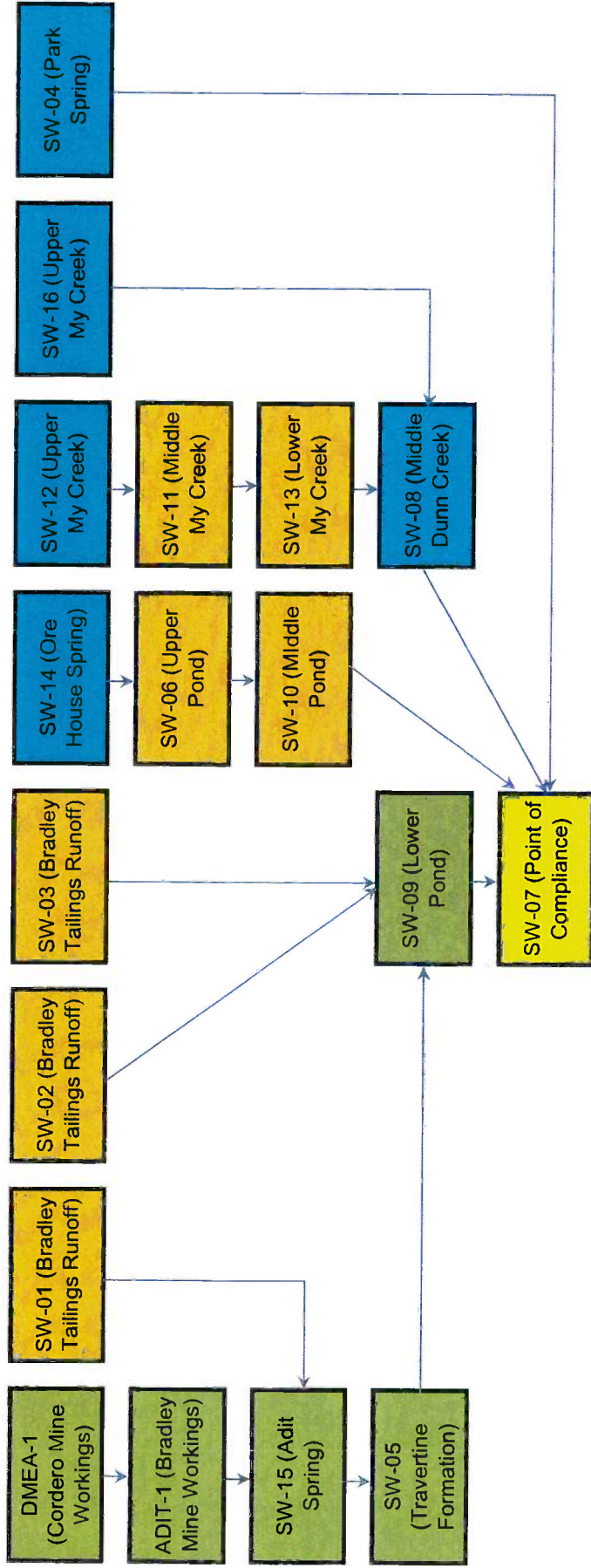
Source: Pampeyan, E. H., 1963. Geology and Mineral Deposits of Mount Diablo, Contra Costa County, California, United States Geological Survey, Special Report 80, California Division of Mines and Geology.

Figure 4-1
Mt Diablo Well Groundwater Elevations, 2011



▲ Adit Well ● DMEA Well

**Figure 4-2
Site Water Flow Pathway Schematic**



- Water Sourced From Underground Mine Workings
- Water Sourced From Precipitation Percolating Through Mine Tailings and Waste Rock
- Water Flows Not In Contact With Mine Tailings Or Waste Rock
- Point of Compliance Water

LEGEND

Mine Structure (1953)



Surface Water Sample Location



Monitoring Well Location



Hg
Mercury

<0.20 Analyte not detected at or above the laboratory reporting limit of 0.20 µg/L

NOTE

All concentrations reported in micrograms per liter (µg/L)

SURFACE WATER AND WELL SAMPLING RESULTS, MERCURY AND pH

MT. DIABLO MERCURY MINE
CONTRA COSTA COUNTY, CALIFORNIA
(2004 AERIAL)

PROJECT NO.	DATE	DRAWN BY:	APP BY:
01-SUM-080	5/19/10	JP	PH

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PLEASANT HILL, CA 94523

FIGURE
4-3

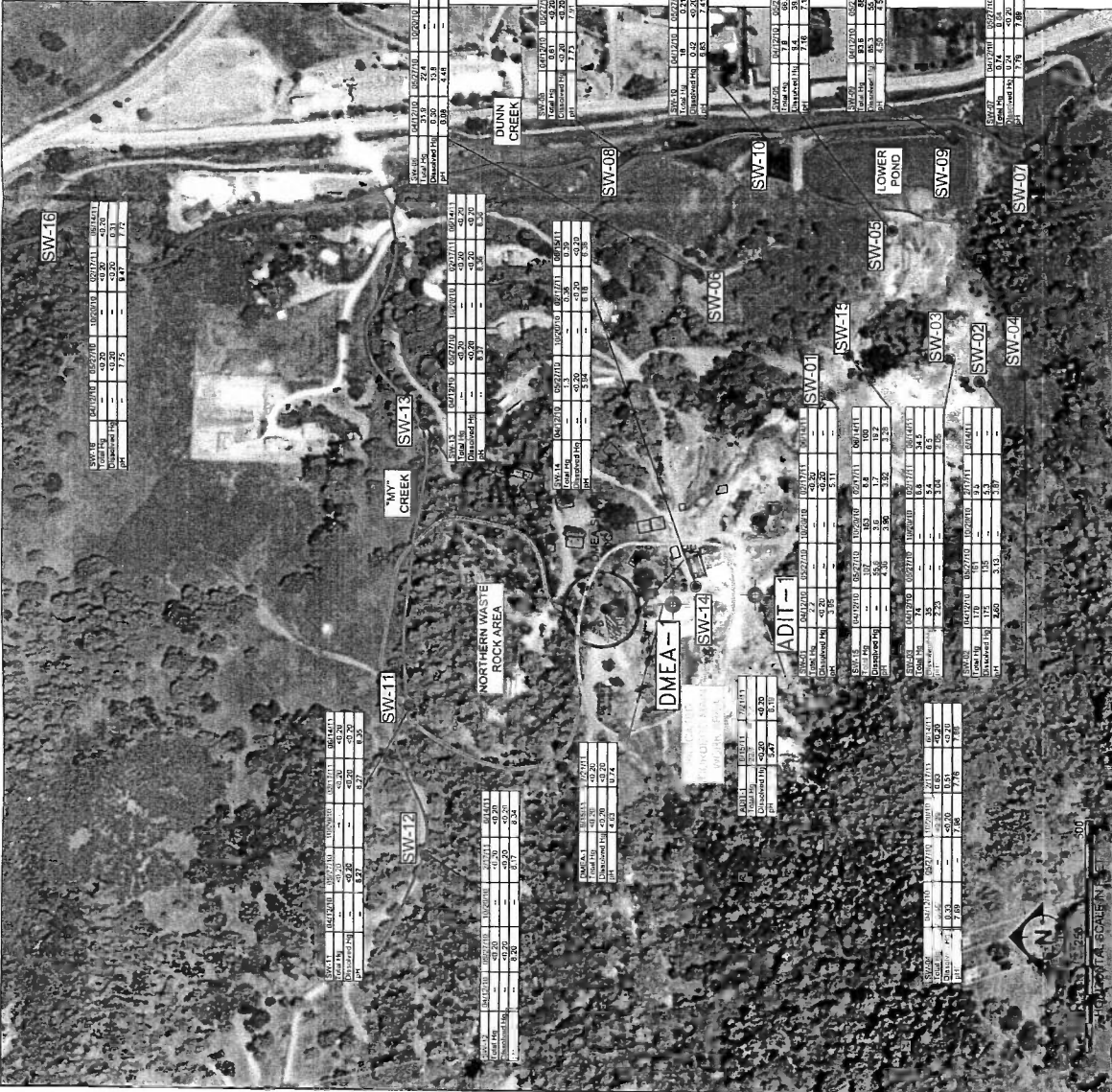
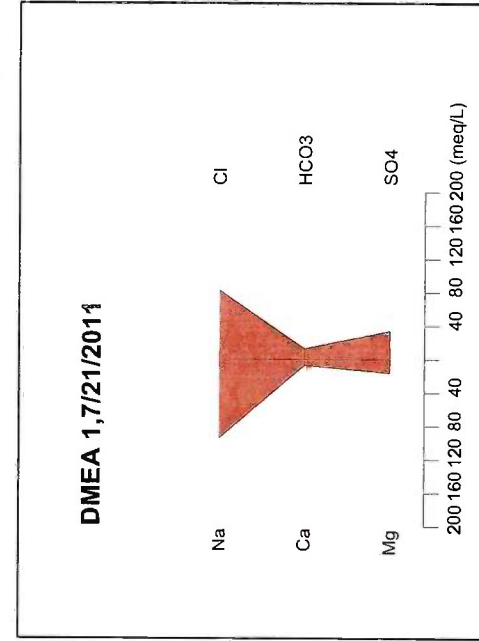
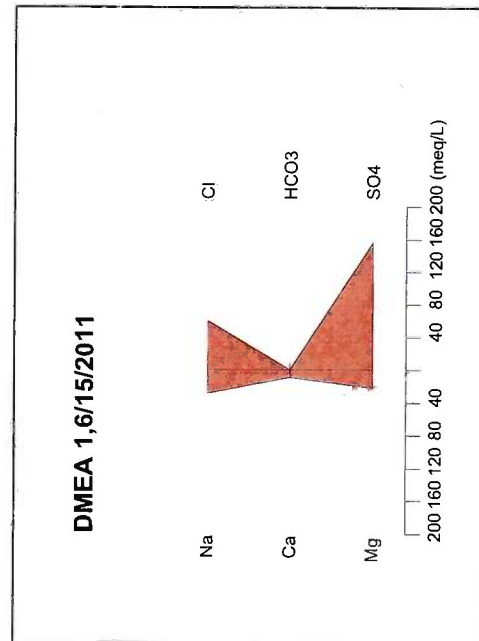
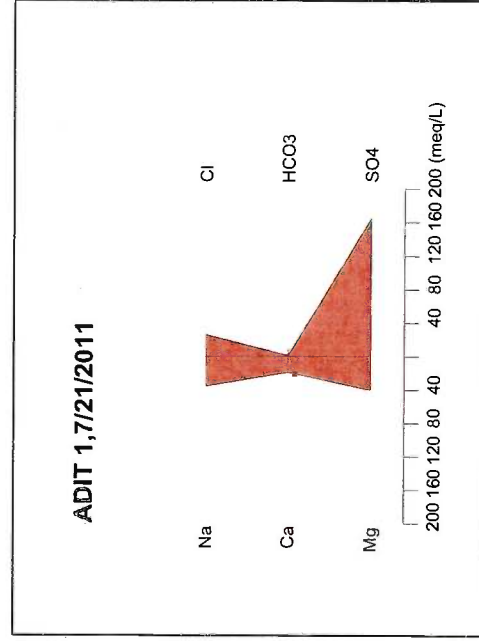
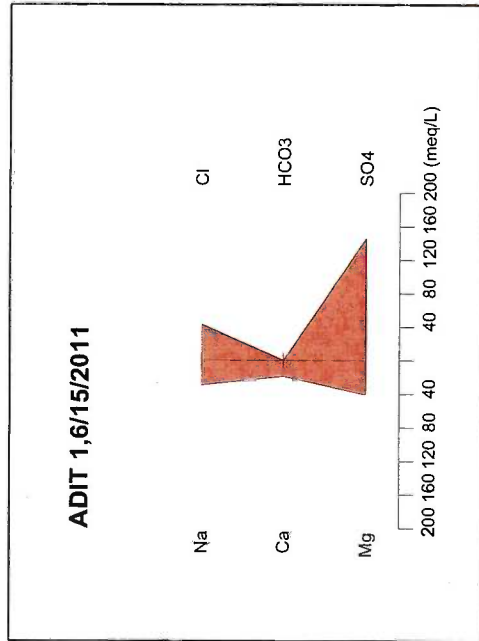


Figure 4-4
Monitoring Well Stiff Diagram Comparison



TABLES

TABLES

Table 2-1
Production Statistics
 Mount Diablo Mercury Mine
 Contra Costa County, California

PRODUCTION STATISTICS- MOUNT DIABLO MINE "MILL WORKINGS"						
Operator	Date	Cubic Yards of Ore Milled	Waste rock from tunnels, crosscuts, raises, shafts and stopes (cubic yards)	Dewater volume (acre-feet)	Mercury Produced, flasks	
Weich	1863	shaft and placer	NA	none	NA	
Unknown	1875-1877	NA	NA	NA	1000	
Mt. Diablo Quicksilver MC, operator Ericson	1930-1936	NA	NA	NA	739	
leased to Bradley MC	1936-1951	78,188 ⁽¹⁾	24,815 ⁽²⁾	161 ⁽³⁾	10,455	
leased Ronnie B. Smith	Sept 1951- June 1953	920 ⁽⁴⁾	NA	NA	125 ⁽⁵⁾	
DMEA and Smith	June 1953 - Jan 1954	none	630 ⁽⁶⁾	minor	none	
DMEA, Johnson and Jonas	Jan 1954 - Feb 1954	none	67 ⁽⁷⁾	NA	none	
leased to Cordero MC	Nov 1954 - Dec 1955	none	1,228 ⁽⁸⁾	19.5 ⁽⁹⁾	none	
leased to Nevada Scheelite Corp.	1956	none	see note ⁽¹⁰⁾	see note ⁽¹⁰⁾	none	
Total Cubic Yards of Material Taken Out			105,848 ⁽¹¹⁾			

Notes:

- ⁽¹⁾ Table 4, Ross 1958, reported 126,664 tons of ore milled. Converted here to cubic yards above based on conversion of 1.62 tons per cubic yard (cy)
- ⁽²⁾ Total length of workings 4,570 ft (Pampeyan 1963, p 25) x 5 feet x 7 feet x bulking factor plus 20% = 7,108 cy less (2) and (3). Included 550 ft of shafts and raises (935 cy) and stopes of 19,000 cy (Pampeyan, Plate 5).
- ⁽³⁾ Estimate 10 gpm for 10 years.
- ⁽⁴⁾ Used the ratio of ore milled to flasks produced for Bradley to estimate the amount of ore milled by Smith.
- ⁽⁵⁾ DMEA internal memo dated 2/4/57 ref doc no. 2-88/384
- ⁽⁶⁾ 300-ft DMEA shaft 4.5 ft x 8.5 ft (Ross 1958) plus 77 ft of tunnel at 5 ft x 7 ft on the 360 level w/ bulking factor of 20%
- ⁽⁷⁾ 43 ft of tunnel on the 360 level x 5 feet x 7 feet w/ bulking factor of 20%
- ⁽⁸⁾ 790 ft of crosscuts and drifts on the 360 level (Pampeyan, and Sheahan 1957) x 5 feet x 7 feet w/ bulking factor of 20%.
- ⁽⁹⁾ Best guess; 90 gpm for 27 days to dewater the mine (ref: DMEA payment records to Smith for same) and 200 days at 10 gpm.
- ⁽¹⁰⁾ In 1956 the Nevada Scheelite Company leased the mine and installed a deep-well pump 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 (Division of Mines, 1958).
- ⁽¹¹⁾ Sum of Ore Milled and Waste Rock

Table 2-2
Summary of 1995 Mercury Data Collected by Slotton
 Mount Diablo Mercury Mine
 Contra Costa County, California

Site	Flow (cfs)	Aqueous Total Mercury		Suspended Solids	
		Raw ($\mu\text{g/L}$)	Filtered ($\mu\text{g/L}$)	All (TSS) (mg/L)	Solids Hg (dry ppm)
Upper Dunn Creek	5.20	0.0036	0.00273	1.50	0.60
Upper Horse Creek	0.08	0.0255	0.016	1.10	8.64
"My" Creek	2.10	0.381	0.0284	10.90	32.41
OreHouse Spring	0.01	1.94	0.071	11.40	164.00
Trickle coming from tailings	0.03	58.4	54.1	77.20	56.37
South Pond outlet	0.05	59.1	59.1	26.10	0.00
Horse Creek at tailings	0.32	25	21.9	104.00	29.80
Dunn Creek below mine confluence	7.80	0.949	0.226	13.50	53.60

Notes:

Data from study and report by Slotton et.al. (2006).

cfs = cubic feet per second.

$\mu\text{g/L}$ = micrograms per liter.

mg/L = milligrams per liter.

ppm = parts per million.

Table 3-1
2010/2011 Surface Water Sample Location Key
 Mount Diablo Mercury Mine
 Contra Costa County, California

Samples	Type	Location Description
SW-01	Precipitation Runoff	Precipitation runoff from Bradley tailings/waste rock piles
SW-02	Precipitation Runoff	Precipitation runoff from Bradley tailings/waste rock piles
SW-03	Precipitation Runoff	Precipitation runoff from Bradley tailings/waste rock piles
SW-04	Spring	Park Spring
SW-05	Surface Flow	Overland flow between Adit Spring and Lower Pond
SW-06	Surface Flow	Upper Pond
SW-07	Surface Flow	Dunn Creek downstream of Site (Point of Compliance Sampling Location)
SW-08	Surface Flow	Dunn Creek upstream of ponds, downstream of confluence with My Creek
SW-09	Surface Flow	Lower Pond
SW-10	Surface Flow	Middle Pond
SW-11	Surface Flow	My Creek adjacent to the Northern Waste Rock Area
SW-12	Surface Flow	Watershed runoff in My Creek upgradient of the Site (Background)
SW-13	Surface Flow	My Creek downstream of the Northern Waste Rock Area
SW-14	Spring	Ore House Spring
SW-15	Spring	Adit Spring (water effluent point from Bradley workings)
SW-16	Surface Flow	Watershed runoff in Dunn Creek upgradient of the Site (Background)

Table 3.2
 Summary of Chemical Analyses Results
 2010/2011 Surface Water Sampling
 Mount Diablo Mercury Mine
 Contra Costa County, California

Parameter	Unit	Date	Water Quality Criteria*										Sample Location										Downstream	
			Freshwater		Human Health for Consumption of Organism Only		Background		Springs		My Creek Runoff		Ponds		Surface Water Runoff				Dunn Creek					
			SW-12	SW-16	SW-04	SW-14	SW-15	Pond	Weir	SW-08	SW-09	SW-10	SW-01	SW-02	SW-03	SW-05	SW-07							
Mercury, Total (Hg)	µg/L	4/12/2010	0.91	0.05	0.051	0.45	1.3	107	107	107	31.9	93.6	18	7.4	7.9	0.74								
		5/27/2010	<0.20	<0.20	<0.20	<0.20	1.3	153	153	153	22.4	88	0.21	--	66.3	0.64								
		10/20/2010	<0.20	<0.20	<0.20	0.63	0.36	8.8	8.8	8.8	3.0	59.5	0.70	6.6	41.6	<0.20								
		2/17/2011	<0.20	<0.20	<0.20	0.39	100	<0.20	<0.20	<0.20	4.8	72.7	<0.20	34.5	109	<0.20								
Mercury, Dissolved (Hg)	µg/L	4/12/2010	0.77	0.05	0.051	0.33	<0.20	55.6	<0.20	0.30	65.3	0.42	35	3.4	0.24									
		5/27/2010	<0.20	<0.20	<0.20	<0.20	3.6	143	143	143	13.8	55.1	<0.20	--	39.7	<0.20								
		10/20/2010	<0.20	<0.20	<0.20	0.51	1.7	<0.20	<0.20	<0.20	0.32	54.0	0.59	5.3	35.4	<0.20								
		2/17/2011	<0.20	<0.20	<0.20	0.31	19.2	<0.20	<0.20	<0.20	3.5	36.8	<0.20	6.5	33.1	<0.20								
Methyl Mercury	ng/L	4/12/2010	3 ^b	0.3 mg/kg (fish tissue)	0.3 mg/kg (fish tissue)	0.328	1.16	4.86	0.504	0.350	0.523	0.480	0.081	0.976	1.04	0.736								
		5/27/2010	0.104	0.0766	0.0766	0.0815	1.57	0.721	0.721	0.721	0.233	0.657	7.26	2.84	3.29	1.47								
		10/20/2010	0.38	0.98	0.31	2.70	0.90	0.70	0.30	2.5	1.4	0.87	0.65	0.86	1.6	4.0	1.3							
		2/17/2011	0.13	0.11	0.62	4.1	5.7	1.3	0.36	0.96	0.56	0.48	1.70	0.26	0.96	0.69								
pH	su	4/12/2010	6.5 - 9.0	--	--	7.69	--	--	--	7.73	6.08	4.50	6.83	3.95	2.60	7.16	7.79							
		5/27/2010	8.20	7.75	--	5.94	4.36	8.27	8.37	7.91	4.48	6.32	7.41	3.13	3.13	7.16	7.69							
		10/20/2010	7.98	--	--	3.90	--	--	--	--	--	8.33	--	--	--	7.96	7.27							
		2/17/2011	8.17	7.76	6.78	3.92	8.27	8.36	7.55	5.13	3.93	7.71	3.87	5.11	3.87	7.04	7.57							
Alkalinity, Bicarbonate	mg/L	4/12/2010	--	--	--	111	39.8	227	229	169	<5.0	<5.0	248	--	<5.0	127	77.4							
		5/27/2010	223	139	932	932	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	187							
		10/20/2010	216	56.9	406	56.0	<5.0	220	216	54.0	<5.0	<5.0	82.0	<5.0	<5.0	44.0	62.0							
		2/17/2011	854	182	1,040	120	<5.0	848	247	218	<5.0	<5.0	212	<5.0	<5.0	274	218							
Alkalinity, Carbonate (CO3)	mg/L	4/12/2010	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0							
		5/27/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0								
		10/20/2010	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0								
		2/17/2011	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0								
Alkalinity, Total as CaCO3	mg/L	4/12/2010	20	--	--	111	40	227	233	169	<5.0	<5.0	248	--	<5.0	127	77							
		5/27/2010	223	139	932	932	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	187								
		10/20/2010	216	56.9	406	56.0	<5.0	220	216	54.0	<5.0	<5.0	82.0	<5.0	<5.0	44.0								
		2/17/2011	854	182	1,040	120	<5.0	848	247	218	<5.0	<5.0	212	<5.0	<5.0	274								
Fluoride	mg/L	4/12/2010	--	--	--	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10							
		5/27/2010	<0.10	<0.10	<0.10	2.8	<0.10	1.2	<0.10	0.11	0.13	<0.25	0.12	0.13	<0.10	0.13	0.11							
		10/20/2010	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10							
		2/17/2011	0.14	<0.10	<0.10	8.3	0.18	<0.50	0.13	0.15	<0.10	0.22	<0.50	0.14	4.2	<0.50	0.11							
Dissolved Organic Carbon	mg/L	4/12/2010	--	--	--	8.3	--	--	--	8.9	4.5	25.7	4.8	2.4	4.9	7.6	8.3							
		5/27/2010	2.6	4.2	--	5.1	3.7	11.3	2.4	4.1	6.1	2.7	5.2	9.2	5.8	4.3								
		10/20/2010	2.8	11.6	5.2	4.2	9.2	2.8	3.3	9.8	6.0	2.5	6.1	5.9	3.4	6.5								
		2/17/2011	1.4	2.2	3.3	3.4	3.9	1.7	1.8	2.6	5.3	1.7	6.3	2.2	2.0	9.5								
Specific Conductivity	µmhos/cm	4/12/2010	--	--	--	468	--	--	--	212	8,050	422	341	5,160	9,170	17,000	2,640							
		5/27/2010	494	335	19,100	11,400	414	494	526	414	2,430	9,810	711	3,860	14,200	774								
		10/20/2010	485	216	6,350	12,100	450	485	499	205	8,800	30,100	1,080	289	17,400	22,200								
		2/17/2011	550	444	16,200	537	9,360	543	582	588	2,380	8,950	1,400	404	2,300	364								

Table 3-2
 Summary of Chemical Analyses Results
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 Mount Diablo Mercury Mine
 Contra Costa County, California

Parameter	Unit	Date	Water Quality Criteria												Sample Location											
			Freshwater		Human Health for Consumption Only		Background		Springs		My Creek Runoff		Mid-Dunn Creek		Ponds		Middle		Bradley Tailings Piles		Adit Spring		Downstream			
			SW-12	SW-16	Dunn Creek	Park	One House	Adit	Pond	Weir	SW-08	SW-06	Upper	Lower	SW-10	SW-01	SW-02	SW-03	SW-05	SW-07						
Solids, Total Dissolved (TDS)	mg/L	4/12/2010	250	--	--	291	--	276	9,110	--	273	301	199	242	6,120	287	224	4,450	16,000	6,790	210					
		5/27/2010	--	190	--	12,200	--	276	11,100	--	273	301	231	2,000	2,000	7,800	447	--	3,060	--	9,980	465				
		10/20/2010	--	--	--	11,100	--	276	11,100	--	273	301	231	2,000	2,000	20,700	447	--	--	--	11,900	14,700				
		2/17/2011	281	173	4,090	292	374	267	274	6,630	270	270	205	611	6,330	714	1,070	1,590	250	111	26,500	12,100	1,750			
Turbidity	NTU	4/12/2010	--	--	49	49	5.6	2,660	--	2.7	3.0	27	1.0	1.0	1.4	1.25	1.3	7.7	84	127	178					
		5/27/2010	1.5	46	--	4.820	--	5.6	4,820	--	3.0	3.0	27	1.0	1.4	1.25	1.3	7.7	84	127	178					
		10/20/2010	9.4	281	2.6	7.2	97.5	6.1	5.6	293	94.8	186	32	94.8	186	6.9	6.4	28.7	8.7	9.2	229					
		2/17/2011	1.9	1.6	5.2	6.8	11.3	5.3	3.5	1.5	12.3	13.5	4.7	12.3	13.5	4.7	12.3	13.5	4.7	12.3	13.5	4.7				
Hardness, Total as CaCO3	mg/L	4/12/2010	--	148	148	148	141	3,230	--	231	240	106	151	2,340	151	103	1,170	2,010	2,770	106						
		5/27/2010	223	153	3,620	3,620	3,870	163	230	231	155	355	2,230	368	305	515	199	839	143	6,340	6,340					
		10/20/2010	225	112	1,210	167	163	230	231	155	355	2,230	368	305	515	199	839	143	6,340	6,340						
		2/17/2011	237	191	2,620	199	2,850	232	292	252	964	2,640	547	--	3,830	3,950	735	--	--	--	--					
Silica, Dissolved (SiO2)	mg/L	4/12/2010	--	17.4	32.3	82.4	16.7	16.5	14.2	55	35.3	17	29.1	27.4	12.7	12.7	12.7	12.7	12.7	12.7						
		5/27/2010	16.7	17.4	32.3	82.4	16.7	16.5	14.2	55	35.3	17	29.1	27.4	12.7	12.7	12.7	12.7	12.7	12.7						
		10/20/2010	19.9	106	25.9	35.1	45.8	16.1	15.3	40.0	22.7	19.5	17.3	51.3	51.3	113	60.3	60.3	60.3	60.3						
		2/17/2011	19.3	14.2	65.5	34.4	41.7	19.3	20.5	14.8	65.5	41.7	11.9	--	--	--	--	--	--	--						
Chloride (Cl)	mg/L	4/12/2010	230	--	35.3	14.8	1570	9.7	10.2	10.8	4.5	8.8	1.220	18.7	1.1	168	53.3	1,490	6.5							
		5/27/2010	9.6	6.2	2,890	11.6	41.1	9.4	10.5	6.1	4.980	--	--	--	--	--	--	--	--							
		10/20/2010	9.7	4.5	1,180	11.6	41.1	9.4	10.5	6.1	4.980	--	--	--	--	--	--	--	--							
		2/17/2011	15.4	12.2	2,970	20.3	1,010	16.5	16.1	23.1	130	1,310	96	72.6	2,620	335	--	--	--							
Bromide (Br)	mg/L	4/12/2010	--	4.7	10.5	10.5	4.3	17.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6							
		5/27/2010	4.7	10.5	10.5	4.3	17.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6							
		10/20/2010	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20						
		2/17/2011	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20						
Nitrogen, Nitrate (NO3)	mg/L	4/12/2010	--	0.10	0.23	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7							
		5/27/2010	0.10	0.23	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7							
		10/20/2010	<0.10	1.2	10.9	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10							
		2/17/2011	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10							
Sulfate (SO4)	mg/L	4/12/2010	--	68.3	136	5,340	31.4	39.2	32.4	1.610	6,620	146	191	4,570	13,400	3,040	18.4									
		5/27/2010	28.5	19.3	3,170	6,170	--	--	--	--	--	--	--	--	--	--	--	--								
		10/20/2010	27.6	6.7	1,240	133	248	30.4	37.7	11.7	346	3,260	312	159	86.8	1,020	767	63.3								
		2/17/2011	39.8	27.6	3,050	166	4,320	39.4	49.5	54.2	1,750	3,310	381	--	--	--	--	--								
Antimony (Sb)	µg/L	4/12/2010	--	<10	<10	62	<10	10.4	<10	<10	<10	<10	<10	<10	<10	<10	<10									
		5/27/2010	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									
		10/20/2010	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									
		2/17/2011	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									
Arsenic (As)	µg/L	4/12/2010	150	<10	<10	182	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									
		5/27/2010	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									
		10/20/2010	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									
		2/17/2011	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10									

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 Summary of Chemical Analyses Results
 2010/2011 Surface Water Sampling
 Mount Diablo Mercury Mine
 Contra Costa County, California

Parameter	Unit	Date	Water Quality Criteria*										Sample Location										
			Freshwater		Human Health for Consumption of Water + Organism Only		Background		Springs		My Creek Runoff		Mid-Dunn Creek		Ponds		Surface Water Runoff		Downstream				
			My Creek	Dunn Creek	Water + Organism Only	Water + Organism Only	My Creek	Dunn Creek	One House	Park	Adit	Pond	Weir	My Creek	Mid-Dunn Creek	Upper	Lower	Middle	Bradley Tailings Piles	Adit Spring	Dunn Creek		
			SW-12	SW-16	SW-17	SW-18	SW-19	SW-20	SW-14	SW-04	SW-15	SW-11	SW-13	SW-08	SW-06	SW-09	SW-10	SW-01	SW-02	SW-03	SW-06	SW-07	
Beryllium (Be)	µg/L	4/12/2010	<5.0	<5.0			<5.0	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		5/27/2010	<5.0	<5.0			<5.0	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		10/20/2010	<5.0	<5.0			<5.0	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		2/17/2011	<5.0	<5.0			<5.0	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Boron (B)	µg/L	4/12/2010	<5.0	<5.0			<5.0	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
		5/27/2010	941	171			781	98,900	971	953		226	712	73,900	1,350	1,920	72	13,900	2,660	98,700	304	3,120	10,200
		10/20/2010	<200	<200			806	66,300	1,000	964		913	2,640	75,200	4,870	108	505	20,900	1,020	20,900	1,020	20,900	1,020
		2/17/2011	1,190	268			849	65,000	1,220	1,270		978	9,790	79,000	6,460		4,590	170,000	20,000	170,000	20,000	170,000	20,000
Cadmium (Cd)	µg/L	4/12/2010	<2.0	<2.0			<2.0	<2.0				<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
		5/27/2010	<2.0	<2.0			<2.0	<2.0				<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
		10/20/2010	<2.0	<2.0			<2.0	<2.0				<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
		2/17/2011	<2.0	<2.0			<2.0	<2.0				<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Calcium (Ca)	µg/L	4/12/2010																					
		5/27/2010	47,100	38,200			22,800	357,000	48,300	49,700		21,700	18,800	319,000	20,200	18,700	130,000	124,000	449,000	22,100	549,000	52,000	
		10/20/2010	20,000	20,000			27,700	372,000	48,300	48,000		24,800	43,200	273,000	53,900	51,900	10,900	16,300	207,000	25,600	792,000	401,000	
		2/17/2011	49,500	48,400			36,600	312,000	47,100	52,800		54,700	114,000	368,000	85,900	85,900	239,000	614,000	115,000	115,000	115,000	115,000	
Chromium (Cr)	µg/L	4/12/2010																					
		5/27/2010	<5.0	<5.0			<5.0	240	<5.0	<5.0		31	53	26	25	12	770	2,190	11	11	22	22	
		10/20/2010	<5.0	<5.0			<5.0	91	<5.0	<5.0			<5.0	19	<5.0		309		28	28	<5.0	<5.0	
		2/17/2011	<5.0	<5.0			<5.0	186	<5.0	<5.0		107	34.8	44.5	<5.0	188	132	364	266	266	28.5	<5.0	
Copper (Cu)	µg/L	4/12/2010																					
		5/27/2010	<5.0	5.1			6.4	101	<5.0	<5.0		33.6	33	50	15.6	12	235	632	21.6	21.6	22.8	22.8	
		10/20/2010	<5.0	78.5			<5.0	66.5	<5.0	<5.0			<5.0	34.2	43.2	94.3	94.3	27.6	27.6	<5.0	<5.0		
		2/17/2011	<5.0	<5.0			<5.0	36.4	<5.0	<5.0		129	26.0	36.2	<5.0	156	45.8	95.7	88.7	88.7	34.8	<5.0	
Iron (Fe)	µg/L	4/12/2010																					
		5/27/2010	<5.0	2,260			987	411,000	70	89.4		19,500	22,800	13,400	9,830	2,140	392,000	1,600,000	18,300	18,300	13,200	13,200	
		10/20/2010	<200	42,900			679	73,600	321	304		75,200	12,100	21,700	1,140	116,000	53,900	189,000	235,000	235,000	22,400	22,400	
		2/17/2011	<200	<200			1,130	257,000	595	<200		<200	3,460	17,300	2,060	2,060	3,330,000	103,000	103,000	103,000	1,050	1,050	
Lead (Pb)	µg/L	4/12/2010																					
		5/27/2010	<5.0	<5.0			<5.0	13.4	<5.0	<5.0		5.8	8.8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
		10/20/2010	<5.0	<5.0			<5.0	<5.0	<5.0	<5.0			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
		2/17/2011	<5.0	<5.0			<5.0	<5.0	<5.0	<5.0		26.7	<5.0	<5.0	<5.0	46.5	46.5	16.5	16.5	16.5	16.5	<5.0	
Magnesium (Mg)	µg/L	4/12/2010																					
		5/27/2010	25,700	19,900			20,400	567,000	26,900	28,200		12,500	25,300	374,000	24,500	13,700	205,000	414,000	400,000	400,000	12,300	12,300	
		10/20/2010	15,000	15,000			23,800	203,000	25,700	26,500		22,600	59,900	377,000	56,700	56,700	37,000	38,500	38,500	1,060,000	1,060,000	1,300,000	1,300,000
		2/17/2011	27,600	17,100			26,100	450,000	27,700	31,600		28,100	165,000	408,000	80,800	80,800	42,600	42,600	78,200	78,200	78,200	19,100	19,100
Manganese (Mn)	µg/L	4/12/2010																					
		5/27/2010	<5.0	90			194	16,000	12	5.8		71	3,410	6,950	623	3,410	3,410	3,410	6,240	6,240	280	280	
		10/20/2010	<5.0	94			24,100	94	12	12		14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	
		2/17/2011	19.6	1,150			151	921	12.7	14.8		2,030	1,190	5,640	434	2,910	262	262	1,170	1,170	694	694	

Table 3-3
Monitoring Well Construction Details
 Mount Diablo Mercury Mine
 Contra Costa County, California

Well	Construction Date	Development Date	Survey Data ¹			Construction Details ²		
			Northing	Easting	Top of Casing Elevation	Total Depth	Screen Interval	Top of Filter Pack
DMEA-1	5/6/2011	5/24/2011	2153804.33	6164062.04	331.50	275	240-265	NA
ADIT-1	5/5/2011	5/24/2011	2153602.60	6164086.06	332.02	85	65-80	56

Notes:

Wells were constructed of 4 - inch schedule 40 (ADIT-1) or schedule 80 (DMEA-1) PVC.

1 Elevations are in feet above mean sea level (msl).

2 Depths in feet below ground surface (bgs).

Table 3-4
Summary of Chemical Analyses Results-Monitoring Well Sampling
 Mt. Diablo Mercury Mine
 Contra Costa County, California

		Well ID	Water Quality Criteria ^a			ADIT-1	DMEA-1
			Freshwater	Human Health for Consumption of			
				Water + Organism	Organism Only		
Mercury_total (Hg)	ug/l	6/15/2011	0.91	0.05	0.051	22.7	<0.20
		7/21/2011				7.4	<0.20
Mercury_Dissolved (Hg)	ug/l	6/15/2011	0.77	0.05	0.051	<0.20	<0.20
		7/21/2011				<0.20	<0.20
Methyl Mercury	ng/l	6/15/2011	3 ^b	0.3 mg/kg (fish tissue)	0.3 mg/kg (fish tissue)	0.35	<0.05
		7/21/2011				0.70	<0.05
pH	su	6/15/2011	6.5 - 9.0	5.0 - 9.0	--	5.47	4.63
		7/21/2011				6.19	6.74
Alkalinity, Bicarbonate	mg/l	6/15/2011	--	--	--	<5.0	<5.0
		7/21/2011				64.0	776
Alkalinity, Carbonate (CO3)	mg/l	6/15/2011	--	--	--	<5.0	<5.0
		7/21/2011				<5.0	<5.0
Alkalinity, Total as CaCO3	mg/l	6/15/2011	20	--	--	<5.0	<5.0
		7/21/2011				64.0	776
Fluoride	mg/l	6/15/2011	--	--	--	1.4	0.81
		7/21/2011				0.76	0.76
Dissolved Organic Carbon	mg/l	6/15/2011	--	--	--	2.8	1.4
		7/21/2011				2.4	1.4
Specific Conductivity	umhos/cm	6/15/2011	--	--	--	11,600	13,500
		7/21/2011				13,500	13,600
Solids, Total Dissolved (TDS)	mg/l	6/15/2011	250	--	--	12,600	9,960
		7/21/2011				12,700	8,320
Turbidity	NTU	6/15/2011	--	--	--	108	36.4
		7/21/2011				95.5	76.5
Hardness, Total as CaCO3	mg/l	6/15/2011	--	--	--	3,000	1,550
		7/21/2011				2,950	1,930
Silica, Dissolved (SiO2)	mg/l	6/15/2011	--	--	--	237	11
		7/21/2011				13.0	39.1
Chloride (Cl)	mg/l	6/15/2011	230	--	--	1,530	2,130
		7/21/2011				912	2,920
Bromide (Br)	mg/l	6/15/2011	--	--	--	2.4	7.5
		7/21/2011				3.3	10
Nitrogen, Nitrate (NO3)	mg/l	6/15/2011	--	10	--	<0.50	<0.50
		7/21/2011				<0.50	<0.50
Sulfate (SO4)	mg/l	6/15/2011	--	--	--	6,990	7,490
		7/21/2011				7,920	1,620
Antimony (Sb)	ug/l	6/15/2011	--	5.6	640	206	<12
		7/21/2011				<30	<18
Arsenic (As)	ug/l	6/15/2011	150	0.018	0.14	1,720	1,570
		7/21/2011				1,440	416
Dissolved Arsenic (As)	ug/l	6/15/2011	150	0.018	0.14	457	387
		7/21/2011				312	29.2
Beryllium (Be)	ug/l	6/15/2011	--	--	--	<25	<10
		7/21/2011				<25	<15
Boron (B)	ug/l	6/15/2011	--	--	--	89,000	143,000
		7/21/2011				99,200	169,000
Cadmium (Cd)	ug/l	6/15/2011	0.25	--	--	<40	<100
		7/21/2011				<10	33.7

Table 3-4
Summary of Chemical Analyses Results-Monitoring Well Sampling
 Mt. Diablo Mercury Mine
 Contra Costa County, California

		Well ID	Water Quality Criteria ^a			ADIT-1	DMEA-1
			Freshwater	Human Health for Consumption of			
				Water + Organism	Organism Only		
Calcium (Ca)	ug/l	6/15/2011	--	--	--	385,000	180,000
		7/21/2011				380,000	141,000
Chromium (Cr)	ug/l	6/15/2011	74	--	--	619	611
		7/21/2011				139	149
Copper (Cu)	ug/l	6/15/2011	--	1300	--	<50	<100
		7/21/2011				<100	<30
Iron (Fe)	ug/l	6/15/2011	1000	--	--	2,000,000	1,990,000
		7/21/2011				1,780,000	265,000
Lead (Pb)	ug/l	6/15/2011	2.5	--	--	<50	40.7
		7/21/2011				<50	30.4
Magnesium (Mg)	ug/l	6/15/2011	--	--	--	496,000	267,000
		7/21/2011				487,000	196,000
Manganese (Mn)	ug/l	6/15/2011	--	--	100	17,000	18,200
		7/21/2011				15,700	2,940
Nickel (Ni)	ug/l	6/15/2011	52	610	4600	33,000	31,300
		7/21/2011				23,600	9,640
Potassium (K)	ug/l	6/15/2011	--	--	--	<50,000	44,300
		7/21/2011				50,800	89,200
Selenium (Se)	ug/l	6/15/2011	5.0	170	4200	<50	<100
		7/21/2011				<50	<30
Silicon (Si)	ug/l	6/15/2011	--	--	--	5,690	5,150
		7/21/2011				6,100	6,090
Silver (Ag)	ug/l	6/15/2011	--	--	--	<100	<250
		7/21/2011				<130	<15
Sodium (Na)	ug/l	6/15/2011	--	--	--	677,000	662,000
		7/21/2011				814,000	2,170,000
Thallium (Tl)	ug/l	6/15/2011	--	0.24	0.47	<50	<20
		7/21/2011				<50	<30
Zinc (Zn)	ug/l	6/15/2011	120	7400	26000	680	1430
		7/21/2011				447	303

Notes:

^a Values represent the lesser of the water quality criteria available from CRWQCB (2008b) and USEPA (2009).

^b Value from CRWQCB – San Francisco Bay water quality criteria for methyl mercury in freshwater (CRWQCB, 2008a).

Values were not available from CRWQCB (2008b) and USEPA (2009).

µg/L = microgram per liter.

µmho/cm = micromhos per centimeter.

su = standard units

NTU = nephelometric turbidity unit.

ng/L = nanogram per liter.

mg/L = milligram per liter.

References:

CRWQCB. 2008a. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final. May.

CRWQCB. 2008b. Central Valley Regional Water Quality Control Board, A Compilation of Water Quality Goals. July.

USEPA. 2009. National Recommended Water Quality Criteria. Office of Water. Office of Science and Technology.

APPENDIX A

APPENDIX A

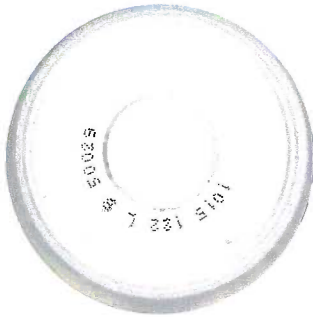
LABORATORY ANALYTICAL REPORTS

(PROVIDED IN ELECTRONIC FORMAT)

ADDITIONAL CHARACTERIZATION REPORT

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

December 7, 2011



APPENDIX B

APPENDIX B

BORING/WELL LOGS



THE SOURCE GROUP, INC.

BORING/WELL ID:
ADIT-1

PROJECT NAME AND ADDRESS:	Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA	Project No.:	01-SUN-055
BORING LOCATION (AT SITE):		Logged By:	Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	Boart Longyear		
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE:	N/A
START DATE:	5/5/11	FINISH DATE:	5/6/11
FIRST WATER (BGS):	65'	STABILIZED WATER LEVEL:	65'
SURFACE ELEVATION:		CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):	85'	BORING DIAMETER/DEPTH:	8" - 85'

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
			100	0		Weathered muddy sand, grey with red mottling.	
			100	2		Mixture of sand, silt, gravel, clay; dry.	
			100	4			
			100	6			
			100	8		Color change to dark grey.	
			100	10			
			100	12			
			100	14			
			100	16		Dark grey, mudstone mixd with large chunks of silica carbonate.	
			100	18			
			100	20		Grey mudstone with pieces of silica carbonate.	
			100	22			
			100	24			
			100	26		No silica carbonate.	
			100	28			
			100	30			
			100	32			
			100	34			
			100	36		Weathered serpeninite, light grey in fine powder matrix.	
			100	38			
				40			



THE SOURCE GROUP, INC.

BORING/WELL ID:
ADIT-1

PROJECT NAME AND ADDRESS: Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA		Project No.: 01-SUN-055	
BORING LOCATION (AT SITE):		Logged By: Kristene Tidwell	
CONTRACTOR AND EQUIPMENT: Boart Longyear			
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE:	N/A
START DATE:	5/5/11	FINISH DATE:	5/6/11
FIRST WATER (BGS):	65'	STABILIZED WATER LEVEL:	65'
SURFACE ELEVATION:		CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):	85'	BORING DIAMETER/DEPTH:	8" - 85'

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
			100	40		Grey mudstone	
			100	42			
			100	44			
			100	46			Cement
			100	48			
			100	50			
			100	52		Some sheared pieces of serpeninite in mudstone matrix.	Bentonite
			100	54		Harder mudstone, possibly sheared.	
			100	56			
			100	58			Sand
			100	60			
			100	62			
			100	64		Moist	
			100	66			
			100	68			Screen
			100	70		Rubble-muddy matrix with large cobbles composed of serpeninite, mudstone, coarse grained sand, large pieces of serpeninite with evidence of metacinnabar, wet.	
			100	72			
			100	74			
			100	76			
			100	78		Sepeninite rock, somewhat broken up with mud.	
				80			

PROJECT NAME AND ADDRESS:	Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA	Project No.:	01-SUN-055
BORING LOCATION (AT SITE):		Logged By:	Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	Boart Longyear		
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE:	N/A
START DATE:	5/5/11	FINISH DATE:	5/6/11
FIRST WATER (BGS):	65'	STABILIZED WATER LEVEL:	65'
SURFACE ELEVATION:		CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):	85'	BORING DIAMETER/DEPTH:	8" - 85'

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
			100	80		Sepeninite rock, somewhat broken up with mud.	
			100	82			
			100	84			
				86		Bottom of Boring 85 feet	
				88			
				90			
				92			
				94			
				96			
				98			
				100			
				102			
				104			
				106			
				108			
				110			
				112			
				114			
				116			
				118			
				120			

PROJECT NAME AND ADDRESS:	Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA	Project No.: 01-SUN-055
BORING LOCATION (AT SITE):		Logged By: Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	Boart Longyear	
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE: N/A
START DATE/ (TIME):	5/2/11 14:15	FINISH DATE/ TIME 5/5/11
FIRST WATER (BGS):		STABILIZED WATER LEVEL:
SURFACE ELEVATION:		CASING TOP ELEVATION:
TOTAL BORING DEPTH(S):	275'	BORING DIAMETER/DEPTH: 8" - 275'

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
			100	0		Fill dirt from earthwork.	<p>Cement</p>
			100	2		Siltstone with sand with gravel, (15,65,5,15), reddish brown, dry, low plasticity, low to moderate permeability, angular to subangular gravel, highly weathered mudstone. Lesser clay content, more sand (0,50,35,15).	
			100	4			
			100	6			
			100	8			
			100	10			
			100	12		Slight moisture increase in gravel (0,50,15,55), increase in gravel size to 2" diameter, subangular gravel pieces.	
			100	14		Color change to greenish grey, increase in clay and silt, decrease of gravel and sand (20,60,5,15).	
			100	16		Reddish brown mottling, decrease in gravel and increase in Clay (25,60,5,10), decrease in gravel size, subrounded.	
			100	18		Greenish gray mottling.	
			100	20			
			100	22		Decrease in gravel size.	
			100	24			
			100	26		Color change to grey, mudstone, no gravel (10,80,10,0), dry.	
			100	28			
			100	30			
			100	32			
			100	34			
			100	36			
			100	38			
				40			



THE SOURCE GROUP, INC.

BORING/WELL ID:
DMEA-1

PROJECT NAME AND ADDRESS: Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA		Project No.: 01-SUN-055	
BORING LOCATION (AT SITE):		Logged By: Kristene Tidwell	
CONTRACTOR AND EQUIPMENT: Boart Longyear			
SAMPLING METHOD: Core Barrel	MONITORING DEVICE: N/A		
START DATE/ (TIME): 5/2/11 14:15	FINISH DATE/ TIME: 5/5/11		
FIRST WATER (BGS):	STABILIZED WATER LEVEL:		
SURFACE ELEVATION:	CASING TOP ELEVATION:		
TOTAL BORING DEPTH(S): 275'	BORING DIAMETER/DEPTH: 8" - 275'		

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED		Well construction details
			100	40				
			100	42		Looser, less consolidated, dry, color change to greyish brown.		
			100	44				
			100	46				
			100	48				
			100	50				
			100	52		Slight increase in clay, color change to grey.		
			100	54				
			100	56				
			100	58		Increase in sand and gravel in thin layers with moisture.		
			100	60				
			100	62				
			100	64		Dry, no sand/gravel, decrease in clay content. Dry, no sand, remains grey mudstone.		
			100	66				
			100	68				
			100	70				
			100	72				
			100	74				
			100	76				
			100	78				
				80				

Cement



THE SOURCE GROUP, INC.

BORING/WELL ID:
DMEA-1

PROJECT NAME AND ADDRESS:	Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA	Project No.:	01-SUN-055
BORING LOCATION (AT SITE):		Logged By:	Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	Boart Longyear		
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE:	N/A
START DATE/ (TIME):	5/2/11 14:15	FINISH DATE/ TIME:	5/5/11
FIRST WATER (BGS):		STABILIZED WATER LEVEL:	
SURFACE ELEVATION:		CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):	275'	BORING DIAMETER/DEPTH:	8" - 275'

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
			0	80			
			0	82			
			0	84			
		100		85			Cement
		100		88			
		100		90			
		100		92			
		100		94		Intermittent sandy/gravel zones from 93 - 98'. Interbedded with mudstone, moist.	
		100		96			
		100		98		Mudstone as before, grey.	
		100		100			
		100		102			
		100		104		Thin gravel layer, rounded to subrounded gravel up to 1mm, well sorted, appears dry.	
		100		106		Mudstone as before. More competent.	
		100		108			
		100		110			
		100		112			
		100		114			
		100		116			
		100		118			
				120			



THE SOURCE GROUP, INC.

BORING/WELL ID:

DMEA-1

PROJECT NAME AND ADDRESS:		Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA		Project No.: 01-SUN-055
BORING LOCATION (AT SITE):				Logged By: Kristene Tidwell
CONTRACTOR AND EQUIPMENT:		Boart Longyear		
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE:	N/A	
START DATE/ (TIME):	5/2/11 14:15	FINISH DATE/ TIME	5/5/11	
FIRST WATER (BGS):		STABILIZED WATER LEVEL:		
SURFACE ELEVATION:		CASING TOP ELEVATION:		
TOTAL BORING DEPTH(S):	275'	BORING DIAMETER/DEPTH:	8" - 275'	

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED		Well construction details
			100	120		Mudstone as before.		
			100	122				
			100	124				
			100	126				
			100	128				
			100	130				
			100	132				
			100	134				
			100	136				
			100	138				
			100	140				
			100	142				
			100	144				
			100	146				
			100	148				
			100	150				
			100	152				
			100	154				
			100	156				
			100	158				
				160				

Cement

PROJECT NAME AND ADDRESS:		Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA		Project No.: 01-SUN-055	
BORING LOCATION (AT SITE):				Logged By: Kristene Tidwell	
CONTRACTOR AND EQUIPMENT:		Boart Longyear			
SAMPLING METHOD:		Core Barrel	MONITORING DEVICE:	N/A	
START DATE/ (TIME):		5/2/11 14:15	FINISH DATE/ TIME	5/5/11	
FIRST WATER (BGS):				STABILIZED WATER LEVEL:	
SURFACE ELEVATION:				CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):		275'	BORING DIAMETER/DEPTH:	8" - 275'	

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED		Well construction details
			100	160		Mudstone as before.		
			100	162				
			100	164				
			100	166				
			100	170				
			100	170				
			100	172				
			100	174		Color change to brownish grey.		
			100	176				
			100	178				
			100	180		Color change to grey.		
			100	182				
			100	184				
			100	186				
			100	188				
			100	190		Transitional fault zone, pieces of silica carbonate, angular with muddy grey mudstone.		
			100	192		Silica carbonate, white/grey with green mineralization.		
			100	194				
			100	196		Same as above.		
			100	198				
				200				

Cement

PROJECT NAME AND ADDRESS:		Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA		Project No.: 01-SUN-055	
BORING LOCATION (AT SITE):				Logged By: Kristene Tidwell	
CONTRACTOR AND EQUIPMENT:		Boart Longyear			
SAMPLING METHOD:		Core Barrel	MONITORING DEVICE:		N/A
START DATE/ (TIME):		5/2/11 14:15	FINISH DATE/ TIME		5/5/11
FIRST WATER (BGS):				STABILIZED WATER LEVEL:	
SURFACE ELEVATION:				CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):		275'	BORING DIAMETER/DEPTH:		8" - 275'

Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
			100	200		Grey mudstone.	
			100	202			
			100	204			
			100	206			
			100	208			
			100	210			
			100	212			
			100	214			
			100	216			
			100	218			
			100	220			
			100	222			
			100	224			
			100	226			
			100	228			
			100	230			
			100	232			
			100	234			
			100	236			
			100	238			
				240		Medium to coarse sandstone.	
						Silica carbonate, same as 190', with mud stain at 233-240'.	
						Soft drilling at 240-244'.	

Bentonite

Packer

PROJECT NAME AND ADDRESS:	Mt. Diablo Mine, 2430 Morgan Territory Road, Clayton, CA		Project No.: 01-SUN-055
BORING LOCATION (AT SITE):			Logged By: Kristene Tidwell
CONTRACTOR AND EQUIPMENT:	Boart Longyear		
SAMPLING METHOD:	Core Barrel	MONITORING DEVICE:	N/A
START DATE/ (TIME):	5/2/11 14:15	FINISH DATE/ TIME	5/5/11
FIRST WATER (BGS):		STABILIZED WATER LEVEL:	
SURFACE ELEVATION:		CASING TOP ELEVATION:	
TOTAL BORING DEPTH(S):	275'	BORING DIAMETER/DEPTH:	8" - 275'

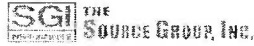
Time	Water Level	Sample Interval	Recovery (%)	Depth (feet)	Stratigraphy	LITHOLOGIC DESCRIPTION (classification, color, moisture, density, grain size/plasticity, other) ALL PERCENTAGES ARE APPROXIMATE UNLESS OTHERWISE STATED	Well construction details
14:30			100	240		Dark grey, very weak at 240-246'.	
			0	242		Lost all circulation at 243'.	
			0	244			
			0	246			
			0	248		247-266' total 9' recovery. Grey mud, sand gravel poorly sorted, appears very disturbed, perhaps cave in.	
			0	250			
			0	252		Gravel pieces and cobbles, rounded to angular, consisting of mudstone and some silica carbonate.	
			0	254			
			0	256			
			0	258			
			0	260			
			0	262			
			0	264			
			100	266		Fractured silica carbonate, hard.	
			100	268			
		100	270				
		100	272		Less fractured.		
		100	274				
				276	Bottom of Boring 275 feet		
				278			
				280			

APPENDIX C

APPENDIX C

FIELD DATA SHEETS

Groundwater Monitoring Well Field Sampling Form



PROJECT NAME: _____

PROJECT NO.: _____

TASK NO.: _____

WELL ID: ADIT-1

PURGE DATE: 07/26/01

SAMPLE TIME: 12:15

SAMPLE DATE: 7/26/01

PERSONNEL: Deric Kartz Kristine Tidwell

INITIAL DTW (ft): 72.65

DEPTH TO BOTTOM (ft): _____

WELL DIAM. (in): _____

3 VOLUMES (gals): _____

h*3*0.064 (1.25"); h*3*0.16 (2"); h*3*0.26 (2.5");
h*3*0.38 (3"); h*3*0.65 (4"); h*3*1.5 (6")

PURGE LOG: _____

(circle)

(check units!)

DTW	Time (24 hr)	No. Gallons	pH	EC (µS/cm)	Temp. (C)	Dissolved Oxygen (mg/L)	REDOX ()	Color	Turbidity	Other Observations
	1203	0	5.45	11518	24.15	0.29	-12.3	clr	42.1	
	1205	1	5.16	11403	23.40	0.81	-11.8	clr	34.8	
	1209	2	5.14	11695	23.41	0.99	-10.4	clr	39.2	
	1214	3	5.13	11058	23.43	0.98	-11.0	clr	40.8	

Total Gallons Purged: 3

Purging Method

2" Submersible Pump

12 Volt Pump

Peristaltic Pump

Bailer

WELL SAMPLING:

DTW at Time of Sampling: 72.65

Sampling Method

2" Submersible Pump

12 Volt Pump

Peristaltic Pump

Bailer

SAMPLE ID: ADIT 1

QA/QC SAMPLING:

WAS QA/QC SAMPLE COLLECTED AFTER THIS WELL?

YES NO

IF SO, SAMPLE ID: _____

TYPE: Rinsate Blank

Duplicate Field Blank

PROPER DECON: Yes No

EQUIPMENT CALIBRATED: Yes No

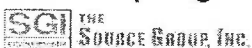
DRIFT: Yes No

(If YES, comment below)

COMMENTS:

Transducer = 5.769
DTW - Meter = 72.65

Groundwater Monitoring Well Field Sampling Form



PROJECT NAME: _____

PROJECT NO.: _____

TASK NO.: _____

WELL ID: ONEA-1

PURGE DATE: 7/24/11

SAMPLE TIME: _____

SAMPLE DATE: 7/24/11

PERSONNEL: Debra Karuz Kirsteen Tidwell
(circle)

INITIAL DTW (ft): 99.63

DEPTH TO BOTTOM (ft): _____

WELL DIAM. (in): 4"

3 VOLUMES (gals): _____
h*3*0.064 (1.25"); h*3*0.16 (2"); h*3*0.26 (2.5");
h*3*0.38 (3"); h*3*0.65 (4"); h*3*1.5 (6")

PURGE LOG:

(check units!)

DTW	Time (24 hr)	No. Gallons	pH	EC	Temp.	Dissolved Oxygen	REDOX	Color	Turbidity	Other Observations
	1026	0	6.10	13693	25.18	3.09	-71.0	clr	66.0	
	1028	1	6.12	13270	24.39	1.57	-68.3	clr	37.7	
	1033	2	6.08	13205	24.33	1.58	-64.0	clr	37.4	
	1038	3	6.07	13208	24.35	1.37	-63.0	clr	38.6	

Total Gallons Purged: 3

Purging Method: 2" Submersible Pump 12 Volt Pump Peristaltic Pump Bailer

WELL SAMPLING:

DTW at Time of Sampling: 99.63

Sampling Method: 2" Submersible Pump 12 Volt Pump Peristaltic Pump Bailer

SAMPLE ID: ONEA-1

QA/QC SAMPLING:

WAS QA/QC SAMPLE COLLECTED AFTER THIS WELL? YES / NO

IF SO, SAMPLE ID: _____ TYPE: Rinsate Blank Duplicate Field Blank

PROPER DECON: Yes No

EQUIPMENT CALIBRATED: Yes No DRIFT: Yes No
(If YES, comment below)

COMMENTS:

Transducer depth - 10.11
DTW - 99.63

GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM

JOB NAME: MAP
TSG JOB NO.: 01-50M-055
TASK NO.: 3
PERSONNEL: K. Tidwell

WELL ID: ADIT-1 INITIAL DTW (ft) 71.12
PURGE DATE: 6/15/11 DEPTH TO BOTTOM (ft) 90.05
SAMPLE TIME: 1320 WELL DIAM. (in) _____
SAMPLE DATE: 6/15/11 3 VOLUMES (gals) _____
n=3:0.064 (1.25"); h=3'0.16 (2"); h=3'0.26 (2.5"); h=3'0.65 (4")
FINAL DTW (ft) _____

DTW	Time (24 hr)	No. Gallons	pH	EC ()	Temp (°C)	FL ()	OX Redox ()	DO ()	(check units)		
									Turbidity	Color	Other Observations
1313	1318	0.5	4.77	9299	27.20		23.1	6.15	128.0	clr	
1318	1320	0.75	4.75	9451	24.16		8.16	6.03	126.1	clr	
1320	1322	1.15	4.73	9475	24.87		8.1	6.05	120.0	clr	
21.3			4.19	1478	24.10		0.63	6.10	119.3	clr	
			4.80	9420	24.11		2.4	6.11	117.7	clr	

Totalizer End _____
Totalizer Start _____
Total Gallons 1.25
Purging Method: 2" Submersible Pump
Sampling Method: 2" Submersible Pump

12 Volt Pump Peristaltic Pump Bailer
12 Volt Pump Peristaltic Pump Bailer

YES / NO
Type: Rinsate Blank, Duplicate, Field Blank

Sample ID _____
COMMENTS _____

**GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

JOB NAME: M.A.P
 TSG JOB NO.: 015UN-003
 TASK NO.: 3
 PERSONNEL: P. Howard

WELL ID: DREA-1
 PURGE DATE: 6/15/00
 SAMPLE TIME: _____
 SAMPLE DATE: _____

INITIAL DTW (ft) 98.12
 DEPTH TO BOTTOM (ft) 217.1
 WELL DIAM. (in) 4"
 3 VOLUMES (gals) 1.5 1.5 1.5
1.5 = 3.0 GPH (1.25 ft³ / 3.0 min) 2.6 (2.5%) 4.3 (0.55 G)

(CHECK UNITS)

DTW	Time (24 hr)	No. Gallons	pH	EC ()	Temp (°)	FL ()	OX Redox ()	DO ()	Turbidity	Color	Other Observations
	12.15	1.5	4.3	125	25.0		160	7.5	38.3	200	
	12.15	1.5	4.3	125	25.0		160	7.5	38.3	200	
	12.20	1.5	4.3	125	25.0		160	7.5	38.3	200	
98.18	12.25	1.5	4.3	125	25.0		160	7.5	38.3	200	

Totalizer End _____
 Totalizer Start _____
 Total Gallons 1.5

Purging Method: 2" Submersible Pump
 Sampling Method: 2" Submersible Pump

12 Volt Pump: Peristaltic Pump
 12 Volt Pump: Peristaltic Pump

YES / NO
 YES / NO
 YES / NO
 YES / NO

WAS QA/QC SAMPLE COLLECTED AFTER THIS WELL?
 IF SO: _____

Sample ID: 015UN-003-3

COMMENTS

APPENDIX D

APPENDIX D
SURVEYORS REPORTS

Virgil Chavez Land Surveying

721 Tuolumne Street

Vallejo, California 94590

(707) 553-2476 • Fax (707) 553-8698

April 15, 2011

Project No.: 3096-03

Kristene Tidwell
The Source Group, Inc.
3451-C Vincent Road
Pleasant Hill, Ca 94523



Subject: Monitoring Well Survey
Former Morgan Territory Mine
2430 Morgan Territory Road
Clayton, CA

Dear Kristene:

This is to confirm that we have proceeded at your request to locate several points at the above referenced location. The survey was completed on April 7, 2011. The benchmark for this survey is known as PID AA3809, stamped PT 25 LS 5672 1990, located 0.15 Mi. southeast of the intersection of Marsh Creek Road and Morgan Territory Road. The latitude, longitude and coordinates are for top of casings and are based on the Calif. State Coordinate System, Zone III (NAD83). Benchmark Elev. = 781.00 feet (NAVD 88).

<u>Latitude</u>	<u>Longitude</u>	<u>Northing</u>	<u>Easting</u>	<u>Elev.</u>	<u>Desc.</u>
37.9011277	-121.8775226	2153508.40	6164223.50	---	ADIT2
37.9009353	-121.8768552	2153435.49	6164415.00	---	ADIT3
37.9019500	-121.8781100	2153810.28	6164058.44	900.22	DMEA2
37.9017800	-121.8779500	2153747.70	6164103.68	---	DMEA3
37.9017669	-121.8779376	2153742.87	6164107.19	875.72	6' O/S
37.9017153	-121.8790697	2153728.89	6163780.32	---	BLDG COR
37.9017675	-121.8790905	2153748.00	6163774.57	---	BLDG COR
37.9016821	-121.8792007	2153717.38	6163742.33	---	BLDG COR



Sincerely,

Virgil D. Chavez
Virgil D. Chavez, PLS 6323

Virgil Chavez Land Surveying

721 Tuolumne Street

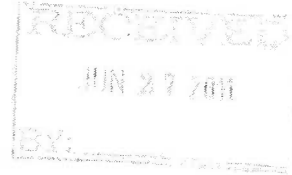
Vallejo, California 94590

(707) 553-2476 • Fax (707) 553-8698

June 21, 2011

Project No.: 3096-03

Kristene Tidwell
The Source Group, Inc.
3451-C Vincent Road
Pleasant Hill, Ca 94523



Subject: Monitoring Well Survey
Former Morgan Territory Mine
2430 Morgan Territory Road
Clayton, CA

Dear Kristene:

This is to confirm that we have proceeded at your request to perform a survey at your request at the above referenced location. The survey was completed on June 14, 2011. The benchmark for this survey is known as PID AA3809, stamped PT 25 LS 5672 1990, located 0.15 Mi. southeast of the intersection of Marsh Creek Road and Morgan Territory Road. The latitude, longitude and coordinates are for top of casings and are based on the Calif. State Coordinate System, Zone III (NAD83). Benchmark Elev. = 781.00 feet (NAVD 88).

<u>Latitude</u>	<u>Longitude</u>	<u>Northing</u>	<u>Easting</u>	<u>Elev.</u>	<u>Desc.</u>
				872.75	GRD ADIT-1
37.9013809	-121.8780037	2153602.60	6164086.06	875.70	TOC ADIT-1
				900.57	GRD DMEA-1
37.9019338	-121.8780972	2153804.33	6164062.04	902.98	TOC DMEA-1



Sincerely,

Virgil D. Chavez
Virgil D. Chavez, PLS 6323

APPENDIX E

APPENDIX E

WASTE MANIFESTS

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NONREQUIRED CAC 022675268	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 003990850 FLE				
5. Generator's Name and Mailing Address Former Mount Diablo Mercury Mine 2430 Morgan Territory Road Clayton, CA 94517 Generator's Phone: (925) 944-2856				Generator's Site Address (if different than mailing address) SAME					
6. Transporter 1 Company Name Clean Harbors Environmental Services Inc					U.S. EPA ID Number MA0939322250				
7. Transporter 2 Company Name					U.S. EPA ID Number				
8. Designated Facility Name and Site Address Clean Harbors Buttonwillow LLC 2500 West Lokan Road Buttonwillow, CA 93206 Facility's Phone: (661) 762-6200					U.S. EPA ID Number CA0980675276				
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		1. NON-RCRA HAZARDOUS WASTE, SOLID, (METALS)		No. 01	Type CM	15Y		611	
		2.							
		3.							
		4.							
14. Special Handling Instructions and Additional Information L 01502438E									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offorer's Printed/Typed Name Kristene Tidwell					Signature <i>Kristene Tidwell</i>			Month Day Year 10 08 11	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name Richard Blankenship					Signature <i>Richard Blankenship</i>			Month Day Year 09 08 11	
Transporter 2 Printed/Typed Name					Signature			Month Day Year	
18. Discrepancy									
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
18b. Alternate Facility (or Generator)					Manifest Reference Number: _____ U.S. EPA ID Number				
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year									
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. H132		2.		3.		4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name Ron E Johns					Signature <i>Ron E Johns</i>			Month Day Year 09 09 11	

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping