SEMI-ANNUAL
THIRD QUARTER 2003 MONITORING REPORT

HARD CHROME ENGINEERING

OAKLAND, CALIFORNIA
750 107th Ave.

Prepared for:

McLemore Trust

October 15, 2003

Prepared by:

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DATE: OCTOBER 15, 2003
PROJECT NO.: 792775.00005

FROM: David W. Herzog

RE: Submittal of Third Quarter 2003 Monitoring Report, McLemore Trust/Hard Chrome Engineering

QUANTITY:	DESCRIPTION:
1	Third Quarter 2003 Monitoring Report, McLemore Trust/Hard Chrome Engineering

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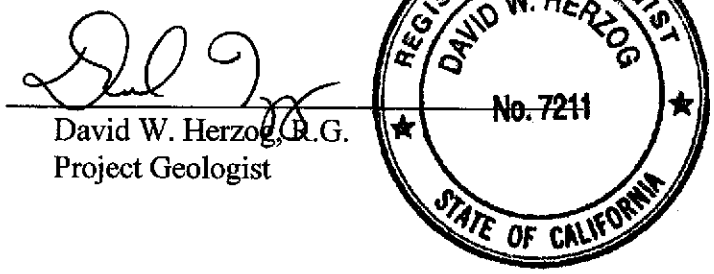
Semi-Annual
Third Quarter 2003 Monitoring Report
Hard Chrome Engineering
Oakland, California

The material and data in this report were prepared under the supervision and direction of the undersigned.

Shaw Environmental, Inc.



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INTRODUCTION

The following report documents the semi-annual third quarter 2003 monitoring event conducted at the Hard Chrome Engineering facility, located at 750 107th Avenue, Oakland, California (see Figure 1). The site currently operates as a chrome plating facility and occupies approximately 27,500 square feet. Groundwater monitoring consists of collecting groundwater samples for laboratory analyses from each monitoring well, measuring groundwater elevation in each monitoring well, and evaluating groundwater gradient and direction of groundwater flow beneath the site.

Background

Based on the Preliminary Environmental Characterization, BSK & Associates, September 29, 1992, Summary and Evaluation of Environmental Conditions, Soil and Groundwater Investigation, March 24, 1998, EMCON, and Recommendations for Future Actions, Levine Fricke, July 2, 1996, it appears that groundwater and, to a lesser extent, soil beneath the site is impacted with chromium. As part of the previous investigations, soil borings SB-1 through SB-17 were drilled, and groundwater monitoring wells MW-1 and MW-1B through MW-6 were installed at the site. Site soil and groundwater impacted with chromium appears to be primarily located near a concrete-lined pit within the Hard Chrome facility (see Figure 2).

SAMPLING AND ANALYSIS PROGRAM

Shaw Environmental, Inc. (Shaw), formerly the IT Corporation, measured groundwater levels in each well on site using an electronic sounding device and reported the data on the monitoring well data forms included in Appendix A. Groundwater monitoring wells MW-1 through MW-6 were sampled consistent with the protocol presented in Figure 3 and submitted for chemical analysis. Groundwater samples collected on June 26 and 27, 1997, were not field filtered. Groundwater samples collected on September 24, 2003, were filtered in the field.

Groundwater samples collected from wells MW-1 through MW-6 were submitted to California Laboratory Services (CLS) (a state-certified laboratory, ELAP No. 1233) and analyzed for the CAM 17 listed dissolved metals using U. S. Environmental Protection Agency (USEPA) Series Methods 6000/7000, for dissolved hexavalent chromium using USEPA Method 7196, and for dissolved mercury by USEPA Method 7470. See Appendix B for certified analytical results and chain-of-custody reports.

RESULTS

Groundwater Flow and Gradient

Groundwater during the third quarter 2003 monitoring event was measured, and groundwater elevations were calculated in each well and used to construct a groundwater contour map (see Figure 4). During the third quarter 2003 monitoring event, groundwater flowed to the west-northwest with a gradient of approximately 0.0024 foot per foot. These flow conditions are generally similar to those reported by the previous consultant and generally agree with assumed regional flow patterns.

Quality Control Results

Laboratory Quality Control (QC) data were evaluated to assess the acceptability of the analytical data, and therefore, their usefulness in interpreting groundwater quality. Laboratory QC results are included with the analytical reports in Appendix B. The QC evaluation is summarized below.

- All analyses were performed within USEPA–recommended holding times
- The results of the daily laboratory method blanks were acceptable
- Matrix spike and matrix spike duplicates (MS/MSD) were performed by the laboratory. MS and MSD recoveries, and the relative percent difference (RPD) between duplicate results were within acceptance limits.
- The laboratory reported the results of laboratory control samples (LCS). Results were within acceptance limits.
- Routine reporting limits were used to quantify and report the analytical results.

The laboratory QC results indicate that the groundwater analytical data are of acceptable quality and can be used to evaluate groundwater quality.

Groundwater Analytical Results

Antimony was reported in wells MW-1B and MW-2 at concentrations of 0.059 and 1.7 milligrams per liter (mg/L), respectively. Barium was reported in all of the wells ranging from 0.061 to 0.22 mg/L. Chromium was reported in wells MW-1B, MW-2, MW-3, MW-4, MW-5, and MW-6 at concentrations of 28, 750, 0.083, 0.034, 9.7 and 0.034 mg/L, respectively. Table 2 summarizes the groundwater analytical results. Hexavalent chromium was reported in wells MW-1B, MW-2, MW-3, MW-5, and MW-6 at concentrations of 28, 650, 0.022, 10, and 0.028 mg/L, respectively. Copper was reported in well MW-2 at a concentration of 9.4 mg/L. Nickel was reported in wells MW-1, MW-2, and MW-4 at concentrations of 0.036, 1.3, and 0.022 mg/L, respectively. Mercury was reported in well MW-2 at a concentration of 0.00075 mg/L. Zinc was reported in well MW-2 at a concentration of 1.3 mg/L. Table 2 summarizes the groundwater analytical results.

SUMMARY AND CONCLUSIONS

Based on analytical results collected from wells MW-1 through MW-6 on September 24, 2003, metals reported include antimony, barium, chromium, hexavalent chromium, copper, mercury, and zinc. Impacted water extends from the existing sump (well MW-2), west (hydraulically downgradient) toward the locations of wells MW-5 and MW-1B. The lateral extent of impacted groundwater beneath the site appears to be defined to the north by monitoring well MW-4; and to the south and southwest by wells MW-1, MW-3, and MW-6. The lateral extent of impacted groundwater has not been defined to the east or northwest of the site; however, concentrations of total chromium and hexavalent chromium have generally decreased in well MW-2 and wells MW-5 and MW-1B. Vertically, the extent of impacted groundwater has not been defined.

During the September 2003 monitoring event, the monitoring well exhibiting the greatest chromium impact was well MW-2, located hydraulically downgradient from the sump. Monitoring wells MW-3 and MW-5 also showed some chromium impact.

Concentrations of total chromium in on-site well MW-1B through MW-6, currently exceed the maximum contaminant level (MCL) for this compound (.05 mg/L). Overall, concentrations in these wells have declined with respect to historical levels. Total and hexavalent chromium concentrations in downgradient wells MW-1B and MW-5 show declining trends. Historical analytical results are contained in Table 2.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

Table 1

Groundwater Elevation Data
Hard Chrome Engineering
September 24, 2003

Sample Designation	Top of Casing (feet/SSR)	Depth to Water (feet)	Groundwater Elevation (feet/SSR)
MW-1	100.23	17.32	82.91
MW-1B	99.01	16.52	82.49
MW-2	100.38	17.67	82.71
MW-3	100.37	17.55	82.82
MW-4	100.30	17.64	82.66
MW-5	99.29	16.72	82.57
MW-6	100.48	17.78	82.70

feet/SSR = feet with respect to the site specific benchmark
NM = Not Measured. Near or under parked camper.

Table 2
Groundwater Analytical Results
Hard Chrome Engineering
(Units: mg/L, unless noted)

Sample Designation	Sampling Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH (units)
MW-1	06/26/97	NA	<0.05	NA	<0.005	NA	0.33	<0.01	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.57
MW-1	08/11/97	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.46
MW-1	09/29/97	NA	<0.05	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.53
MW-1	12/30/97	NA	<0.01	NA	<0.005	NA	0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	7.18
MW-1	04/23/98	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	03/13/00	<0.1	<0.1	<0.1	<0.01	<0.01	0.0305	0.0261	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	0.0107	6.51
MW-1	09/20/00	<0.05	<0.05	0.105	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005	<0.05	<0.0002	<0.02	<0.02	<0.05	<0.005	<0.05	<0.02	<0.0005	6.31
MW-1	03/20/01	<0.1	<0.1	<0.1	<0.01	<0.01	0.0951	0.0486	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	0.0236	6.88
MW-1	09/13/01	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	0.0052	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	5.54
MW-1	03/12/02	<0.05	<0.005	0.068	<0.005	<0.01	0.016	<0.01	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.005	<0.02	<0.02	5.80
MW-1	09/23/02	<0.05	<0.005	0.1	<0.005	<0.01	<0.02	<0.01	<0.02	<0.02	<0.005	<0.0002	<0.02	0.022	<0.005	<0.01	<0.01	<0.02	<0.02	6.86
MW-1	03/26/03	<0.05	<0.005	0.098	<0.005	<0.01	<0.02	<0.01	<0.02	<0.02	<0.005	0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	7.11
MW-1	09/24/03	<0.05	<0.005	0.11	<0.005	<0.01	<0.02	<0.01	<0.02	<0.02	<0.005	<0.0002	<0.02	0.036	<0.005	<0.01	<0.01	<0.02	<0.02	6.63
MW-1B	06/27/97	NA	<0.05	NA	0.011	NA	430	360	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.57
MW-1B	08/11/97	NA	NA	NA	NA	NA	340	330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.48
MW-1B	09/29/97	NA	<0.5	NA	<0.05	NA	280	260	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	7.59
MW-1B	12/30/97	NA	<0.05	NA	<0.025	NA	200	160	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.91
MW-1B	04/23/98	NA	NA	NA	NA	NA	580	520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.47
MW-1B	03/13/00	<0.1	<0.1	<0.1	<0.01	<0.01	252	258	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.56
MW-1B	09/20/00	0.56	<0.5	<0.5	<0.05	<0.05	134	122	<0.2	<0.05	<0.5	<0.0002	<0.2	<0.2	<0.5	<0.05	<0.5	<0.2	<0.005	6.01
MW-1B	03/20/01	<0.5	<0.5	<0.5	<0.05	<0.05	72.6	74.6	<0.2	<0.05	<0.5	<0.0002	<0.2	<0.2	<0.5	<0.05	<0.5	<0.2	<0.05	6.95
MW-1B	09/13/01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1B	03/12/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1B	09/23/02	0.16	<0.005	0.051	<0.005	<0.01	33	35	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	0.071	<0.02	6.58
MW-1B	03/26/03	0.092	<0.005	0.056	<0.005	<0.01	35	37	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.91
MW-1B	09/24/03	0.059	<0.005	0.061	<0.005	<0.01	28	28	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.86

Table 2
Groundwater Analytical Results
Hard Chrome Engineering
(Units: mg/L, unless noted)

Sample Designation	Sampling Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH (units)
MW-2	06/27/97	NA	0.21	NA	0.032	NA	3000	3000	NA	NA	NA	NA	NA	NA	0.14	NA	NA	NA	NA	4.65
MW-2	08/11/97 *	NA	NA	NA	NA	NA	2600	2600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.66
MW-2	09/29/97	NA	<0.5	NA	<0.05	NA	1500	1400	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	4.82
MW-2	12/30/97	NA	<0.05	NA	<0.025	NA	86	83	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.42
MW-2	04/23/98	NA	NA	NA	NA	NA	150	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.31
MW-2	03/13/00	<0.1	<0.1	<0.1	<0.01	<0.01	139	136	<0.04	1.24	<0.1	<0.0002	<0.04	0.3	<0.1	<0.01	<0.1	<0.04	0.294	4.77
MW-2	09/20/00	2.67	<2.5	<2.5	<0.25	<0.25	598	611	<1.0	7.06	<2.5	0.00078	<1.0	1.04	<2.5	<0.25	<2.5	<1.0	1.12	3.49
MW-2	03/20/01	2.24	<2	<2	<0.2	<0.2	752	757	<0.8	17.2	<2	0.00122	<0.8	1.69	<2	<0.2	<2	<0.8	1.88	6.37
MW-2	09/13/01	<10	<10	<10	<1	<1	1000	55	<4	14	<10	0.00088	<4	<4	<10	<1	<10	<4	2.3	5.19
MW-2	03/12/02	<0.05	<0.005	<0.02	<0.005	<0.01	410	410	<0.02	7.0	<0.005	0.00045	<0.02	0.94	<0.005	<0.01	<0.005	1.5	0.97	5.47
MW-2	09/23/02	2.9	<0.05	0.12	<0.025	<0.05	610	510	<0.1	2.9	<0.05	0.00041	<0.1	0.78	<0.05	<0.05	<0.1	1.2	0.75	6.24
MW-2	03/26/03	1.2	<0.05	0.22	<0.01	<0.02	530	530	<0.04	6.7	<0.05	0.00095	<0.04	0.95	<0.05	<0.02	<0.1	<0.04	0.94	5.91
MW-2	09/24/03	1.7	<0.025	0.22	<0.025	<0.05	750	650	<0.1	9.4	<0.025	0.00075	<0.1	1.3	<0.025	<0.05	<0.05	<0.1	1.3	5.37
MW-3	06/26/97	NA	<0.05	NA	0.011	NA	1	<0.01	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.86
MW-3	08/11/97	NA	NA	NA	NA	NA	<0.01	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.84
MW-3	09/29/97	NA	<0.05	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	7.55
MW-3	12/30/97	NA	<0.01	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	7.42
MW-3	04/23/98	NA	NA	NA	NA	NA	0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.94
MW-3	03/13/00	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	0.00623	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.68
MW-3	09/20/00	<0.05	<0.05	0.0553	<0.005	<0.005	0.014	<0.005	<0.02	<0.005	<0.05	<0.0002	<0.02	<0.02	<0.05	0.0056	<0.05	<0.02	<0.0005	6.56
MW-3	03/20/01	<0.1	<0.1	<0.1	<0.01	<0.01	0.0368	0.017	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	0.0135	7.00
MW-3	09/13/01	<0.1	<0.1	<0.1	<0.01	<0.01	0.11	0.074	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.28
MW-3	03/12/02	<0.05	<0.005	0.066	<0.005	<0.01	0.024	<0.01	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.005	<0.02	<0.02	6.28
MW-3	09/23/02	<0.05	<0.005	0.053	<0.005	<0.01	0.044	0.049	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.86
MW-3	03/26/03	<0.05	<0.005	0.059	<0.005	<0.01	0.14	0.039	<0.02	<0.02	<0.005	0.00022	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.36
MW-3	09/24/03	<0.05	<0.005	0.066	<0.005	<0.01	0.083	0.022	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.74

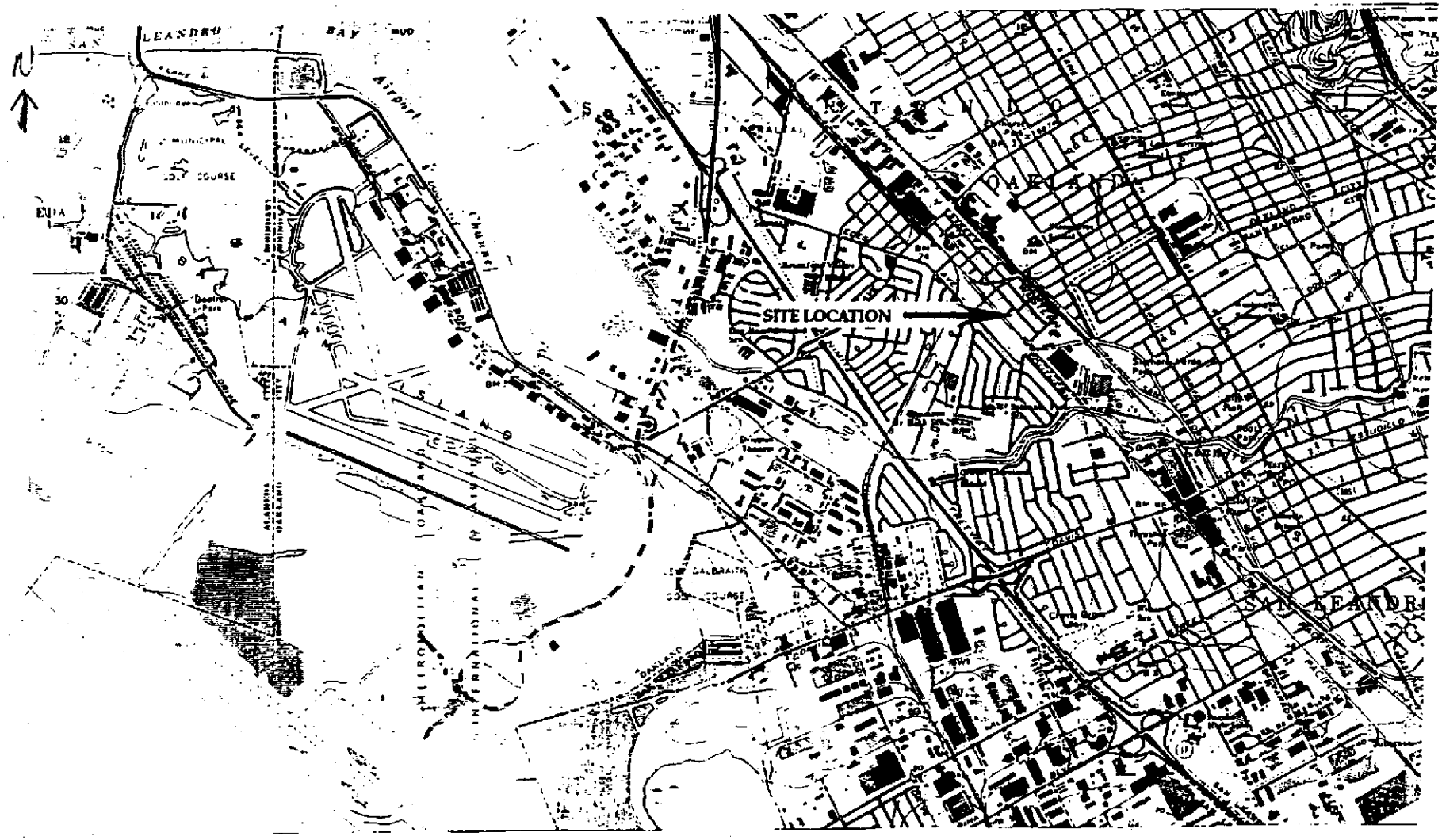
Table 2
Groundwater Analytical Results
Hard Chrome Engineering
(Units: mg/L, unless noted)

Sample Designation	Sampling Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH (units)
MW-4	06/26/97	NA	<0.05	NA	0.006	NA	0.55	<0.01	NA	NA	NA	NA	NA	NA	0.06	NA	NA	NA	NA	6.88
MW-4	08/11/97	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.72
MW-4	09/29/97	NA	<0.05	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.07	NA	NA	NA	NA	7.61
MW-4	12/30/97	NA	<0.01	NA	<0.005	NA	0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	7.40
MW-4	04/23/98	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	03/13/00	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	0.00623	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.60
MW-4	09/20/00	<0.05	<0.05	0.0624	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005	<0.05	<0.0002	<0.02	<0.02	<0.05	<0.005	<0.05	<0.02	<0.0005	6.62
MW-4	03/20/01	<0.1	<0.1	0.118	<0.01	<0.01	1.03	0.475	<0.04	<0.01	<0.1	<0.0002	<0.04	0.059	<0.1	<0.01	<0.1	<0.04	<0.01	6.64
MW-4	09/13/01	<0.1	<0.1	0.1	<0.01	<0.01	1.3	0.011	<0.04	<0.01	<0.1	<0.0002	<0.04	0.052	<0.1	<0.01	<0.1	<0.04	<0.01	5.94
MW-4	03/12/02	<0.05	<0.005	0.078	<0.005	<0.01	0.028	<0.01	<0.02	<0.02	<0.005	0.00032	<0.02	0.024	<0.005	<0.01	<0.005	<0.02	<0.02	6.15
MW-4	09/23/02	<0.05	<0.005	0.077	<0.005	<0.01	<0.02	<0.01	<0.02	<0.02	<0.005	<0.0002	<0.02	0.028	<0.005	<0.01	<0.01	<0.02	<0.02	7.00
MW-4	03/26/03	<0.05	<0.005	0.08	<0.005	<0.01	0.064	0.049	<0.02	<0.02	<0.005	0.0002	<0.02	0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.74
MW-4	09/24/03	<0.05	<0.005	0.077	<0.005	<0.01	0.034	<0.01	<0.02	<0.02	<0.005	<0.0002	<0.02	0.022	<0.005	<0.01	<0.01	<0.02	<0.02	6.79
MW-5	06/27/97	NA	<0.05	NA	0.005	NA	110	90	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.70
MW-5	08/11/97	NA	NA	NA	NA	NA	120	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.67
MW-5	09/29/97	NA	<0.5	NA	<0.05	NA	130	100	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	7.13
MW-5	12/30/97	NA	<0.05	NA	<0.025	NA	110	98	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	7.13
MW-5	04/23/98	NA	NA	NA	NA	NA	70	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.67
MW-5	03/13/00	<0.1	<0.1	<0.1	<0.01	<0.01	49.4	54.3	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.63
MW-5	09/20/00	<0.5	<0.5	<0.5	<0.05	<0.05	81.6	81.4	<0.2	<0.05	<0.5	<0.0002	<0.2	<0.2	<0.5	<0.05	<0.5	<0.2	<0.005	6.56
MW-5	03/20/01	<0.1	<0.1	<0.1	<0.01	<0.01	0.448	<0.005	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.94
MW-5	09/13/01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	03/12/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	09/23/02	<0.05	<0.005	0.084	<0.005	<0.01	2.4	2.5	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.86
MW-5	03/26/03	<0.05	<0.005	0.067	<0.005	<0.01	6	6.1	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.69
MW-5	09/24/03	<0.05	<0.005	0.1	<0.005	<0.01	9.7	10	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.70

Table 2
Groundwater Analytical Results
Hard Chrome Engineering
(Units: mg/L, unless noted)

Sample Designation	Sampling Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH (units)
MW-6	06/26/97	NA	<0.05	NA	0.005	NA	0.47	<0.01	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA	6.91
MW-6	08/11/97	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.84
MW-6	09/29/97	NA	<0.05	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	7.79
MW-6	12/30/97	NA	<0.01	NA	<0.005	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	<0.01	NA	NA	NA	NA	7.40
MW-6	04/23/98	NA	NA	NA	NA	NA	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	03/13/00	<0.1	<0.1	0.102	<0.01	<0.01	<0.01	0.00733	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.71
MW-6	09/20/00	<0.05	<0.05	0.0667	<0.005	<0.005	0.00665	<0.005	<0.02	<0.005	<0.05	<0.0002	<0.02	<0.02	<0.05	<0.005	<0.05	<0.02	0.0133	6.65
MW-6	03/20/01	<0.1	<0.1	<0.1	<0.01	<0.01	0.028	0.0249	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.83
MW-6	09/13/01	<0.1	<0.1	<0.1	<0.01	<0.01	0.031	<0.005	<0.04	<0.01	<0.1	<0.0002	<0.04	<0.04	<0.1	<0.01	<0.1	<0.04	<0.01	6.36
MW-6	03/12/02	<0.05	<0.005	0.075	<0.005	<0.01	0.018	<0.01	<0.02	<0.02	<0.005	0.00044	<0.02	<0.02	<0.005	<0.01	<0.005	<0.02	<0.02	6.37
MW-6	09/23/02	<0.05	<0.005	0.067	<0.005	<0.01	<0.02	0.028	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.87
MW-6	03/26/03	<0.05	<0.005	0.074	<0.005	<0.01	0.066	0.13	<0.02	<0.02	0.0082	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	7.03
MW-6	09/24/03	<0.05	<0.005	0.062	<0.005	<0.01	0.034	0.028	<0.02	<0.02	<0.005	<0.0002	<0.02	<0.02	<0.005	<0.01	<0.01	<0.02	<0.02	6.61
MCL		0.006	0.05	1	0.004	0.005	0.05	***	---	1.0 **	---	0.002	---	0.1	0.05	0.1 **	0.002	---	5.0 **	---

Note: Samples collected on 06/26/97 and 06/27/97 were unfiltered and analyzed for total metals; all other samples were field filtered and analyzed for dissolved metals.
mg/L = Milligrams per liter
NA = Not Analyzed.
* Total dissolved solids and total suspended solids were analyzed and detected at concentrations of 5,200 and 13,000 mg/L.
MCL = California primary maximum contaminant level (MCL).
** = Secondary MCL
*** = Primary MCL to be adopted by January 1, 2004.
--- = MCL not established.

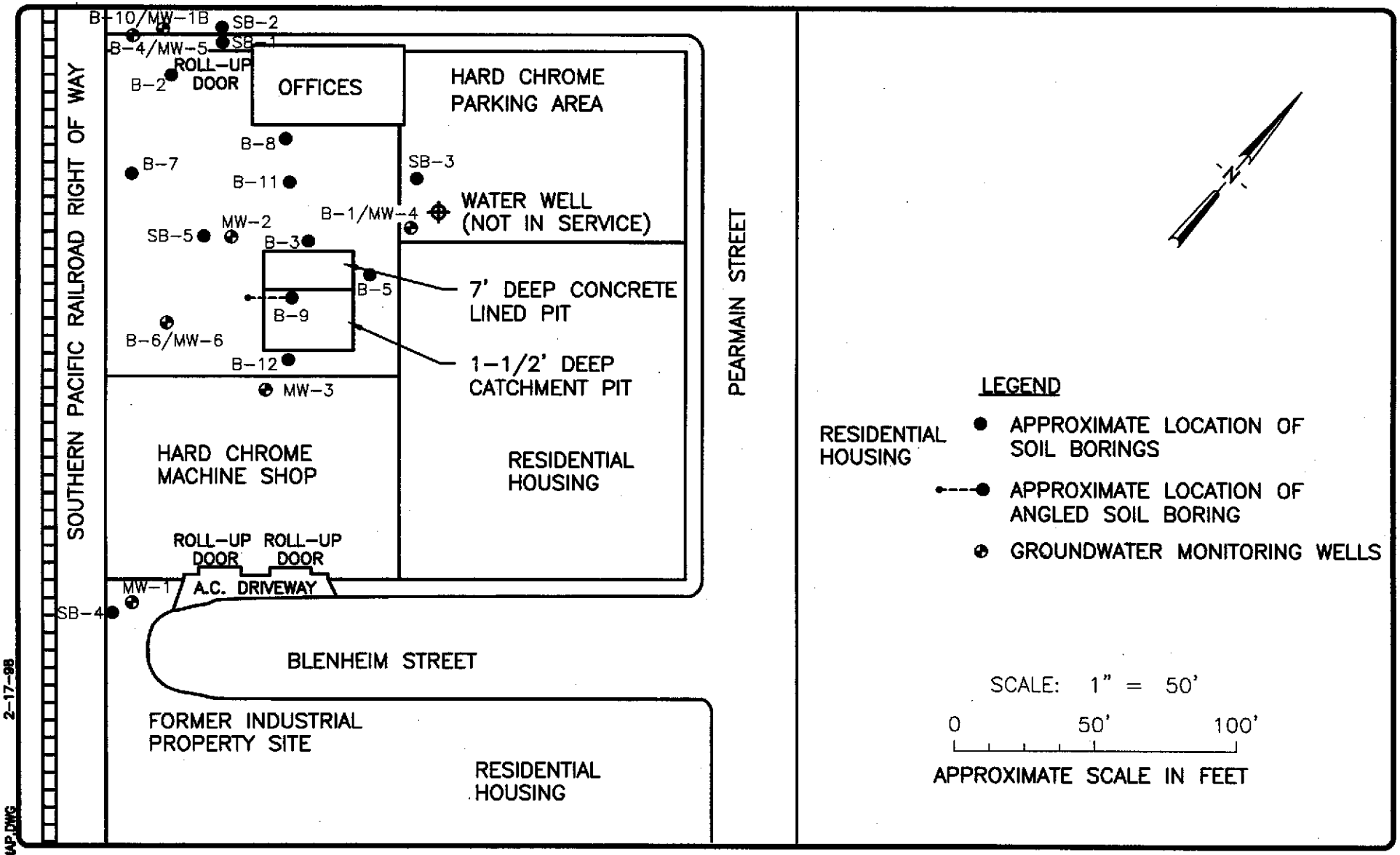


EMCON

McLEMORE TRUST
HARD CHROME ENG. INC.,
750 ~~1~~107th AVENUE, OAKLAND, CALIFORNIA

SITE LOCATION MAP

FIGURE
1
PROJECT NO.
22619-100.001



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emcon

MCLEMORE TRUST
HARD CHROME ENG. INC.,
750 107TH AVENUE
OAKLAND, CALIFORNIA
SITE MAP

FIGURE
2
PROJECT NO.
792775

MONITORING WELL PURGING PROTOCOL

EMCON

MEASURE AND RECORD DEPTH TO WATER AND WELL TOTAL DEPTH

CHECK FOR FLOATING PRODUCT

YES

MEASURE AND DOCUMENT FLOATING PRODUCT THICKNESS. DO NOT SAMPLE WELL FOR DISSOLVED CONSTITUENTS.

NO

CALCULATE PURGE VOLUME BY USING THE FOLLOWING EQUATION:

$$P = \pi r^2 h \times 7.48 \times 3$$

where:

- P = calculated purge volume (gallons)
- π = 3.14
- r = radius of well casing in feet
- h = height of water column in feet

EVACUATE WATER FROM WELL EQUAL TO THE CALCULATED PURGE VOLUME WHILE MONITORING GROUND-WATER STABILIZATION INDICATOR PARAMETERS (pH, CONDUCTIVITY, TEMPERATURE) AND TURBIDITY AT INTERVALS OF ONE CASING VOLUME.

WELL EVACUATED TO PRACTICAL LIMITS OF DRYNESS BEFORE REMOVING CALCULATED PURGE VOLUME

NO

FINAL TWO SETS OF GROUND-WATER STABILIZATION INDICATOR PARAMETER MEASUREMENTS MEET THE FOLLOWING CRITERIA:

pH	=	±	0.05 pH units
COND.	=	±	3 %
TEMP.	=	±	1.0 °F
TURBIDITY	=	±	<5 NTU

YES

WELL PURGING CRITERIA MET; PROCEED TO WELL SAMPLING

NO

CONTINUE PURGING; EVACUATE ADDITIONAL CASING VOLUME OF WATER, MONITORING INDICATOR PARAMETERS FOR STABILITY.

YES

WELL RECHARGES TO A LEVEL SUFFICIENT FOR SAMPLE COLLECTION WITHIN 24 HOURS OF EVACUATION TO DRYNESS.

YES

FIELD TEST FIRST RECHARGE WATER FOR INDICATOR PARAMETERS AND TURBIDITY, THEN PROCEED TO WELL SAMPLING.

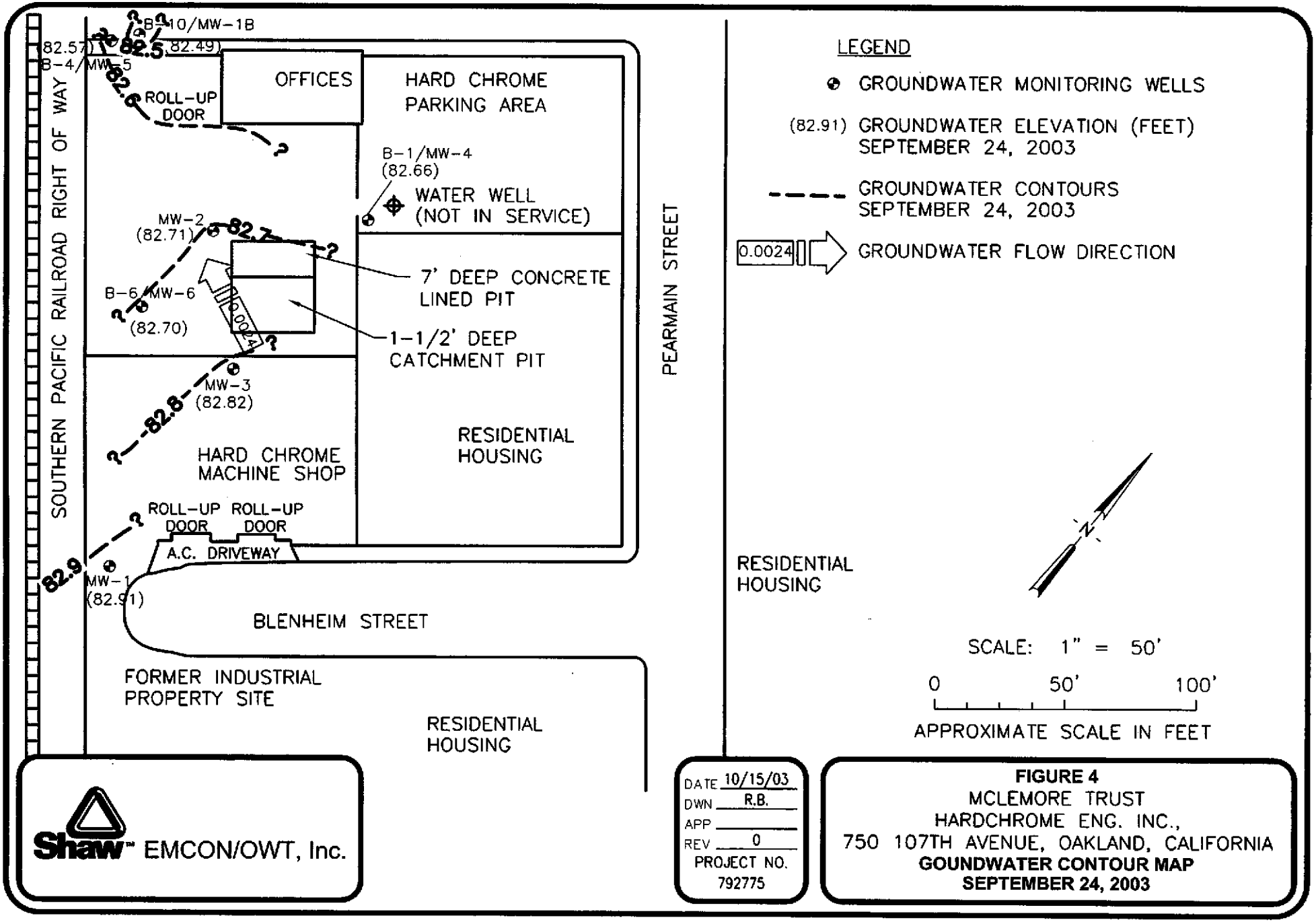
NO

RECORD WELL AS DRY FOR PURPOSES OF SAMPLING.

EMCON

MONITORING WELL PURGING PROTOCOL

FIGURE 3



Shaw™ EMCON/OWT, Inc.

DATE 10/15/03
DWN R.B.
APP
REV 0
PROJECT NO. 792775

FIGURE 4
MCLEMORE TRUST
HARDCHROME ENG. INC.,
750 107TH AVENUE, OAKLAND, CALIFORNIA
GOUNDWATER CONTOUR MAP
SEPTEMBER 24, 2003

APPENDIX A

FIELD REPORT AND FIELD DATA SHEETS

FIELD REPORT
WATER LEVEL / FLOATING PRODUCT
SURVEY

Shaw Environmental & Infrastructure, Inc.
1326 North Market Boulevard
Sacramento, California 95834
(916) 928-3300

PROJECT NO : 792775 / 00002000 **LOCATION : 750 107th Avenue, Oakland**

DATE: 9.24.03

CLIENT : Hard Chrome Engineering **SAMPLER : Paul Weinhardt**

WELL ID	CASING ELEVATION (Feet, MSL)	TOTAL DEPTH (Feet)	PREVIOUS DEPTH TO WATER 3/26/03	DEPTH TO WATER (Feet)	FLOATING PRODUCT THICKNESS (Feet)	COMMENTS
MW-1		24.40	16.18	17.32	—	
MW-2		23.90	16.58	17.67	—	
MW-3		23.50	16.45	17.55	—	
MW-4		22.90	16.36	17.64	—	
MW-5		23.20	15.59	16.72	—	
MW-6		22.70	16.64	17.78	—	
MW-1B		30.00	15.35	16.52	—	

Comments :

Paul Weinhardt
Signature

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 SAMPLE ID : MW1

PURGED BY : Paul Weinhardt CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X Surface Water ____ Leachate ____ Other ____

CASING DIAMETER (inches): 2 X 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL) : ____ VOLUME IN CASING (gal.) : 1.20

DEPTH OF WELL (feet) : 24.40 CALCULATED PURGE (gal.) : 3.61

DEPTH TO WATER (feet) : 17.32 ACTUAL PURGE VOL. (gal.) : 3.75

DATE PURGED : 9.24.03 END PURGE : 918

DATE SAMPLED : 9.24.03 SAMPLING TIME : 926

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
910	1.25	6.69	510	17.90	Cloudy	Mod
914	2.50	6.64	521	17.70	Cloudy	Mod
918	3.75	6.63	528	17.60	Cloudy	Mod

OTHER: ____ ODOR: ____ (COBALT 0-100) (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon)	____ 2" Bladder Pump	____ Bailer (Teflon)
____ Centrifugal Pump	____ Bailer (PVC)	____ Bomb Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
X Disposal Bailer	____ Dedicated	X Disposal Bailer	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: Good LOCK: ____

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt REVIEWED BY: ____ PAGE 1 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 | SAMPLE ID : MW2

PURGED BY : Paul Weinhardt | CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt | LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X | Surface Water ____ | Leachate ____ | Other ____

CASING DIAMETER (inches): 2 X | 3 ____ | 4 ____ | 4.5 ____ | 6 ____ | Other ____

CASING ELEVATION (feet/MSL) : ____ | VOLUME IN CASING (gal.) : 1.05

DEPTH OF WELL (feet) : 23.90 | CALCULATED PURGE (gal.) : 3.17

DEPTH TO WATER (feet) : 17.67 | ACTUAL PURGE VOL. (gal.) : 3.0

DATE PURGED : 9.24.03 | END PURGE : 1014

DATE SAMPLED : 9.24.03 | SAMPLING TIME : 1021

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
1006	1.0	5.52	1325	18.10	Yellow	Mod
1010	2.0	5.39	1421	18.30	Yellow	Mod
1014	3.0	5.37	1429	18.40	Yellow	Mod

OTHER: ____ | ODOR: ____ | (COBALT 0-100) | (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT

____ 2" Bladder Pump | ____ Bailer (Teflon)

____ Centrifugal Pump | ____ Bailer (PVC)

____ Submersible Pump | ____ Bailer (Stainless Steel)

X Disposal Bailer | ____ Dedicated

Other: ____

SAMPLING EQUIPMENT

____ 2" Bladder Pump | ____ Bailer (Teflon)

____ Bomb Sampler | ____ Bailer (Stainless Steel)

____ Dipper | ____ Submersible Pump

X Disposal Bailer | ____ Dedicated

Other: ____

WELL INTEGRITY: G7000 | LOCK: 0464

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt REVIEWED BY: ____ PAGE 2 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 SAMPLE ID : MW3

PURGED BY : Paul Weinhardt CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X Surface Water ____ Leachate ____ Other ____

CASING DIAMETER (inches): 2 X 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL) : ____ VOLUME IN CASING (gal.) : 1.01

DEPTH OF WELL (feet) : 23.50 CALCULATED PURGE (gal.) : 3.03

DEPTH TO WATER (feet) : 17.55 ACTUAL PURGE VOL. (gal.) : 3.00

DATE PURGED : 9.24.03 END PURGE : 1108

DATE SAMPLED : 9.24.03 SAMPLING TIME : 1114

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
1102	1.0	6.89	384	18.4	cloudy	mod
1105	2.0	6.81	370	18.1	cloudy	mod
1108	3.0	6.74	363	18.0	cloudy	mod

OTHER: ____ ODOR: ____ (COBALT 0-100) (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon)	____ 2" Bladder Pump	____ Bailer (Teflon)
____ Centrifugal Pump	____ Bailer (PVC)	____ Bomb Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
X Disposal Bailer	____ Dedicated	X Disposal Bailer	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: Good LOCK: 0464

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt REVIEWED BY: ____ PAGE 3 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 SAMPLE ID : MW4

PURGED BY : Paul Weinhardt CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X Surface Water ____ Leachate ____ Other ____

CASING DIAMETER (inches): 2 X 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL) : ____ VOLUME IN CASING (gal.) : .89

DEPTH OF WELL (feet) : 22.90 CALCULATED PURGE (gal.) : 2.68

DEPTH TO WATER (feet) : 17.64 ACTUAL PURGE VOL. (gal.) : 3.00

DATE PURGED : 9.24.03 END PURGE : 945

DATE SAMPLED : 9.24.03 SAMPLING TIME : 951

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
939	1.0	6.98	430	18.20	cloudy	MOD
942	2.0	6.82	420	18.30	cloudy	MOD
945	3.0	6.79	420	18.20	cloudy	MOD

OTHER: ____ ODOR: ____ (COBALT 0-100) (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)

____ Centrifugal Pump ____ Bailer (PVC)

____ Submersible Pump ____ Bailer (Stainless Steel)

1 Disposal Bailer ____ Dedicated

Other: ____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)

____ Bomb Sampler ____ Bailer (Stainless Steel)

____ Dipper ____ Submersible Pump

1 Disposal Bailer ____ Dedicated

Other: ____

WELL INTEGRITY: Good LOCK: NO

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt REVIEWED BY: ____ PAGE 4 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 | SAMPLE ID : MW5

PURGED BY : Paul Weinhardt | CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt | LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X | Surface Water ____ | Leachate ____ | Other ____

CASING DIAMETER (inches): 2 X | 3 ____ | 4 ____ | 4.5 ____ | 6 ____ | Other ____

CASING ELEVATION (feet/MSL) :		VOLUME IN CASING (gal.) :	1.10
DEPTH OF WELL (feet) :	23.2	CALCULATED PURGE (gal.) :	3.30
DEPTH TO WATER (feet) :	16.72	ACTUAL PURGE VOL. (gal.) :	3.00

DATE PURGED : 9.24.03 | END PURGE : 1154

DATE SAMPLED : 9.24.03 | SAMPLING TIME : 1159

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
1148	1.0	6.81	312	17.10	cloudy	mod
1151	2.0	6.74	296	16.90	cloudy	mod
1154	3.0	6.70	291	17.0°	cloudy	mod

OTHER: ____ ODOR: ____ (COBALT 0-100) (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)
____ Centrifugal Pump ____ Bailer (PVC)
____ Submersible Pump ____ Bailer (Stainless Steel)
X Disposal Bailer ____ Dedicated
Other: ____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)
____ Bomb Sampler ____ Bailer (Stainless Steel)
____ Dipper ____ Submersible Pump
X Disposal Bailer ____ Dedicated
Other: ____

WELL INTEGRITY: Good | LOCK: 0464

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ | pH 7 ____ / ____ | pH 10 ____ / ____ | pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt | REVIEWED BY ____ | PAGE 5 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 SAMPLE ID : MW6

PURGED BY : Paul Weinhardt CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X Surface Water ____ Leachate ____ Other ____

CASING DIAMETER (inches): 2 X 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL) : ____ VOLUME IN CASING (gal.) : 1.83

DEPTH OF WELL (feet) : 22.70 CALCULATED PURGE (gal.) : 2.50

DEPTH TO WATER (feet) : 17.78 ACTUAL PURGE VOL. (gal.) : 3.0

DATE PURGED : 9.24.03 END PURGE : 1045

DATE SAMPLED : 9.24.03 SAMPLING TIME : 1051

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
1037	1.0	6.73	367	18.2°	cloudy	mod
1041	2.0	6.64	358	17.9°	cloudy	mod
1045	3.0	6.61	352	17.7°	cloudy	mod

OTHER: ____ ODOR: ____ (COBALT 0-100) ____ (NTU 0-200) ____

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)

____ Centrifugal Pump ____ Bailer (PVC)

____ Submersible Pump ____ Bailer (Stainless Steel)

X Disposal Bailer ____ Dedicated

Other: ____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)

____ Bomb Sampler ____ Bailer (Stainless Steel)

____ Dipper ____ Submersible Pump

X Disposal Bailer ____ Dedicated

Other: ____

WELL INTEGRITY: Good LOCK: 0464

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt REVIEWED BY: ____ PAGE 6 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO : 792775 / 00002000 SAMPLE ID : MW1B

PURGED BY : Paul Weinhardt CLIENT NAME : Hard Chrome Engineering

SAMPLED BY : Paul Weinhardt LOCATION : 750 107th Avenue, Oakland

TYPE: Groundwater X Surface Water ____ Leachate ____ Other ____

CASING DIAMETER (inches): 2 X 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL) : ____ VOLUME IN CASING (gal.) : 229

DEPTH OF WELL (feet) : 30.00 CALCULATED PURGE (gal.) : 687

DEPTH TO WATER (feet) : 16.52 ACTUAL PURGE VOL. (gal.) : 675

DATE PURGED : 9.24.03 END PURGE : 1134

DATE SAMPLED : 9.24.03 SAMPLING TIME : 1139

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
1126	225	7.07	736	17.9°	~~cloudy~~	mod
1130	450	6.91	721	18.0°	~~yellow~~ yellow	mod
1134	675	6.86	716	18.1°	yellow	mod

OTHER: ____ ODOR: ____ ____ (COBALT 0-100) ____ (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)

____ Centrifugal Pump ____ Bailer (PVC)

____ Submersible Pump ____ Bailer (Stainless Steel)

X Disposal Bailer ____ Dedicated

Other: ____

SAMPLING EQUIPMENT

____ 2" Bladder Pump ____ Bailer (Teflon)

____ Bomb Sampler ____ Bailer (Stainless Steel)

____ Dipper ____ Submersible Pump

X Disposal Bailer ____ Dedicated

Other: ____

WELL INTEGRITY: 7000 LOCK: 0464

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt REVIEWED BY ____ PAGE 7 OF 7

Drum Inventory Record

792775 / 00002000
Project No

750 107th Ave., Oakland
Location

9-24-03
Date

Hard Chrome Engineering
Client

Paul Weinhardt
Sampler

PW

DRUM NUMBER OR ID	WELL OR SOURCE ID(s)	TYPE OF MATERIAL	AMOUNT OF MATERIAL IN DRUM	DATE ACCUMULATED OR GENERATED
		ONSITE		
	5 DRUMS			
#1 → #4	Monitoring Wells	WATER	3 Full 1 209AL	
#5	Soil	Soil	Full	

Sketch locations of drums, include drum ID's

COMMENTS:

Number of Drums From This Event

Total Number of Drums At Site 5

APPENDIX B

CERTIFIED ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY REPORTS

CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

October 16, 2003

CLS Work Order #: CMI0849
COC #: 209797

David Herzog
SHAW, E & I Inc. (Sacramento)
1326 North Market Blvd.
Sacramento, CA 95834

Project Name: Hard Chrome Engineering

Enclosed are the results of analyses for samples received by the laboratory on 09/24/03 15:45. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento) 1326 North Market Blvd. Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775/00002000 Project Manager: David Herzog	**CLS Work Order #: CMI0849** COC #: 209797

CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (CMI0849-01) Water Sampled: 09/24/03 09:26 Received: 09/24/03 15:45									
Arsenic	ND	5.0	µg/L	1	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	5.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	10	"	"	"	"	"	"	
Antimony	ND	50	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	**110**	20	"	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	"	
Cadmium	ND	10	"	"	"	"	"	"	
Cobalt	ND	20	"	"	"	"	"	"	
Chromium	ND	20	"	"	"	"	"	"	
Copper	ND	20	"	"	"	"	"	"	
Molybdenum	ND	20	"	"	"	"	"	"	
Nickel	**36**	20	"	"	"	"	"	"	
Silver	ND	10	"	"	"	"	"	"	
Vanadium	ND	20	"	"	"	"	"	"	
Zinc	ND	20	"	"	"	"	"	"	
Mercury	ND	0.20	"	"	CI32922	09/29/03	09/30/03	EPA 7470	
MW-2 (CMI0849-02) Water Sampled: 09/24/03 10:21 Received: 09/24/03 15:45									
Arsenic	ND	25	µg/L	5	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	25	"	"	"	"	"	"	
Selenium	ND	25	"	"	"	"	"	"	
Thallium	ND	50	"	"	"	"	"	"	
Antimony	**1700**	250	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	**220**	100	"	"	"	"	"	"	
Beryllium	ND	25	"	"	"	"	"	"	
Cadmium	ND	50	"	"	"	"	"	"	
Cobalt	ND	100	"	"	"	"	"	"	
Chromium	**750000**	100	"	"	"	"	"	"	
Copper	**9400**	100	"	"	"	"	"	"	
Molybdenum	ND	100	"	"	"	"	"	"	
Nickel	**1300**	100	"	"	"	"	"	"	
Silver	ND	50	"	"	"	"	"	"	
Vanadium	ND	100	"	"	"	"	"	"	
Zinc	**1300**	100	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento)
1326 North Market Blvd.
Sacramento, CA 95834

Project: Hard Chrome Engineering
Project Number: 792775/00002000
Project Manager: David Herzog

CLS Work Order #: CMI0849
COC #: 209797

CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (CMI0849-02) Water Sampled: 09/24/03 10:21 Received: 09/24/03 15:45									
Mercury	**0.75**	0.20	µg/L	1	CI32922	09/29/03	09/30/03	EPA 7470	
MW-3 (CMI0849-03) Water Sampled: 09/24/03 11:14 Received: 09/24/03 15:45									
Arsenic	ND	5.0	µg/L	1	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	5.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	10	"	"	"	"	"	"	
Antimony	ND	50	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	**66**	20	"	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	"	
Cadmium	ND	10	"	"	"	"	"	"	
Cobalt	ND	20	"	"	"	"	"	"	
Chromium	**83**	20	"	"	"	"	"	"	
Copper	ND	20	"	"	"	"	"	"	
Molybdenum	ND	20	"	"	"	"	"	"	
Nickel	ND	20	"	"	"	"	"	"	
Silver	ND	10	"	"	"	"	"	"	
Vanadium	ND	20	"	"	"	"	"	"	
Zinc	ND	20	"	"	"	"	"	"	
Mercury	ND	0.20	"	"	CI32922	09/29/03	09/30/03	EPA 7470	
MW-4 (CMI0849-04) Water Sampled: 09/24/03 09:51 Received: 09/24/03 15:45									
Arsenic	ND	5.0	µg/L	1	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	5.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	10	"	"	"	"	"	"	
Antimony	ND	50	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	77	20	"	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	"	
Cadmium	ND	10	"	"	"	"	"	"	
Cobalt	ND	20	"	"	"	"	"	"	
Chromium	**34**	20	"	"	"	"	"	"	
Copper	ND	20	"	"	"	"	"	"	
Molybdenum	ND	20	"	"	"	"	"	"	
Nickel	**22**	20	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento) 1326 North Market Blvd. Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775/00002000 Project Manager: David Herzog	**CLS Work Order #: CMI0849** COC #: 209797

CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (CMI0849-04) Water Sampled: 09/24/03 09:51 Received: 09/24/03 15:45									
Silver	ND	10	µg/L	1	CI32515	09/25/03	09/26/03	EPA 6010B	
Vanadium	ND	20	"	"	"	"	"	"	
Zinc	ND	20	"	"	"	"	"	"	
Mercury	ND	0.20	"	"	CI32922	09/29/03	09/30/03	EPA 7470	
MW-5 (CMI0849-05) Water Sampled: 09/24/03 11:59 Received: 09/24/03 15:45									
Arsenic	ND	5.0	µg/L	1	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	5.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	10	"	"	"	"	"	"	
Antimony	ND	50	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	**100**	20	"	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	"	
Cadmium	ND	10	"	"	"	"	"	"	
Cobalt	ND	20	"	"	"	"	"	"	
Chromium	**9700**	20	"	"	"	"	"	"	
Copper	ND	20	"	"	"	"	"	"	
Molybdenum	ND	20	"	"	"	"	"	"	
Nickel	ND	20	"	"	"	"	"	"	
Silver	ND	10	"	"	"	"	"	"	
Vanadium	ND	20	"	"	"	"	"	"	
Zinc	ND	20	"	"	"	"	"	"	
Mercury	ND	0.20	"	"	CI32922	09/29/03	09/30/03	EPA 7470	
MW-6 (CMI0849-06) Water Sampled: 09/24/03 10:51 Received: 09/24/03 15:45									
Arsenic	ND	5.0	µg/L	1	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	5.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	10	"	"	"	"	"	"	
Antimony	ND	50	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	**62**	20	"	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	"	
Cadmium	ND	10	"	"	"	"	"	"	
Cobalt	ND	20	"	"	"	"	"	"	
Chromium	**34**	20	"	"	"	"	"	"	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento) 1326 North Market Blvd. Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775/00002000 Project Manager: David Herzog	**CLS Work Order #: CMI0849** COC #: 209797

CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (CMI0849-06) Water Sampled: 09/24/03 10:51 Received: 09/24/03 15:45									
Copper	ND	20	µg/L	1	CI32515	09/25/03	09/26/03	EPA 6010B	
Molybdenum	ND	20	"	"	"	"	"	"	
Nickel	ND	20	"	"	"	"	"	"	
Silver	ND	10	"	"	"	"	"	"	
Vanadium	ND	20	"	"	"	"	"	"	
Zinc	ND	20	"	"	"	"	"	"	
Mercury	ND	0.20	"	"	CI32922	09/29/03	09/30/03	EPA 7470	
MW-1B (CMI0849-07) Water Sampled: 09/24/03 11:39 Received: 09/24/03 15:45									
Arsenic	ND	5.0	µg/L	1	CI32514	09/25/03	09/25/03	EPA 6020	
Lead	ND	5.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	10	"	"	"	"	"	"	
Antimony	**59**	50	"	"	CI32515	09/25/03	09/26/03	EPA 6010B	
Barium	**61**	20	"	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	"	
Cadmium	ND	10	"	"	"	"	"	"	
Cobalt	ND	20	"	"	"	"	"	"	
Chromium	**28000**	20	"	"	"	"	"	"	
Copper	ND	20	"	"	"	"	"	"	
Molybdenum	ND	20	"	"	"	"	"	"	
Nickel	ND	20	"	"	"	"	"	"	
Silver	ND	10	"	"	"	"	"	"	
Vanadium	ND	20	"	"	"	"	"	"	
Zinc	ND	20	"	"	"	"	"	"	
Mercury	ND	0.20	"	"	CI32922	09/29/03	09/30/03	EPA 7470	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento)
1326 North Market Blvd.
Sacramento, CA 95834

Project: Hard Chrome Engineering
Project Number: 792775/00002000
Project Manager: David Herzog

CLS Work Order #: CMI0849
COC #: 209797

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (CMI0849-01) Water	**Sampled: 09/24/03 09:26**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	ND	10	µg/L	1	CI32511	09/25/03	09/25/03	EPA 7196A	
MW-2 (CMI0849-02) Water	**Sampled: 09/24/03 10:21**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	**650000**	50000	µg/L	5000	CI32511	09/25/03	09/25/03	EPA 7196A	
MW-3 (CMI0849-03) Water	**Sampled: 09/24/03 11:14**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	**22**	10	µg/L	1	CI32511	09/25/03	09/25/03	EPA 7196A	
MW-4 (CMI0849-04) Water	**Sampled: 09/24/03 09:51**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	ND	10	µg/L	1	CI32511	09/25/03	09/25/03	EPA 7196A	
MW-5 (CMI0849-05) Water	**Sampled: 09/24/03 11:59**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	**10000**	400	µg/L	40	CI32511	09/25/03	09/25/03	EPA 7196A	
MW-6 (CMI0849-06) Water	**Sampled: 09/24/03 10:51**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	**28**	10	µg/L	1	CI32511	09/25/03	09/25/03	EPA 7196A	
MW-1B (CMI0849-07) Water	**Sampled: 09/24/03 11:39**	**Received: 09/24/03 15:45**							
Hexavalent Chromium	**28000**	1000	µg/L	100	CI32511	09/25/03	09/25/03	EPA 7196A	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento) 1326 North Market Blvd. Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775/00002000 Project Manager: David Herzog	**CLS Work Order #: CMI0849** COC #: 209797

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CI32514 - EPA 3020A										
Blank (CI32514-BLK1)				Prepared & Analyzed: 09/25/03						
Arsenic	ND	5.0	µg/L							
Lead	ND	5.0	"							
Selenium	ND	5.0	"							
Thallium	ND	10	"							
LCS (CI32514-BS1)				Prepared & Analyzed: 09/25/03						
Arsenic	92.6	5.0	µg/L	100		92.6	75-125			
Lead	93.6	5.0	"	100		93.6	75-125			
Selenium	95.8	5.0	"	100		95.8	75-125			
Thallium	94.8	10	"	100		94.8	75-125			
LCS Dup (CI32514-BSD1)				Prepared & Analyzed: 09/25/03						
Arsenic	94.7	5.0	µg/L	100		94.7	75-125	2.24	25	
Lead	95.0	5.0	"	100		95.0	75-125	1.48	25	
Selenium	97.6	5.0	"	100		97.6	75-125	1.86	25	
Thallium	96.8	10	"	100		96.8	75-125	2.09	25	
Matrix Spike (CI32514-MS1)		**Source: CMI0834-01**		Prepared & Analyzed: 09/25/03						
Arsenic	97.9	5.0	µg/L	100	1.4	96.5	75-125			
Lead	101	5.0	"	100	0.54	100	75-125			
Selenium	100	5.0	"	100	ND	100	75-125			
Thallium	102	10	"	100	0.13	102	75-125			
Matrix Spike Dup (CI32514-MSD1)		**Source: CMI0834-01**		Prepared & Analyzed: 09/25/03						
Arsenic	94.3	5.0	µg/L	100	1.4	92.9	75-125	3.75	25	
Lead	98.2	5.0	"	100	0.54	97.7	75-125	2.81	25	
Selenium	97.4	5.0	"	100	ND	97.4	75-125	2.63	25	
Thallium	99.2	10	"	100	0.13	99.1	75-125	2.78	25	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento)
1326 North Market Blvd.
Sacramento, CA 95834

Project: Hard Chrome Engineering
Project Number: 792775/00002000
Project Manager: David Herzog

CLS Work Order #: CMI0849
COC #: 209797

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CI32515 - EPA 3010A										
Blank (CI32515-BLK1)				Prepared & Analyzed: 09/25/03						
Antimony	ND	50	µg/L							
Barium	ND	20	"							
Beryllium	ND	5.0	"							
Cadmium	ND	10	"							
Cobalt	ND	20	"							
Chromium	ND	20	"							
Copper	ND	20	"							
Molybdenum	ND	20	"							
Nickel	ND	20	"							
Silver	ND	10	"							
Vanadium	ND	20	"							
Zinc	ND	20	"							
LCS (CI32515-BS1)				Prepared & Analyzed: 09/25/03						
Antimony	503	50	µg/L	500		101	80-120			
Barium	1860	20	"	2000		93.0	80-120			
Beryllium	50.8	5.0	"	50.0		102	80-120			
Cadmium	42.0	10	"	50.0		84.0	80-120			
Cobalt	499	20	"	500		99.8	80-120			
Chromium	208	20	"	200		104	80-120			
Copper	237	20	"	250		94.8	80-120			
Molybdenum	503	20	"	500		101	80-120			
Nickel	491	20	"	500		98.2	80-120			
Silver	41.0	10	"	50.0		82.0	80-120			
Vanadium	480	20	"	500		96.0	80-120			
Zinc	496	20	"	500		99.2	80-120			
LCS Dup (CI32515-BSD1)				Prepared & Analyzed: 09/25/03						
Antimony	492	50	µg/L	500		98.4	80-120	2.21	25	
Barium	1860	20	"	2000		93.0	80-120	0.00	25	
Beryllium	50.8	5.0	"	50.0		102	80-120	0.00	25	
Cadmium	40.6	10	"	50.0		81.2	80-120	3.39	25	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento)
1326 North Market Blvd.
Sacramento, CA 95834

Project: Hard Chrome Engineering
Project Number: 792775/00002000
Project Manager: David Herzog

CLS Work Order #: CMI0849
COC #: 209797

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CI32515 - EPA 3010A										
LCS Dup (CI32515-BSD1)				Prepared & Analyzed: 09/25/03						
Cobalt	501	20	µg/L	500		100	80-120	0.400	25	
Chromium	211	20	"	200		106	80-120	1.43	25	
Copper	238	20	"	250		95.2	80-120	0.421	25	
Molybdenum	505	20	"	500		101	80-120	0.397	25	
Nickel	493	20	"	500		98.6	80-120	0.407	25	
Silver	39.2	10	"	50.0		78.4	80-120	4.49	25	QM-08
Vanadium	482	20	"	500		96.4	80-120	0.416	25	
Zinc	502	20	"	500		100	80-120	1.20	25	
Matrix Spike (CI32515-MS1)		Source: CMI0834-01		Prepared & Analyzed: 09/25/03						
Antimony	504	50	µg/L	500	11	98.6	75-125			
Barium	1860	20	"	2000	3.9	92.8	75-125			
Beryllium	51.0	5.0	"	50.0	0.13	102	75-125			
Cadmium	39.6	10	"	50.0	ND	79.2	75-125			
Cobalt	494	20	"	500	ND	98.8	75-125			
Chromium	209	20	"	200	ND	104	75-125			
Copper	240	20	"	250	6.0	93.6	75-125			
Molybdenum	497	20	"	500	1.3	99.1	75-125			
Nickel	490	20	"	500	ND	98.0	75-125			
Silver	45.5	10	"	50.0	5.0	81.0	75-125			
Vanadium	476	20	"	500	1.6	94.9	75-125			
Zinc	503	20	"	500	11	98.4	75-125			
Matrix Spike Dup (CI32515-MSD1)		Source: CMI0834-01		Prepared & Analyzed: 09/25/03						
Antimony	501	50	µg/L	500	11	98.0	75-125	0.597	25	
Barium	1870	20	"	2000	3.9	93.3	75-125	0.536	25	
Beryllium	51.6	5.0	"	50.0	0.13	103	75-125	1.17	25	
Cadmium	41.8	10	"	50.0	ND	83.6	75-125	5.41	25	
Cobalt	497	20	"	500	ND	99.4	75-125	0.605	25	
Chromium	211	20	"	200	ND	106	75-125	0.952	25	
Copper	244	20	"	250	6.0	95.2	75-125	1.65	25	
Molybdenum	504	20	"	500	1.3	101	75-125	1.40	25	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento) 1326 North Market Blvd. Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775/00002000 Project Manager: David Herzog	**CLS Work Order #: CMI0849** COC #: 209797

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CI32515 - EPA 3010A										
Matrix Spike Dup (CI32515-MSD1)	**Source: CMI0834-01**			Prepared & Analyzed: 09/25/03						
Nickel	490	20	µg/L	500	ND	98.0	75-125	0.00	25	
Silver	46.0	10	"	50.0	5.0	82.0	75-125	1.09	25	
Vanadium	480	20	"	500	1.6	95.7	75-125	0.837	25	
Zinc	508	20	"	500	11	99.4	75-125	0.989	25	
Batch CI32922 - EPA 7470A										
Blank (CI32922-BLK1)				Prepared: 09/29/03 Analyzed: 09/30/03						
Mercury	ND	0.20	µg/L							
LCS (CI32922-BS1)				Prepared: 09/29/03 Analyzed: 09/30/03						
Mercury	5.85	0.20	µg/L	5.00		117	75-125			
LCS Dup (CI32922-BSD1)				Prepared: 09/29/03 Analyzed: 09/30/03						
Mercury	5.30	0.20	µg/L	5.00		106	75-125	9.87	25	
Matrix Spike (CI32922-MS1)	**Source: CMI0607-05**			Prepared: 09/29/03 Analyzed: 09/30/03						
Mercury	5.63	0.20	µg/L	5.00	ND	113	75-125			
Matrix Spike Dup (CI32922-MSD1)	**Source: CMI0607-05**			Prepared: 09/29/03 Analyzed: 09/30/03						
Mercury	5.31	0.20	µg/L	5.00	ND	106	75-125	5.85	25	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento)
1326 North Market Blvd.
Sacramento, CA 95834

Project: Hard Chrome Engineering
Project Number: 792775/00002000
Project Manager: David Herzog

CLS Work Order #: CMI0849
COC #: 209797

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch CI32511 - General Preparation										
Blank (CI32511-BLK1)				Prepared & Analyzed: 09/25/03						
Hexavalent Chromium	ND	10	µg/L							
LCS (CI32511-BS1)				Prepared & Analyzed: 09/25/03						
Hexavalent Chromium	258	10	µg/L	250		103	85-115			
LCS Dup (CI32511-BSD1)				Prepared & Analyzed: 09/25/03						
Hexavalent Chromium	261	10	µg/L	250		104	85-115	1.16	20	
Matrix Spike (CI32511-MS1)		Source: CMI0849-01		Prepared & Analyzed: 09/25/03						
Hexavalent Chromium	253	10	µg/L	250	ND	101	85-115			
Matrix Spike Dup (CI32511-MSD1)		Source: CMI0849-01		Prepared & Analyzed: 09/25/03						
Hexavalent Chromium	260	10	µg/L	250	ND	104	85-115	2.73	20	

CALIFORNIA LABORATORY SERVICES

10/16/03 13:09

SHAW, E & I Inc. (Sacramento) 1326 North Market Blvd. Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775/00002000 Project Manager: David Herzog	**CLS Work Order #: CMI0849** COC #: 209797

Notes and Definitions

QM-08	The spike recovery was outside acceptance limits for the LCS or LCSD. The batch was accepted based on acceptable MS/MSD recoveries & RPD's.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Purchase Order: 209797

Lab: CLS Lab

, CA 95834

& Infrastructure, Inc.
Boulevard
95834
7 / FAX: (916) 565-4356

Paul Wenhardt

L.

Sampler's

Analysis Requested

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Cam 17 Metals (Field Filtered)	Hexavalent Chromium by EPA Method 7196 (24-Hr Hold) (Field Filtere	REMARKS
						3	3	Container Types
						HNO3	NP	Preservations
MW-1	9-24	926		water	2	1	1	Pres 10 C
MW-2		1024		water	2	1	1	
MW-3		1114		water	2	1	1	
MW-4		951		water	2	1	1	
MW-5		1159		water	2	1	1	
MW-6		1051		water	2	1	1	
MW-1B		1139		water	2	1	1	

RELINQUISHED BY
Signature: Paul Wenhardt
Printed Name: Paul Wenhardt
Firm: SAIC EFI
Date/Time: 9-24-03

RECEIVED BY
Signature:
Printed Name: Lon Rider
Firm: CLS
Date/Time:

RELINQUISHED BY
Signature:

RECEIVED BY
Signature:

RELINQUISHED BY
Signature:
Printed Name:
Firm:
Date/Time:

RECEIVED BY
Signature:
Printed Name:
Firm:
Date/Time:

Special Instructions/Comments:

Chrom VI has a 24 hour hold time.
All samples need to be field filtered.

TURN AROUND TIME

___ 24 hr ___ 48 hr ___ 5 day
X Standard (~10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
___ Requested Report Date:

REPORT REQUIREMENTS

X I. Routine Report
___ II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

CLS
3249 Fitzgerald Road
Rancho Cordova, Calif 95742
916-638-7301 / Fx: 638-4510
Ray Oslowski

Container Types Key:
40 ml VOA: 1
250 ml LPE: 2
500 ml LPE: 3
1 liter HDPE: 4
500 ml glass: 5
1 liter glass:
2x6 s/s ring: