

**SEMI-ANNUAL
THIRD QUARTER 2000 MONITORING REPORT**

HARD CHROME ENGINEERING

OAKLAND, CALIFORNIA

00 OCT 16 PM 4:13
ENVIRONMENTAL
PROTECTION

Prepared for
McLemore Trust
October 12, 2000

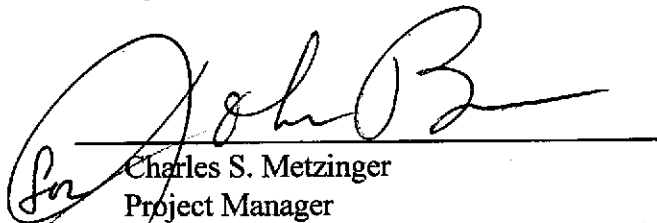
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Project 792775

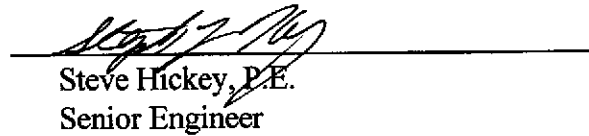
**Semi-Annual
Third Quarter 2000 Monitoring Report
Hard Chrome Engineering
Oakland, California**

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

IT/EMCON



Charles S. Metzinger
Project Manager



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Senior Engineer

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INTRODUCTION

The following report documents the semi-annual third quarter 2000 monitoring event conducted at the Hard Chrome Engineering facility, located 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, and 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).

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SAMPLING AND ANALYSIS PROGRAM

IT/EMCON 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 and MW-1B 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 20, 2000 were filtered in the field.

Groundwater samples collected from wells MW-1 through MW-6 and MW-1B were submitted to Sequoia Analytical (a state-certified laboratory) and analyzed for the CAM 17 listed dissolved metals using USEPA Series Methods 6000/7000 and 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.

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RESULTS

Groundwater Flow and Gradient

Groundwater during the third quarter 2000 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 2000 monitoring event, groundwater flowed to the northwest with a gradient of approximately 0.033 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.

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Groundwater Analytical Results

Concentrations of antimony detected in MW-1B and MW-2 ranged from 0.56 milligrams per liter (mg/L) and 2.67 mg/L. Concentrations of barium detected in MW-1, MW-3, MW-4, and MW-6 ranged from 0.0553 mg/L to 0.105 mg/L. Chromium detected in MW-1B, MW-2, MW-3, MW-5, and MW-6, ranged from 0.00665 mg/L to 598 mg/L. Hexavalent chromium detected in MW-1B, MW-2, and MW-5 ranged from 81.4 mg/L to 611 mg/L. Zinc detected in MW-2 and MW-6 ranged from 0.0133 mg/L to 1.12 mg/L. Copper, mercury, and nickel were detected in MW-2 at concentrations of 7.06 mg/L, 0.00078 mg/L, and 1.04 mg/L, respectively. Table 2 summarizes the groundwater analytical results.

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SUMMARY AND CONCLUSIONS

Based on analytical results collected from wells MW-1B and MW-1 through MW-6 on September 20, 2000 groundwater beneath the site is impacted with total and hexavalent chromium. Additional metals detected include antimony, barium, copper, mercury, nickel and zinc. Impacted water extends from the existing sump (well MW-2), northwest (hydraulically downgradient) towards 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 2000 monitoring event, the monitoring well exhibiting the greatest chromium impact was well MW-2, located hydraulically downgradient from the sump. Monitoring wells MW-5 and MW-1B also showed some chromium impact.

Although, concentrations of total chromium in on-site wells MW-1B, MW-2, and MW-5 currently exceed the maximum contaminant level (MCL) for this compound (.05 mg/L), they have significantly decreased from historical levels. Historical analytical results are contained in Table 2.

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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 20, 2000**

Sample Designation	Top of Casing (feet/SSR)	Depth to Water (feet)	Groundwater Elevation (feet/SSR)
MW-1	100.23	17.12	83.11
MW-1B	99.01	17.89	81.12
MW-2	100.38	17.48	82.90
MW-3	100.37	17.34	83.03
MW-4	100.30	18.88	81.42
MW-5	99.29	18.11	81.18
MW-6	100.48	17.57	82.91

feet/SSR = feet with respect to the site specific benchmark

Table 2

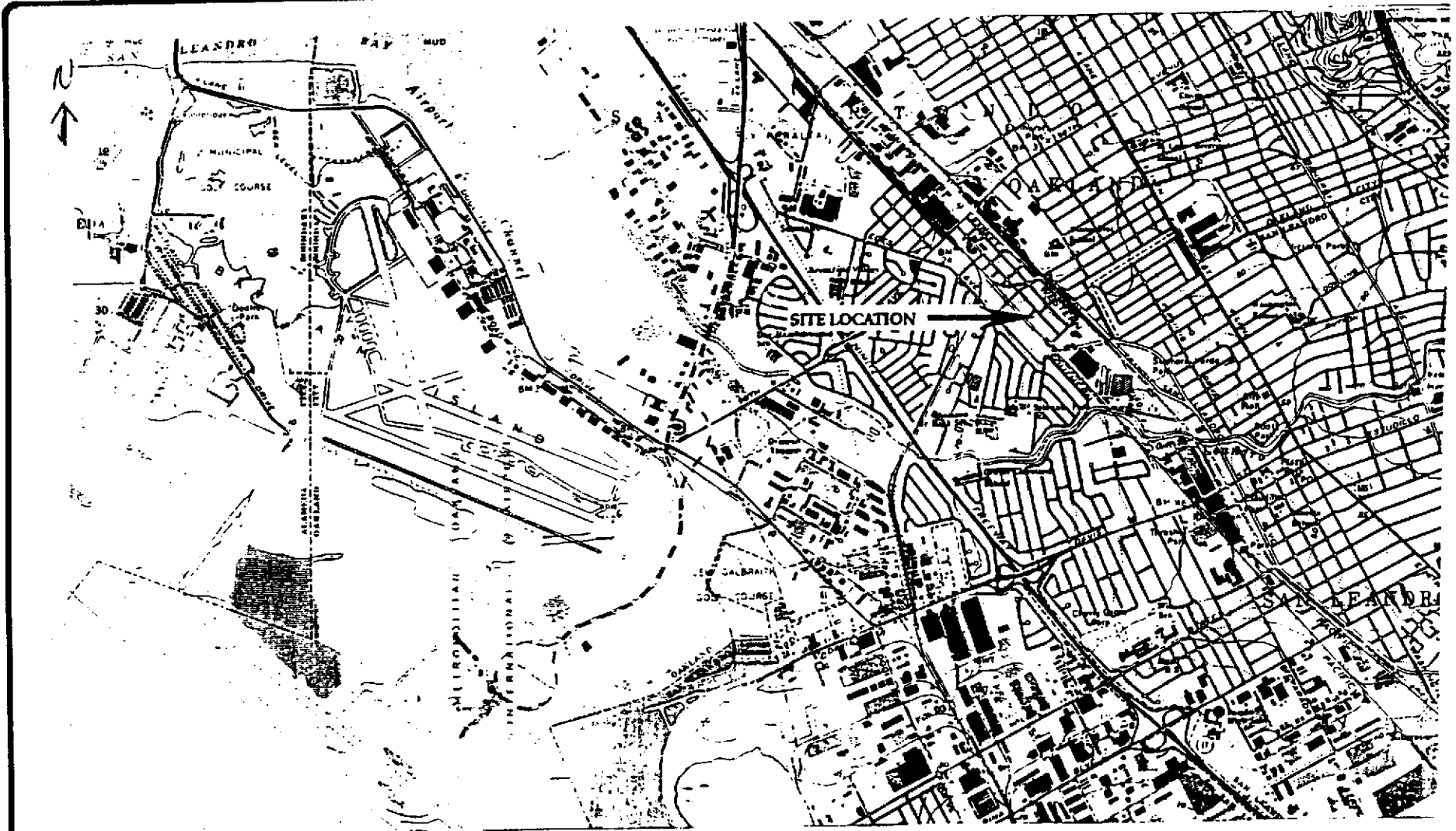
**Groundwater Analytical Results
Hard Chrome Engineering
(Units: mg/L, unless noted)**

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-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-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-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-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

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-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-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
MCL		0.006	0.05	1.0	0.004	0.005	0.05	—	—	1.0 **	—	0.002	—	0.1	0.05	0.1 **	0.002	—	5.0 **	—
<p>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.</p> <p>mg/L = Milligrams per liter</p> <p>NA = Not Analyzed.</p> <p>* Total dissolved solids and total suspended solids were analyzed and detected at concentrations of 5,200 and 13,000 mg/L.</p> <p>MCL = California primary maximum contaminant level (MCL).</p> <p>** = Secondary MCL</p> <p>— = MCL not established.</p>																				



McLEMORE TRUST
 HARD CHROME ENG. INC.,
 750 1107th AVENUE, OAKLAND, CALIFORNIA

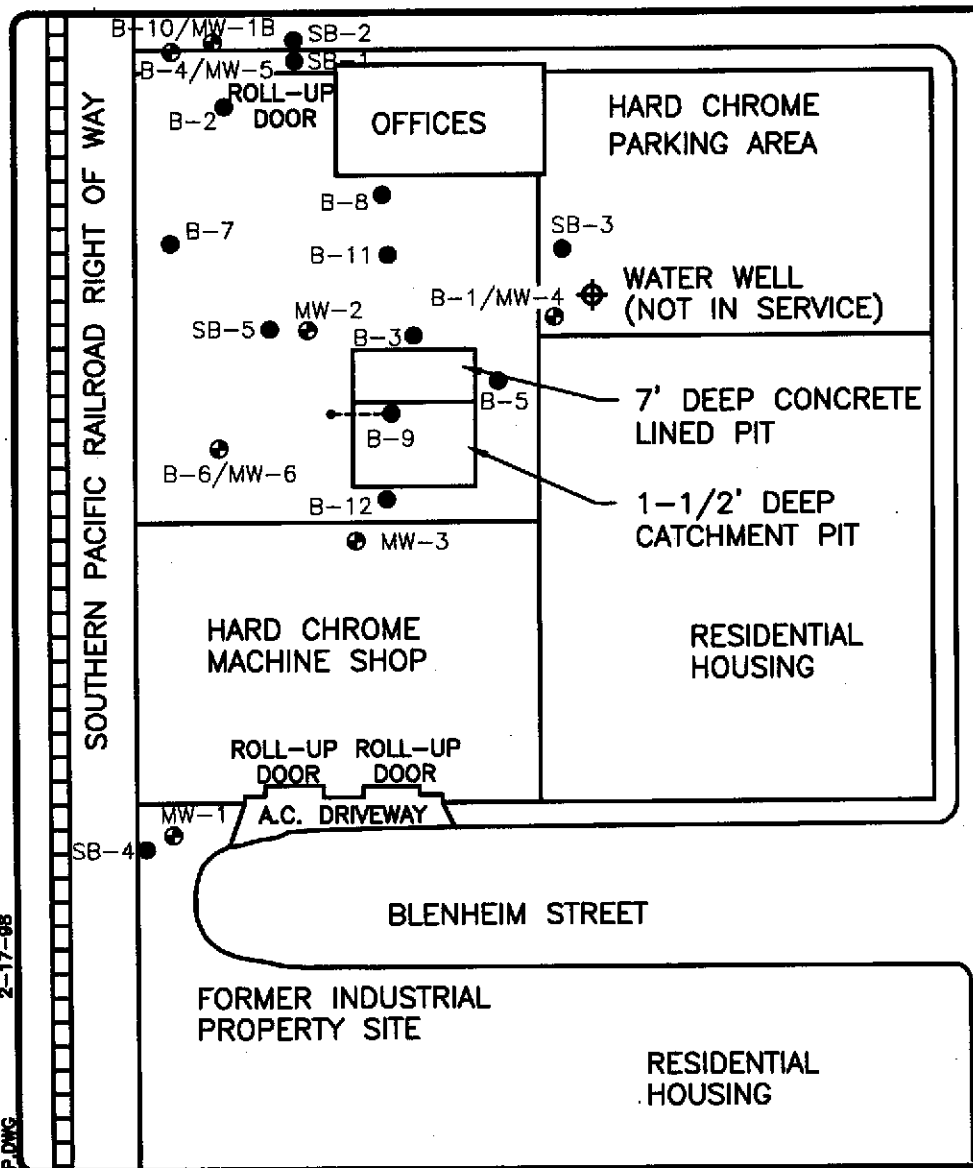
SITE LOCATION MAP

FIGURE

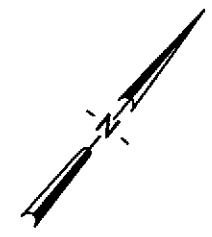
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PROJECT NO.
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2-17-98
LANDSCAPE SITE MAP.DWG

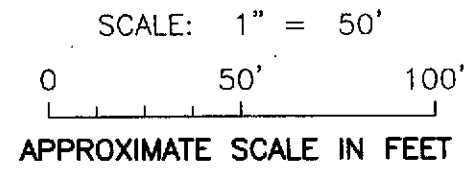


PEARMAIN STREET



LEGEND

- RESIDENTIAL HOUSING ● APPROXIMATE LOCATION OF SOIL BORINGS
- APPROXIMATE LOCATION OF ANGLED SOIL BORING
- GROUNDWATER MONITORING WELLS



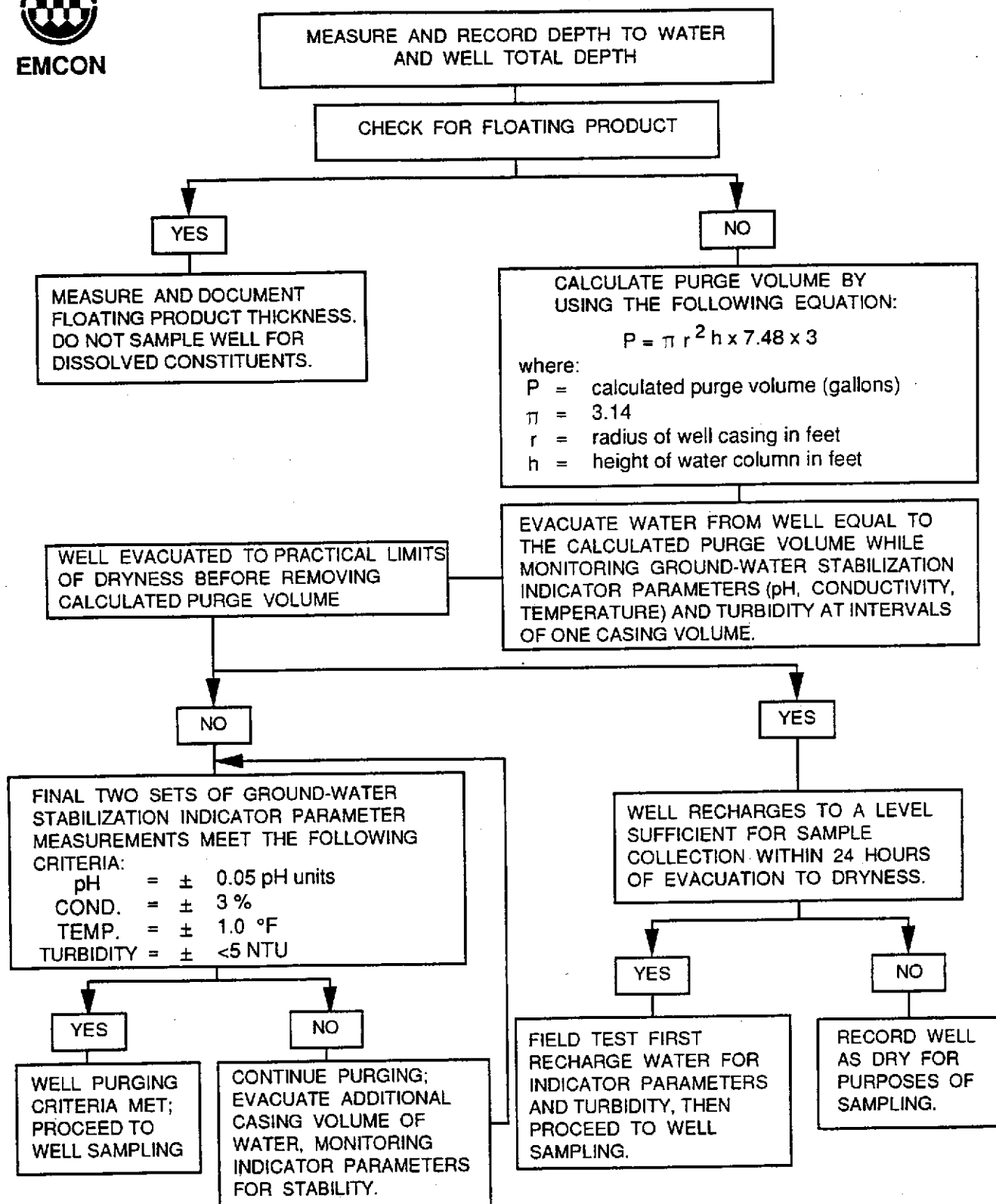
MCLEMORE TRUST
 HARD CHROME ENG. INC.,
 750 107TH AVENUE
 OAKLAND, CALIFORNIA
 SITE MAP

FIGURE
 2
 PROJECT NO.
 792775



EMCON

MONITORING WELL PURGING PROTOCOL

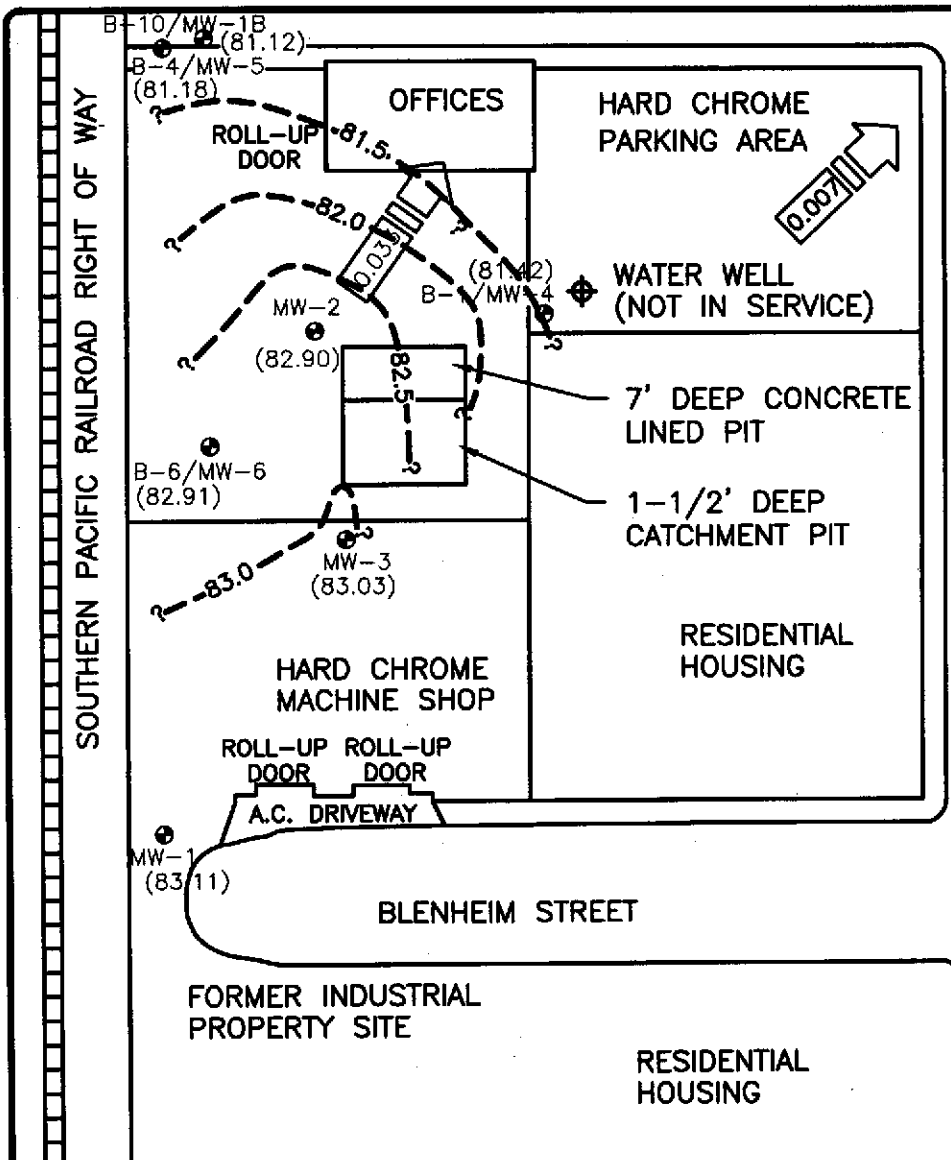


EMCON

MONITORING WELL PURGING PROTOCOL

FIGURE

3



- LEGEND**
- GROUNDWATER MONITORING WELLS
 - (81.12) GROUNDWATER ELEVATION (FEET) SEPTEMBER 20, 2000
 - GROUNDWATER CONTOURS SEPTEMBER 20, 2000
 - 0.033 → GROUNDWATER FLOW DIRECTION

RESIDENTIAL HOUSING

SCALE: 1" = 50'

0 50' 100'

APPROXIMATE SCALE IN FEET



MCLEMORE TRUST
 HARD CHROME ENG. INC.,
 750 107TH AVENUE
 OAKLAND, CALIFORNIA
 GROUNDWATER CONTOUR MAP
 SEPTEMBER 20, 2000

FIGURE
 4
 PROJECT NO.
 792775

APPENDIX A

FIELD REPORT AND FIELD DATA SHEETS

**FIELD REPORT
WATER LEVEL / FLOATING PRODUCT
SURVEY**

IT / EMCON
1433 North Market Boulevard
Sacramento, California 95834
(916) 928-3300

PROJECT NO : 792775

LOCATION : 750 107th Avenue, Oakland

DATE: 9/20/00

CLIENT : Hard Chrome Engineering

SAMPLER : Dwight

DAY OF WEEK: WEDNESDAY

WELL ID	CASING ELEVATION (Feet, MSL)	TOTAL DEPTH (Feet)	DEPTH TO WATER (Feet)	DEPTH TO FLOATING PRODUCT (Feet)	FLOATING PRODUCT THICKNESS (Feet)	COMMENTS
MW-1		21.4	17.12	N.D		
MW-2		23.9	17.48			
MW-3		23.5	17.34			
MW-4		22.9	18.88			
MW-5		23.2	18.11			
MW-6		22.7	17.57			
MW-1B		30.0	17.89			

Comments :



 Signature

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO: 792775
 PURGED BY: D. Wagoner
 SAMPLED BY: F

SAMPLE ID: MW-1
 CLIENT NAME: Hard Chrome Engineering
 LOCATION: 750 107th Avenue, Oakland

TYPE: Groundwater Surface Water Leachate Other
 CASING DIAMETER (inches): 2 1/2 3 4 4.5 6 Other

CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): 1.5
 DEPTH OF WELL (feet): 29.4 CALCULATED PURGE (gal.): 4.5
 DEPTH TO WATER (feet): 17.12 ACTUAL PURGE VOL. (gal.): 4.5

DATE PURGED: 9/20/00 END PURGE: 90'
 DATE SAMPLED: SAMPLING TIME: 9:12

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>900</u>	<u>1.5</u>	<u>6.28</u>	<u>590</u>	<u>64.2</u>	<u>Brown</u>	<u>High</u>
<u>902</u>	<u>3.0</u>	<u>6.22</u>	<u>6030</u>	<u>64.0</u>	<u>L</u>	<u>L</u>
<u>904</u>	<u>4.5</u>	<u>6.31</u>	<u>6060</u>	<u>64.0</u>	<u>L</u>	<u>L</u>

OTHER: ODOR: None
 (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)
 Well Wizard Dedicated
 Other:

SAMPLING EQUIPMENT

2" Bladder Pump Bailer (Teflon)
 Bomb Sampler Bailer (Stainless Steel)
 Dipper Submersible Pump
 Well Wizard Dedicated
 Other:

WELL INTEGRITY: Good LOCK: OK

REMARKS:

pH, E.C., Temp. Meter Calibration: Date: 9/21/00 Time: 8:49 Meter Serial No.: 232
 E.C. 1000 1387, 1413 pH 7 7.12, 7.00 pH 10 9.89, 10.00 pH 4 4.09, 1

Temperature °F 79.2
 SIGNATURE: [Signature] REVIEWED BY: [Signature] PAGE 1 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO: 792775
 PURGED BY: D. Winters
 SAMPLED BY: F

SAMPLE ID: MW-2
 CLIENT NAME: Hard Chrome Engineering
 LOCATION: 750 107th Avenue, Oakland

TYPE: Groundwater Surface Water Leachate Other
 CASING DIAMETER (inches): 2 3 4 4.5 6 Other

CASING ELEVATION (feet/MSL): _____ VOLUME IN CASING (gal.): 1.0
 DEPTH OF WELL (feet): 23.9 CALCULATED PURGE (gal.): 3.0
 DEPTH TO WATER (feet): 17.48 ACTUAL PURGE VOL. (gal.): 3.0

DATE PURGED: 9/29/00 END PURGE: 1200
 DATE SAMPLED: F SAMPLING TIME: 1210

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1150</u>	<u>1.0</u>	<u>4.25</u>	<u>2746</u>	<u>66.4</u>	_____	_____
<u>1159</u>	<u>2.0</u>	<u>3.72</u>	<u>2776</u>	<u>65.7</u>	_____	_____
<u>1200</u>	<u>3.0</u>	<u>3.49</u>	<u>3193</u>	<u>65.4</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____

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)
 Well Wizard Dedicated
 Other: _____

SAMPLING EQUIPMENT

2" Bladder Pump Bailer (Teflon)
 Bomb Sampler Bailer (Stainless Steel)
 Dipper Submersible Pump
 Well Wizard Dedicated
 Other: DIPPER/SAMPLER

WELL INTEGRITY: GOOD LOCK: 0464

REMARKS: _____

pH, E.C., Temp. Meter Calibration: Date: _____ Time: 5:00 Meter Serial No.: _____
 E.C. 1000 _____ pH _____ pH 10 _____ pH 4 _____
 Temperature °F _____

SIGNATURE: [Signature] REVIEWED BY: [Signature] PAGE 3 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO: 792775
 PURGED BY: Dwight
 SAMPLED BY: [Signature]

SAMPLE ID: MW-3
 CLIENT NAME: Hard Chrome Engineering
 LOCATION: 750 107th Avenue, Oakland

TYPE: Groundwater Surface Water Leachate Other
 CASING DIAMETER (inches): 2 3 4 4.5 6 Other

CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): 1.0
 DEPTH OF WELL (feet): 23.5 CALCULATED PURGE (gal.): 3.0
 DEPTH TO WATER (feet): 17.34 ACTUAL PURGE VOL. (gal.): 3.0

DATE PURGED: 8/29/00 END PURGE: 1020
 DATE SAMPLED: SAMPLING TIME: 1037

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1018	1.0	6.61	389.0	66.1	Brown	1 mg/L
1019	2.0	6.57	394.0	65.6		
1020	3.0	6.56	398.0	65.2		

OTHER: ODOR: none
 (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)
 Centrifugal Pump Bailer (PVC)
 Submersible Pump Bailer (Stainless Steel)
 Well Wizard[®] Dedicated
 Other:

2" Bladder Pump Bailer (Teflon)
 Bomb Sampler Bailer (Stainless Steel)
 Dipper Submersible Pump
 Well Wizard[®] Dedicated
 Other:

WELL INTEGRITY: Good LOCK: 0464

REMARKS:

pH, E.C., Temp. Meter Calibration: Date: SEE MW Meter Serial No.:
 E.C. 1000 / pH 7 / pH 10 / pH 4 /

Temperature °F:
 SIGNATURE: [Signature] REVIEWED BY: [Signature] PAGE 4 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO: 792775
 PURGED BY: D. W. P. 1000
 SAMPLED BY: F

SAMPLE ID: MW-4
 CLIENT NAME: Hard Chrome Engineering
 LOCATION: 750 107th Avenue, Oakland

TYPE: Groundwater Surface Water Leachate Other
 CASING DIAMETER (inches): 2 3 4 4.5 6 Other

CASING ELEVATION (feet/MSL): VOLUME IN CASING (gal.): 1.0
 DEPTH OF WELL (feet): 22.9 CALCULATED PURGE (gal.): 3.0
 DEPTH TO WATER (feet): 18.88 ACTUAL PURGE VOL. (gal.): 3.0

DATE PURGED: 9/26/00 END PURGE: 957
 DATE SAMPLED: SAMPLING TIME: 100Y

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
955	1.0	6.69	408.0	66.2	Brown	H/V
956	2.0	6.63	405.0	65.3	F	L
957	3.0	6.62	405.0	64.8	F	L

OTHER: ODOR: None
(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)
 Well Wizard[®] Dedicated
 Other:

SAMPLING EQUIPMENT

2" Bladder Pump Bailer (Teflon)
 Bomb Sampler Bailer (Stainless Steel)
 Dipper Submersible Pump
 Well Wizard[®] Dedicated
 Other:

WELL INTEGRITY: Good LOCK: DWP

REMARKS:

pH, E.C., Temp. Meter Calibration: Date: SEE TIME MW-1 Meter Serial No.:
 E.C. 1000 pH 7 pH 10 pH 4

Temperature °F:
 SIGNATURE: [Signature] REVIEWED BY: [Signature] PAGE 5 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO: 792775
 PURGED BY: D. W. Jones
 SAMPLED BY: [Signature]

SAMPLE ID: MW-5
 CLIENT NAME: Hard Chrome Engineering
 LOCATION: 750 107th Avenue, Oakland

TYPE: Groundwater Surface Water Leachate Other
 CASING DIAMETER (inches): 2 A 3 4 4.5 6 Other

CASING ELEVATION (feet/MSL): [Blank] VOLUME IN CASING (gal.): 1.0
 DEPTH OF WELL (feet): 23.2 CALCULATED PURGE (gal.): 3.0
 DEPTH TO WATER (feet): 18.11 ACTUAL PURGE VOL. (gal.): 3.0

DATE PURGED: 9/22/00 END PURGE: 1100
 DATE SAMPLED: [Blank] SAMPLING TIME: 1110

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1058	1.0	6.71	7070	65.1	yellow	High
1059	2.0	6.58	7320	64.1	[Blank]	[Blank]
1100	3.0	6.56	7280	63.8	[Blank]	[Blank]

OTHER: [Blank] ODOR: None
 (COBALT 0-100) (APU 0-200)

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

PURGING EQUIPMENT

2" Bladder Pump Bailer (Teflon)
 Centrifugal Pump Bailer (PVC)
 Submersible Pump Bailer (Stainless Steel)
 Well Wizard[®] Dedicated
 Other: [Blank]

SAMPLING EQUIPMENT

2" Bladder Pump Bailer (Teflon)
 Bomb Sampler Bailer (Stainless Steel)
 Dipper Submersible Pump
 Well Wizard[®] Dedicated
 Other: Disposable Bailer

WELL INTEGRITY: Good LOCK: 0769

REMARKS: [Blank]

pH, E.C., Temp. Meter Calibration: Date: [Blank] Time: 15:00 Meter Serial No.: [Blank]
 E.C. 1000 [Blank] pH 7 [Blank] pH 4 [Blank]
 Temperature °F [Blank]

SIGNATURE: [Signature] REVIEWED BY: [Signature] PAGE 6 OF 7

WATER SAMPLE FIELD DATA SHEET

Rev. 1/97

PROJECT NO: 792775
 PURGED BY: Dwight
 SAMPLED BY: L

SAMPLE ID: nw-6
 CLIENT NAME: Hard Chrome Engineering
 LOCATION: 750 107th Avenue, Oakland

TYPE: Groundwater L Surface Water _____ Leachate _____ Other _____
 CASING DIAMETER (inches): 2 L 3 _____ 4 _____ 4.5 _____ 6 _____ Other _____

CASING ELEVATION (feet/MSL): _____ VOLUME IN CASING (gal.): 1.0
 DEPTH OF WELL (feet): 22.7 CALCULATED PURGE (gal.): 3.0
 DEPTH TO WATER (feet): 17.57 ACTUAL PURGE VOL. (gal.): 3.0

DATE PURGED: 5/20/00 END PURGE: 935
 DATE SAMPLED: L SAMPLING TIME: 913

TIME (2400 HR)	VOLUME (gal.)	pH (unjs)	E.C. (µmhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>933</u>	<u>1.0</u>	<u>6.7</u>	<u>406.0</u>	<u>66.1</u>	<u>Brown</u>	<u>Hgt</u>
<u>934</u>	<u>2.0</u>	<u>6.55</u>	<u>399.0</u>	<u>65.7</u>	<u>L</u>	<u>L</u>
<u>935</u>	<u>3.0</u>	<u>6.65</u>	<u>402.0</u>	<u>65.3</u>	<u>L</u>	<u>L</u>

OTHER: _____ ODOR: NONE
 (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 L Bailer (PVC)
 _____ Submersible Pump _____ Bailer (Stainless Steel)
 _____ Well Wizard[®] _____ Dedicated
 Other: _____

SAMPLING EQUIPMENT

_____ 2" Bladder Pump L Bailer (Teflon)
 _____ Bomb Sampler _____ Bailer (Stainless Steel)
 _____ Dipper _____ Submersible Pump
 _____ Well Wizard[®] _____ Dedicated
 Other: _____

WELL INTEGRITY: Good LOCK: Open

REMARKS: _____

pH, E.C., Temp. Meter Calibration: Date: _____ Time: nw-1 Meter Serial No.: _____
 E.C. 1000 _____ pH _____ pH 10 _____ pH 4 _____

Temperature °F _____
 SIGNATURE: [Signature] REVIEWED BY: [Signature] PAGE 7 OF 7

IT / EMCON - Drum Inventory Record

792775

Project No

750 107th Ave., Oakland

Location

5/20/00

Date

Hard Chrome Engineering

Client

DWOFob

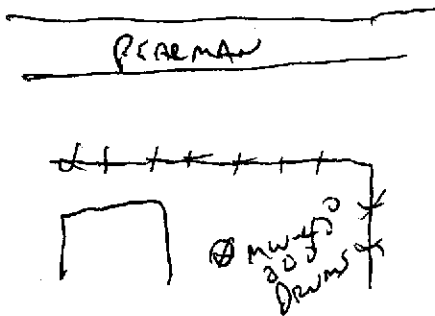
Sampler

WEDNESDAY

Day of Week

DRUM NUMBER OR ID	WELL OR SOURCE ID(s)	TYPE OF MATERIAL	AMOUNT OF MATERIAL IN DRUM	DATE ACCUMULATED OR GENERATED
0615004	MW-1-1B	Purged 720	33.0 GALS	061500
0920004	↓	↓	26.0 GALS	092000

Sketch locations of drums, include drum ID's



COMMENTS:

Number of Drums From This Event

Total Number of Drums At Site

~~2~~ 2 full
(6 empty)

8

APPENDIX B

**CERTIFIED ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY
REPORTS**



Sequoia Analytical

RECEIVED
OCT 11 2000

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequolalabs.com

October 2, 2000

Charles Metzinger
EMCON/IT - Sacramento
1433 N. Market Blvd., #1
Sacramento, CA 95834

RE: Hard Chrome Engineering/S009280

Dear Charles Metzinger

Enclosed are the results of analyses for sample(s) received by the laboratory on September 20, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sandra R. Hanson

Sandra R. Hanson
Client Services Representative

CA ELAP Certificate Number 1624





EMCON/IT - Sacramento 33 N. Market Blvd., #1 Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775 Project Manager: Charles Metzinger	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/2/00
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ANALYTICAL REPORT FOR S009280

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-1	S009280-01	Water	9/20/00
MW-2	S009280-02	Water	9/20/00
MW-3	S009280-03	Water	9/20/00
MW-4	S009280-04	Water	9/20/00
MW-5	S009280-05	Water	9/20/00
MW-6	S009280-06	Water	9/20/00
MW-1B	S009280-07	Water	9/20/00





LMCON/IT - Sacramento
 433 N. Market Blvd., #1
 Sacramento, CA 95834

Project: Hard Chrome Engineering
 Project Number: 792775
 Project Manager: Charles Metzinger

Sampled: 9/20/00
 Received: 9/20/00
 Reported: 10/2/00

Dissolved Metals by EPA 6000/7000 Series Methods Sequoia Analytical - Sacramento

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-1							<u>S009280-01</u>	
							<u>Water</u>	
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	0.0500	ND	mg/l	
Arsenic	"	"	"	EPA 6010A	0.0500	ND	"	
Barium	"	"	"	EPA 6010A	0.0500	0.105	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.00500	ND	"	
Cobalt	"	"	"	EPA 6010A	0.0200	ND	"	
Copper	"	"	"	EPA 6010A	0.00500	ND	"	
Lead	"	"	"	EPA 6010A	0.0500	ND	"	
Molybdenum	"	"	"	EPA 6010A	0.0200	ND	"	
Nickel	"	"	"	EPA 6010A	0.0200	ND	"	
Selenium	"	"	"	EPA 6010A	0.0500	ND	"	
Silver	"	"	"	EPA 6010A	0.00500	ND	"	
Thallium	"	"	"	EPA 6010A	0.0500	ND	"	
Vanadium	"	"	"	EPA 6010A	0.0200	ND	"	
Zinc	"	"	"	EPA 6010A	0.00500	ND	"	
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	0.00500	ND	"	
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	ND	"	
MW-2							<u>S009280-02</u>	
							<u>Water</u>	
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	2.50	2.67	mg/l	D
Arsenic	"	"	"	EPA 6010A	2.50	ND	"	D
Barium	"	"	"	EPA 6010A	2.50	ND	"	D
Beryllium	"	"	"	EPA 6010A	0.250	ND	"	D
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	D
Chromium	"	"	"	EPA 6010A	0.250	598	"	D
Cobalt	"	"	"	EPA 6010A	1.00	ND	"	D
Copper	"	"	"	EPA 6010A	0.250	7.06	"	D
Lead	"	"	"	EPA 6010A	2.50	ND	"	D
Molybdenum	"	"	"	EPA 6010A	1.00	ND	"	D
Nickel	"	"	"	EPA 6010A	1.00	1.04	"	D
Selenium	"	"	"	EPA 6010A	2.50	ND	"	D
Silver	"	"	"	EPA 6010A	0.250	ND	"	D
Thallium	"	"	"	EPA 6010A	2.50	ND	"	D
Vanadium	"	"	"	EPA 6010A	1.00	ND	"	D
Zinc	"	"	"	EPA 6010A	0.250	1.12	"	D
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	50.0	611	"	D
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	0.000780	"	
MW-3							<u>S009280-03</u>	
							<u>Water</u>	
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	0.0500	ND	mg/l	





EMCON/IT - Sacramento 433 N. Market Blvd., #1 Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775 Project Manager: Charles Metzinger	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/2/00
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**Dissolved Metals by EPA 6000/7000 Series Methods
 Sequoia Analytical - Sacramento**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
				S009280-03			Water	
MW-3 (continued)								
Arsenic	0090239	9/21/00	9/22/00	EPA 6010A	0.0500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0500	0.0553	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.00500	0.0140	"	
Cobalt	"	"	"	EPA 6010A	0.0200	ND	"	
Copper	"	"	"	EPA 6010A	0.00500	ND	"	
Lead	"	"	"	EPA 6010A	0.0500	ND	"	
Molybdenum	"	"	"	EPA 6010A	0.0200	ND	"	
Nickel	"	"	"	EPA 6010A	0.0200	ND	"	
Selenium	"	"	"	EPA 6010A	0.0500	ND	"	
Silver	"	"	"	EPA 6010A	0.00500	0.00560	"	
Thallium	"	"	"	EPA 6010A	0.0500	ND	"	
Vanadium	"	"	"	EPA 6010A	0.0200	ND	"	
Zinc	"	"	"	EPA 6010A	0.00500	ND	"	
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	0.00500	ND	"	
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	ND	"	
				S009280-04			Water	
MW-4								
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	0.0500	ND	mg/l	
Arsenic	"	"	"	EPA 6010A	0.0500	ND	"	
Barium	"	"	"	EPA 6010A	0.0500	0.0624	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.00500	ND	"	
Cobalt	"	"	"	EPA 6010A	0.0200	ND	"	
Copper	"	"	"	EPA 6010A	0.00500	ND	"	
Lead	"	"	"	EPA 6010A	0.0500	ND	"	
Molybdenum	"	"	"	EPA 6010A	0.0200	ND	"	
Nickel	"	"	"	EPA 6010A	0.0200	ND	"	
Selenium	"	"	"	EPA 6010A	0.0500	ND	"	
Silver	"	"	"	EPA 6010A	0.00500	ND	"	
Thallium	"	"	"	EPA 6010A	0.0500	ND	"	
Vanadium	"	"	"	EPA 6010A	0.0200	ND	"	
Zinc	"	"	"	EPA 6010A	0.00500	ND	"	
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	0.00500	ND	"	
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	ND	"	
				S009280-05			Water	
MW-5								
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	0.500	ND	mg/l	D
Arsenic	"	"	"	EPA 6010A	0.500	ND	"	D





MCON/IT - Sacramento 33 N. Market Blvd., #1 Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775 Project Manager: Charles Metzinger	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/2/00
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**Dissolved Metals by EPA 6000/7000 Series Methods
 Sequoia Analytical - Sacramento**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
				S009280-05			Water	
MW-5 (continued)								
Barium	0090239	9/21/00	9/22/00	EPA 6010A	0.500	ND	mg/l	D
Beryllium	"	"	"	EPA 6010A	0.0500	ND	"	D
Cadmium	"	"	"	EPA 6010A	0.0500	ND	"	D
Chromium	"	"	"	EPA 6010A	0.0500	81.6	"	D
Cobalt	"	"	"	EPA 6010A	0.200	ND	"	D
Copper	"	"	"	EPA 6010A	0.0500	ND	"	D
Lead	"	"	"	EPA 6010A	0.500	ND	"	D
Molybdenum	"	"	"	EPA 6010A	0.200	ND	"	D
Nickel	"	"	"	EPA 6010A	0.200	ND	"	D
Selenium	"	"	"	EPA 6010A	0.500	ND	"	D
Silver	"	"	"	EPA 6010A	0.0500	ND	"	D
Thallium	"	"	"	EPA 6010A	0.500	ND	"	D
Vanadium	"	"	"	EPA 6010A	0.200	ND	"	D
Zinc	"	"	"	EPA 6010A	0.00500	ND	"	D
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	5.00	81.4	"	D
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	ND	"	
				S009280-06			Water	
MW-6								
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	0.0500	ND	mg/l	
Arsenic	"	"	"	EPA 6010A	0.0500	ND	"	
Barium	"	"	"	EPA 6010A	0.0500	0.0667	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.00500	0.00665	"	
Cobalt	"	"	"	EPA 6010A	0.0200	ND	"	
Copper	"	"	"	EPA 6010A	0.00500	ND	"	
Lead	"	"	"	EPA 6010A	0.0500	ND	"	
Molybdenum	"	"	"	EPA 6010A	0.0200	ND	"	
Nickel	"	"	"	EPA 6010A	0.0200	ND	"	
Selenium	"	"	"	EPA 6010A	0.0500	ND	"	
Silver	"	"	"	EPA 6010A	0.00500	ND	"	
Thallium	"	"	"	EPA 6010A	0.0500	ND	"	
Vanadium	"	"	"	EPA 6010A	0.0200	ND	"	
Zinc	"	"	"	EPA 6010A	0.00500	0.0133	"	
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	0.00500	ND	"	
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	ND	"	
				S009280-07			Water	
TW-1B								
Antimony	0090239	9/21/00	9/22/00	EPA 6010A	0.500	0.560	mg/l	D
Arsenic	"	"	"	EPA 6010A	0.500	ND	"	D
Barium	"	"	"	EPA 6010A	0.500	ND	"	D





EMCON/IT - Sacramento
433 N. Market Blvd., #1
Sacramento, CA 95834

Project: Hard Chrome Engineering
Project Number: 792775
Project Manager: Charles Metzinger

Sampled: 9/20/00
Received: 9/20/00
Reported: 10/2/00

**Dissolved Metals by EPA 6000/7000 Series Methods
Sequoia Analytical - Sacramento**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
				<u>S009280-07</u>			<u>Water</u>	
MW-1B (continued)								
Beryllium	0090239	9/21/00	9/22/00	EPA 6010A	0.0500	ND	mg/l	D
Cadmium	"	"	"	EPA 6010A	0.0500	ND	"	D
Chromium	"	"	"	EPA 6010A	0.0500	134	"	D
Cobalt	"	"	"	EPA 6010A	0.200	ND	"	D
Copper	"	"	"	EPA 6010A	0.0500	ND	"	D
Lead	"	"	"	EPA 6010A	0.500	ND	"	D
Molybdenum	"	"	"	EPA 6010A	0.200	ND	"	D
Nickel	"	"	"	EPA 6010A	0.200	ND	"	D
Selenium	"	"	"	EPA 6010A	0.500	ND	"	D
Silver	"	"	"	EPA 6010A	0.0500	ND	"	D
Thallium	"	"	"	EPA 6010A	0.500	ND	"	D
Vanadium	"	"	"	EPA 6010A	0.200	ND	"	D
Zinc	"	"	"	EPA 6010A	0.0500	ND	"	D
Hexavalent Chromium	0090233	9/20/00	9/20/00	EPA 7196A	12.5	122	"	D
Mercury	0090298	9/26/00	9/26/00	EPA 7470A	0.000200	ND	"	





EMCON/IT - Sacramento
 433 N. Market Blvd., #1
 Sacramento, CA 95834

Project: Hard Chrome Engineering
 Project Number: 792775
 Project Manager: Charles Metzinger

Sampled: 9/20/00
 Received: 9/20/00
 Reported: 10/2/00

Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control Sequoia Analytical - Sacramento

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*	
Batch: 0090233						Date Prepared: 9/20/00					Extraction Method: General Preparation
Blank						0090233-BLK1					
Hexavalent Chromium	9/20/00			ND	mg/l	0.00500					
LCS						0090233-BS1					
Hexavalent Chromium	9/20/00	0.0500		0.0486	mg/l	80.0-120	97.2				
Matrix Spike						0090233-MS1 S009280-03					
Hexavalent Chromium	9/20/00	0.0500	ND	0.0565	mg/l	75.0-125	113				
Matrix Spike Dup						0090233-MSD1 S009280-03					
Hexavalent Chromium	9/20/00	0.0500	ND	0.0554	mg/l	75.0-125	111	20.0	1.79		
Batch: 0090239						Date Prepared: 9/21/00					Extraction Method: EPA 3010A
Blank						0090239-BLK1					
Antimony	9/22/00			ND	mg/l	0.0500					
Arsenic	"			ND	"	0.0500					
Barium	"			ND	"	0.0500					
Beryllium	"			ND	"	0.00500					
Cadmium	"			ND	"	0.00500					
Chromium	"			ND	"	0.00500					
Cobalt	"			ND	"	0.0200					
Copper	"			ND	"	0.00500					
Lead	"			ND	"	0.0500					
Molybdenum	"			ND	"	0.0200					
Nickel	"			ND	"	0.0200					
Selenium	"			ND	"	0.0500					
Silver	"			ND	"	0.00500					
Thallium	"			ND	"	0.0500					
Vanadium	"			ND	"	0.0200					
Zinc	"			ND	"	0.00500					
LCS						0090239-BS1					
Arsenic	9/22/00	0.500		0.499	mg/l	80.0-120	99.8				
Cadmium	"	0.500		0.495	"	80.0-120	99.0				
Chromium	"	0.500		0.511	"	80.0-120	102				
Nickel	"	0.500		0.502	"	80.0-120	100				
Zinc	"	0.500		0.501	"	80.0-120	100				
Matrix Spike						0090239-MS1 S009280-01					
Arsenic	9/22/00	0.500	ND	0.503	mg/l	80.0-120	101				
Cadmium	"	0.500	ND	0.496	"	80.0-120	99.2				





MCON/IT - Sacramento 433 N. Market Blvd., #1 Sacramento, CA 95834	Project: Hard Chrome Engineering Project Number: 792775 Project Manager: Charles Metzinger	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/2/00
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**Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
 Sequoia Analytical - Sacramento**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)										
	<u>0090239-MS1</u>		<u>S009280-01</u>							
Chromium	9/22/00	0.500	ND	0.514	mg/l	80.0-120	103			
Nickel	"	0.500	ND	0.495	"	80.0-120	99.0			
Zinc	"	0.500	ND	0.502	"	80.0-120	100			
Matrix Spike Dup										
	<u>0090239-MSD1</u>		<u>S009280-01</u>							
Arsenic	9/22/00	0.500	ND	0.510	mg/l	80.0-120	102	20.0	0.985	
Cadmium	"	0.500	ND	0.501	"	80.0-120	100	20.0	0.803	
Chromium	"	0.500	ND	0.518	"	80.0-120	104	20.0	0.966	
Nickel	"	0.500	ND	0.500	"	80.0-120	100	20.0	1.01	
Zinc	"	0.500	ND	0.505	"	80.0-120	101	20.0	0.995	
Batch: 0090298										
Date Prepared: 9/26/00										
Extraction Method: EPA 7470A										
Blank										
	<u>0090298-BLK1</u>									
Mercury	9/26/00			ND	mg/l	0.000200				
LCS										
	<u>0090298-BS1</u>									
Mercury	9/26/00	0.00500		0.00477	mg/l	80.0-120	95.4			
Matrix Spike										
	<u>0090298-MS1</u>		<u>S009321-01</u>							
Mercury	9/26/00	0.00500	0.000360	0.00487	mg/l	75.0-125	90.2			
Matrix Spike Dup										
	<u>0090298-MSD1</u>		<u>S009321-01</u>							
Mercury	9/26/00	0.00500	0.000360	0.00478	mg/l	75.0-125	88.4	20.0	2.02	





MCON/IT - Sacramento	Project: Hard Chrome Engineering	Sampled: 9/20/00
33 N. Market Blvd., #1	Project Number: 792775	Received: 9/20/00
Sacramento, CA 95834	Project Manager: Charles Metzinger	Reported: 10/2/00

Notes and Definitions

#	Note
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- D Data reported from a dilution.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- R Not Reported
- dry Sample results reported on a dry weight basis
- recov. Recovery
- RPD Relative Percent Difference



CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

IT / EMCON - 1433 North Market Boulevard, Sacramento, CA 95834

Purchase Order: 154385

(916) 928-3300 FAX (916) 928-3341

Lab: **SEQUOIA ANALYTICAL**

Project Name: **Hard Chrome Engineering**
 Project Number: **792775**
 Project Manager: **Charles Metzinger**
 Company: **IT / EMCON**
 Address: **1433 North Market Boulevard**
 Sacramento, CA 95834
 Phone: **(916) 928-3300**
 FAX: **(916) 928-3341**
 Sampler's Signature: *[Signature]*

					Analysis Requested												REMARKS				
Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Can 17 Metals (Field Filtered)	Hexavalent Chromium by EPA Method 7196 (24-Hr Hold) (Field Filtered)														
						3	3														Container Types
						HNO3	NP														Preservations
MW-1	9/20/00	912		water	2	1	1														
MW-2		1210		water	2	1	1														
MW-3		1037		water	2	1	1														
MW-4		1004		water	2	1	1														
MW-5		1110		water	2	1	1														
MW-6		543		water	2	1	1														
MW-1B		1135		water	2	1	1														

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: <u><i>[Signature]</i></u>	Signature: <u><i>[Signature]</i></u>	Signature: <u><i>[Signature]</i></u>	Signature: _____
Printed Name: <u>IT</u>	Printed Name: <u>Sequoia</u>	Printed Name: _____	Printed Name: _____
Firm: <u>9/20/00 11/25</u>	Firm: <u>9/20/00 1425</u>	Firm: _____	Firm: _____
Date/Time: _____	Date/Time: _____	Date/Time: _____	Date/Time: _____

REPORT REQUIREMENTS

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#)

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

Special Instructions/Comments:

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

Sequoia Analytical
 819 Striker Ave, Ste. 8
 Sacramento, Ca 95834
 916-921-9600
 Ron Bobel or Sandi Hanson

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:	6
2x6 s/s ring:	7
glass jar:	8