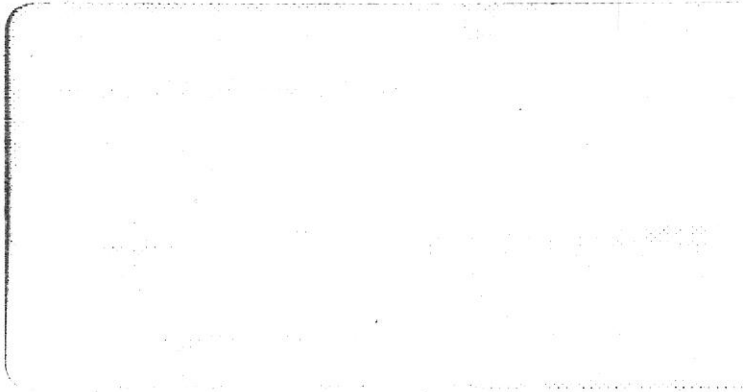


SIMON

**Environmental
Engineering**

ENVIRONMENTAL
PROTECTION

97 MAY 15 AM 10: 28



SIMON-EEI

**Phase II
Environmental Site Assessment
Hard Chrome Engineering, Inc.
750 107th Avenue
Oakland, California**

**Phase II Environmental Site Assessment
Hard Chrome Engineering, Inc.
750 107th Avenue
Oakland, California**

September 23, 1991

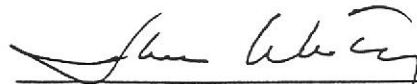
Prepared for:

*Ms. Cheryl McLemore
Reno, Nevada*

Prepared by:

*Simon Environmental Engineering
536 Stone Road, Suite J
Benicia, California*

(707) 747-9577



*John Whitney
Project Hydrogeologist*



*Gerald B. Swanick
Senior Hydrogeologist*

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 EXECUTIVE SUMMARY	1
2.0 INTRODUCTION	2
3.0 SITE INVESTIGATION	5
3.1 Site Manager Interview	5
3.2 Site Inspection	9
3.3 Soil Boring and Sampling	10
3.4 Ground-water Sampling	13
4.0 RESULTS AND DISCUSSION	14
4.1 Geology	14
4.2 Ground-water	14
4.3 Laboratory Results	15
4.3.1 Ground-Water Results	15
4.3.2 Soil Results	17
5.0 CONCLUSIONS	18

FIGURES

FIGURE 1: SITE LOCATION MAP
FIGURE 2: SOIL BORING LOCATION MAP
FIGURE 3: DETAIL OF SITE PLATING AND SUMP AREA

TABLES

TABLE 1: RESULTS OF LABORATORY ANALYSIS OF SOIL
AND GROUND-WATER SAMPLES

APPENDICES

APPENDIX A: SOIL BORING LOGS
APPENDIX B: ANALYTICAL LABORATORY REPORTS FOR SOIL
AND GROUND-WATER SAMPLES

1.0 EXECUTIVE SUMMARY

- o Five soil borings were drilled on the subject property on August 19 and 26, 1991. The borings were installed to provide an initial assessment of the extent of possible soil and ground-water contamination at the site.

- o One soil sample and four ground-water samples were collected from the soil borings and submitted for laboratory analysis of priority pollutant metals, cyanide and pH.

- o Results of laboratory analysis of ground-water samples indicate that chromium is present in the groundwater at a concentration significantly above allowable Federal levels for drinking water.

- o Several metals were identified in soil samples, however, none of the metals were at concentrations considered hazardous as defined in Title 22 of the California Code of Regulations.

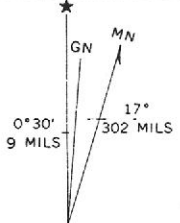
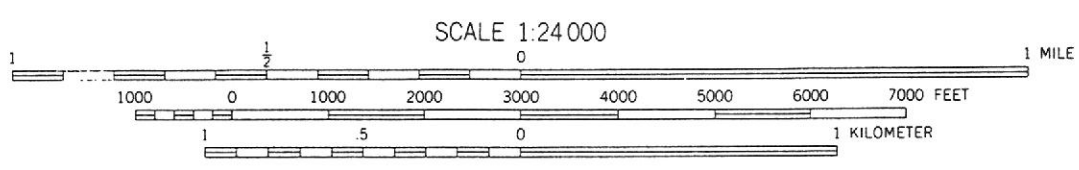
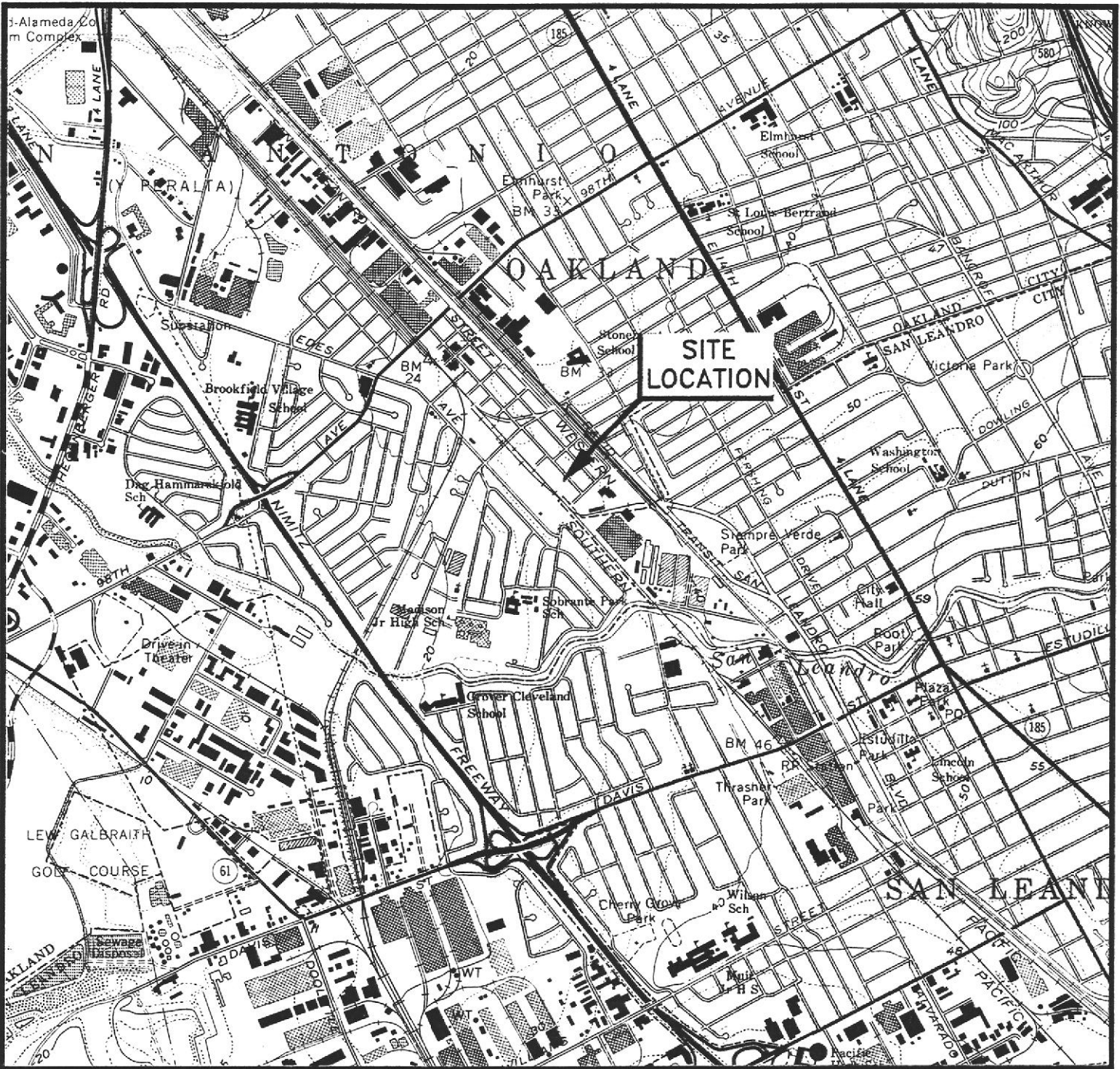
2.0 INTRODUCTION

The following report presents the results of a Phase II environmental site assessment conducted by Simon Environmental Services (Simon) for Ms. Cheryl McLemore of Reno, Nevada. The subject of the assessment is an industrial property, owned by Ms. McLemore, located at 750 107th Avenue, Oakland, California. The property is currently leased to Hard Chrome Engineering, Inc., which has operated a hard-chrome plating business at the site since 1972. A site location map is presented in Figure 1.

The objective of the Phase II investigation is to provide an initial assessment of the impact to soil and ground-water conditions at the site from past and current site usage. The assessment is also intended to provide a basis from which to propose additional work, if needed, and estimate costs required for an in-depth site investigation and site clean-up. The Phase II work is being performed in lieu of a Phase I investigation at the client's request, based on her knowledge of the past use of the site and the potential site conditions.

In performing the investigation the following tasks were completed:

- 1) Inspection of the site and interview with the site manager regarding current and past operational practice;



SOURCE: Base map from USGS San Leandro Quadrangle 7.5 minute Topographic map. UTM GRID AND 1980 MAGNETIC NORTH

SITE LOCATION MAP
 HARD CHROME ENGINEERING, INC.
 OAKLAND, CALIFORNIA

SIMON-EEI Inc.

PROJECT NO: 513-925.00

FIGURE: 1

DATE: SEPTEMBER, 1991

- 2) drilling and sampling at five locations on the subject property; and

- 3) laboratory analysis of one soil and four ground-water samples collected from the borings. Field work for the assessment was conducted during the period of August 19 to 26, 1991.

3.0 SITE INVESTIGATION

The tasks of site inspection, site manager interview, and installation and sampling of soil borings were performed on August 19 and 26, 1991. Details of the site investigation are presented in the following sections. Figure 2 presents a general plan view of the subject property.

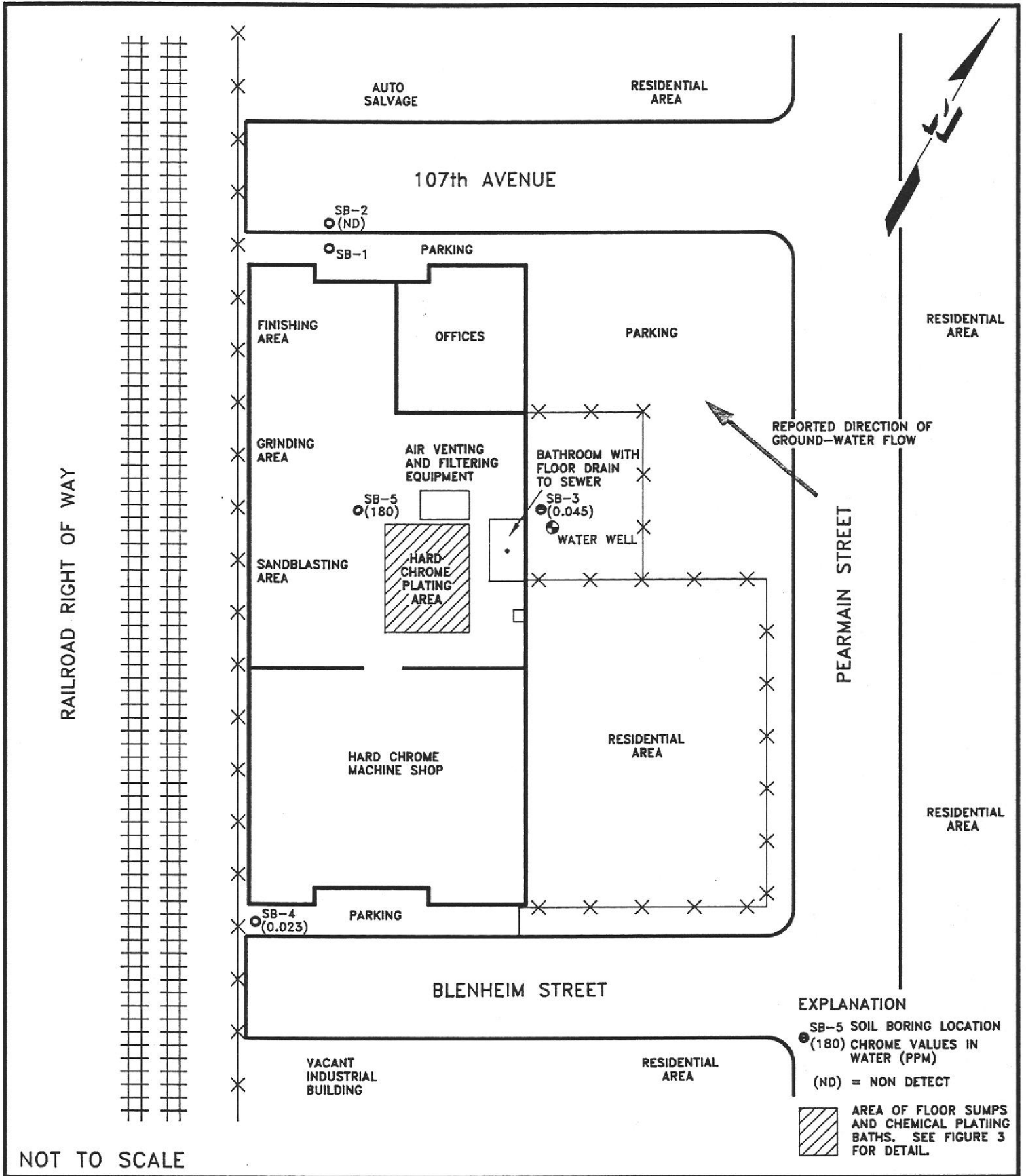
3.1 Site Manager Interview

Mr. Ron Teffs, Jr., the site manager and business owner, was interviewed on August 19, 1991 concerning previous and current use of the facility. Mr. Teffs provided the following information:

Hard Chrome Engineering has operated at the site since 1972 and has occupied the existing on-site building since that date. Mr. Teffs believes the building was constructed in the mid-1960's, and prior to Hard Chrome's occupancy, was used as a moving company warehouse and as a manufacturing facility for a firm producing urethane injection molding products.

Mr. Teffs stated that hard-chrome plating is the only plating process performed by his firm at the facility, and that the process utilizes a solution of chromic acid in the primary plating baths.

Secondary containment for the plating baths is provided by a containment sump built into the floor of the plating area. The



SOIL BORING LOCATION MAP
HARD CHROME ENG., INC.
OAKLAND, CALIFORNIA

SIMON-EEI Inc.

PROJECT NO: 513-925.00

FIGURE:

DATE: SEPTEMBER, 1991

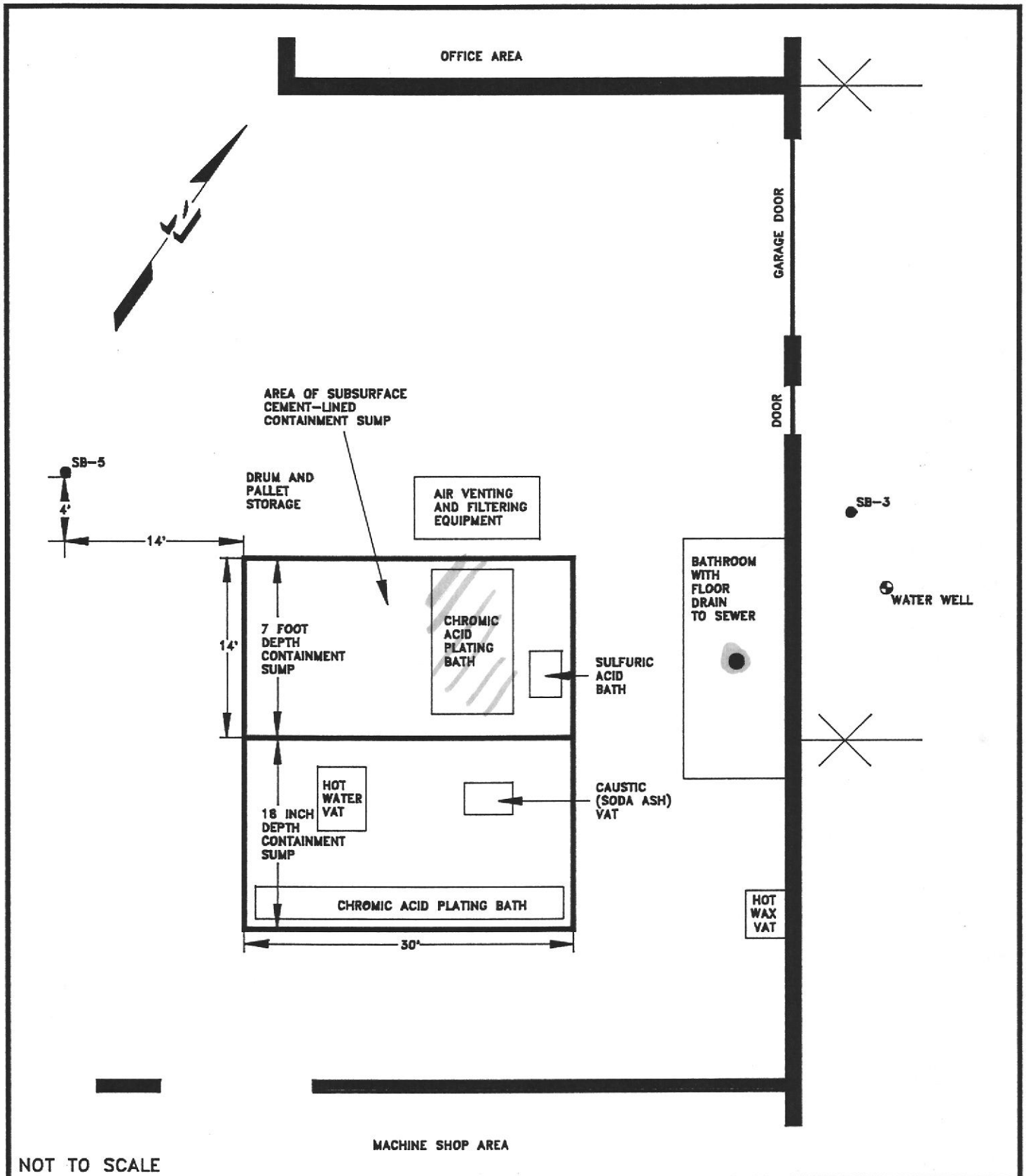
2

sump was installed when Hard Chrome moved into the facility. It is constructed of poured concrete, 18 inches thick on the bottom and ten inches thick on the sides. The concrete is surrounded by plastic liner and was constructed in a single pour to prevent seams in the concrete. The northern half of the sump extends to approximately seven feet below floor level; the southern half extends to approximately 18 inches below floor level. Figure 3 presents a plan view of the sump and plating baths at the facility.

The remainder of the building is constructed over a six-inch thick concrete slab with only one floor drain. The floor drain is in a washroom on the east side of the building, and is connected to the city sewer system.

Water well
A water well on the property east of the building was installed by Hard Chrome Engineering in the mid-1970's to provide process water for the plating operations during drought years. Mr. Teffs believed the well is approximately 60 feet deep and that the bottom 20 feet of the well are screened. Well logs are not available. The well has not been used for several years because of questions relating to the volume of water being discharged to the city sewer system from the unmetered well.

In addition to chromic acid, chemicals used in the plating operations include sulfuric acid (used in a parts cleaning bath), and soda ash (used in a caustic parts cleaning bath). A petroleum



NOT TO SCALE

MACHINE SHOP AREA

DETAIL OF PLATING AREA
 HARD CHROME ENGINEERING, INC.
 OAKLAND, CALIFORNIA

SIMON-EEI Inc.

PROJECT NO: 513-925.00

FIGURE:

DATE: SEPTEMBER, 1991

3

naphtha fluid (Great Western Solvent 450) is used in metal machining operations following plating.

3.2 Site Inspection

Simon inspected the subject property for visual evidence of past site activities indicative of inappropriate handling or disposal of hazardous substances on August 26, 1991. Primary areas of concern included the plating and sump area, and the property surrounding the site building. Excluding the plating area, the interior of the building appeared to be generally well maintained, with little evidence of significant floor staining or poor handling of hazardous substances. The concrete floor slab showed no evidence of significant cracking, and no floor drains were observed except the one noted previously in the plating area washroom.

floor drain

The plating area showed evidence of floor staining, however, the concrete slab in the area appeared intact, with no observed cracks or floor drains. Inspection of the northern, deeper half of the secondary containment sump showed evidence of staining and surficial pitting of the concrete walls and flooring. Traces of a dark brown liquid were observed on the sump bottom. Rust and yellow colored stain was present on a major portion of the sump walls. No cracks or seams were observed in the sump, however, surficial disintegration of some concrete material in the sump walls was noted.

*Stained
but no
cracks →
some
disintegrat
seen.*

Previously used plating process vats are stored in a fenced area surrounding the water well east of the site building. Evidence of rust colored staining was observed on the asphalt paving adjacent to the vats. Cracks were noted in the asphalt paving in this area.

The subject property is located in a mixed-use neighborhood of residential and light industrial buildings. To the north, across 107th Avenue, an abandoned automobile salvage yard was noted. Mr. Teffs indicated that the salvage yard had, at one time, handled battery recycling. Evidence of oily staining on the dirt surface of 107th Avenue between the Hard Chrome building and the salvage yard was visible.

3.3 Soil Boring and Sampling

Five soil borings were completed at the site on August 19 and 26, 1991. Locations of the borings are shown in Figure 2. Drilling services were provided by West Hazmat Drilling Corporation of Hayward, California, and drilling was performed under the supervision of a Simon geologist.

The purpose of the drilling program was to inspect subsurface soil conditions and to obtain soil and ground-water samples for chemical analysis. Borings were drilled with a CME or Soilmaster drilling rig with 8-inch diameter, continuous-flight hollow-stem

augers. Borings were completed to depths ranging from 20.0 to 30.0 feet below ground surface.

Soils encountered during drilling were classified (Unified Soil Classification System) and logged in the field using visually identifiable characteristics including lithologic character, color, degree of sorting, moisture content, and odor. Soils collected at 5.0-foot depth intervals were screened for organic vapor content by placing the sample in an air-tight polyethylene sample bag, which was then placed in direct sunlight to increase volatilization rates. After several minutes of exposure, vapor concentrations in the sample bags were measured using a photoionization detector (PID) with a 10.2 eV lamp. These results provide an initial indication of the occurrence and relative concentrations of specific ionizable organic compounds in the soils. Results of the soil classifications and vapor screening are included in the soil boring logs contained in Appendix A.

Undisturbed soil samples were collected from each boring at a depth of approximately 9.0 feet below ground surface. Samples were collected using a modified California split-spoon sampler with brass sample tube inserts. All samples were visually inspected for soil characteristics and classified and logged as described previously.

The soil sample from boring SB-5, located adjacent to the plating area containment sump, was retained for later laboratory analysis. Depth of the SB-5 soil sample coincides with the depth of the base of the adjacent containment sump. In accordance with EPA (US Environmental Protection Agency) prescribed preservation procedures, the sample was sealed and placed on ice pending submittal to the analytical laboratory. The sample was submitted on August 27, to Chromalab Analytical Laboratory in San Ramon, California for analysis of CAM 13 (California Administrative Manual) metals by EPA method 3050/6010, pH, and total cyanide by EPA method 9010. Strict chain-of-custody procedures were followed during sample transport to the laboratory. See Appendix B for chain-of-custody documents.

Soil cuttings produced from the borings were mixed with equal quantities of bentonite chips (a native clay) to provide low permeability material for the borings. The soil mixture was placed into the borings to seal them after completion of testing. Excess soil cuttings were placed in labeled and sealed 55-gallon drums and were stored on site until the soils laboratory analyses were received.

Auger columns were steam cleaned between borings, and sampling equipment was cleaned between samples with a trisodium-phosphate (TSP) detergent then rinsed with distilled water. Decontamination

water was contained within 55 gallon drums, sealed, labeled and stored on site pending the results of laboratory analysis.

3.4 Ground-Water Sampling

After completion of boreholes SB-2 through SB-5, ground-water samples were collected from the borings using a Hydro-Punch sampling device. The Hydro-Punch enables the collection of undisturbed in-situ ground-water samples without the permanent installation of a monitor well. In the borings mentioned, the Hydro-Punch was driven into the soil approximately 2 to 3 feet below the augers and a sample collection port was opened. Ground water entering the Hydro-Punch was allowed to collect within the sample chamber and was then extracted by bailer and decanted into sample bottles. Samples were collected from depths ranging from 27 to 30 feet below ground surface.

Following collection of water samples, sample bottles were capped, labeled, and shipped via courier to Chromalab Analytical Laboratory in San Ramon, California. Chain-of-custody documentation was maintained throughout the sample transport to the laboratory.

Samples were submitted on August 20 and 27, 1991, and were analyzed for CAM 13 metals by EPA method 3050/6010, pH, and cyanide by EPA Method 9010.

4.0 RESULTS AND DISCUSSION

4.1 Geology

Based on the subsurface conditions encountered during the completion of the five soil borings, the lithologic character of the sediments appear laterally consistent across the site.

The geologic material consists of alluvium which generally is fine grained in character. Soils encountered from ground surface to a depth of approximately 8 to 9 feet consist primarily of dark brown silty sand and clayey silt. Below 9 feet the alluvial materials consist of silty clay, with traces of fine sand encountered below 20 feet. The silty clay continues to the total depth of the investigation at 30 feet.

4.2 Ground Water

Ground water occurs beneath the site at a depth of approximately 25 feet below ground surface. First ground water encountered occurs in a silty clay horizon with traces of fine sand. Based on topographic maps of the area and information on local ground-water gradients contained in an unpublished report (Kennedy/Jenks Engineers; Report of Site Assessment, 425 Hester Street, September, 1985) from a nearby site investigation, it is believed that local ground-water gradient is generally to the northwest towards San Leandro Bay.

4.3 Laboratory Results

Four ground-water and one soil sample were collected and submitted for laboratory analysis during this investigation. The results of the laboratory analyses are presented in Table 1. Copies of the laboratory reports are included in Appendix B, along with copies of the chain-of-custody forms. Locations of the soil borings from which samples were collected are shown in Figure 2.

4.3.1 Ground-Water Results

Ground-water samples were collected with the aid of an Hydro-Punch sampling device from soil borings SB-2, SB-3, SB-4, and SB-5. Samples were collected at a depth of 27.0 feet in borings SB-2 and SB-5, 28.0 feet in boring SB-4, and 30.0 feet in boring SB-3.

Three of the thirteen scanned metal analytes were detected in one or more of the samples. Chromium was detected in the samples from three borings (SB-3, SB-4, SB-5) in concentrations ranging from 0.023 mg/l (milligrams per liter) in SB-4 to 180.3 mg/l in SB-5. Chromium was not detected in the sample from boring SB-2. Cyanide concentrations ranged from 0.018 mg/l in the sample from boring SB-3 to 0.103 mg/l in the sample from boring SB-5. Samples from borings SB-2, SB-3, and SB-4 exhibited pH levels between 7.1 and 7.4. The pH level in the sample from SB-5 was 5.8.

TABLE 1a
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES(a)

Parameter	Sample Number				MCL (b)
	SB3-1-W	SB2-2-W	SB4-3-W	SB5-5-W	
Beryllium	ND(c)	ND	ND	ND	--
Cadmium	ND	ND	ND	ND	0.01
Chromium	0.045	ND	0.023	180.3	0.05
Copper	ND	ND	ND	ND	1.3(d)
Nickel	ND	ND	ND	0.033	--
Lead	ND	ND	ND	ND	0.05
Zinc	0.033	0.037	0.008	ND	5.0
pH	7.4	7.1	7.1	5.8	6.5-8.5
Cyanide	0.018	0.039	0.041	0.103	--

- (a) Measured in mg/l; equivalent to parts per million (ppm).
 (b) MCL = Maximum contaminant level.
 (c) ND = Not detected.
 (d) Proposed MCL.

TABLE 1b
ANALYTICAL RESULTS FOR SOIL SAMPLE(a)

Parameter	Sample Number	STLC ^{1/}	TTL ^{1/}	
	SB5-5-9.0	(b)	(c)	
Beryllium	ND(d)	0.75	75.0	- 1.1
Cadmium	0.297	1.0	100.0	- 880
Chromium	19.9	560.0	2500.0	- 450
Copper	5.950	25.0	2500.0	- high
Nickel	7.09	20.0	2000.0	- high
Lead	7.02	5.0	1000.0	- high
Zinc	8.12	250.0	5000.0	- high
pH	6.7	--	--	
Cyanide	ND	--	--	

- (a) Measured in mg/kg; equivalent to ppm.
 (b) STLC = Soluble Threshold Limit Concentration.
 (c) TTL = Total Threshold Limit Concentration.
 (d) ND = Not detected.
^{1/} Source: Title 22, California Code of Regulations.

PRG

4.3.2 Soil Sample Results

Soil sample SB5-5-9 was collected from boring SB-5 at a depth of 9.0 feet. Chemical analysis of CAM 13 metals in the sample found detectable quantities of seven of thirteen metals scanned for in the analysis, including chrome at a concentration of 19.9 milligram per kilogram (mg/kg). Analysis for cyanide found non-detect (ND) concentration in the sample. The pH of the sample was 6.7. These results are compared to the Total Threshold Limit Concentrations (TTLIC) in Table 1b (as listed in Title 22 of the California Code of Regulations). Concentrations of metals in soils below the TTLIC concentration are considered non hazardous. Based on this laboratory analysis, all metals are substantially below hazardous concentrations.

5.0 CONCLUSIONS

Based on the results of the Phase II soil and ground-water investigation at the Hard Chrome Engineering, Inc. site, the following conclusions can be made.

- o Elevated chromium levels were detected in soil and ground-water samples collected from the subsurface area adjacent to the secondary containment sump. In soil boring SB-5, chromium was detected at a concentration of 180.3 mg/l in ground water and 19.9 mg/kg in soil.

- o Chromium levels in the SB-5 ground-water sample significantly exceed the EPA Maximum Contaminant Level (MCL) standard of 0.05 mg/l set for chromium in drinking water sources, or potential sources of drinking water. It is undetermined whether the ground water beneath the Hard Chrome site is considered a potential source of drinking water by State or local regulatory agencies. This can only be determined through consultation with the appropriate implementing agency. MCL standards, however, are federally enforceable drinking water regulations and are commonly used to provide guidelines for site remediation requirements.

- o The extent to which ground water at the site has been impacted is suggested by the presence of detectable concentrations of chromium in ground-water samples collected from soil borings SB-3 and SB-4. However, a more precise definition of the lateral extent of the contaminant plume cannot be determined from the scope of work performed in the Phase II assessment and would require an in-depth subsurface investigation. Simon Environmental Services will provide a conceptual summary of in-depth site investigation and remediation options at the request of the client.

APPENDIX A
SOIL BORING LOGS

BORING: SB-1		FILE NAME: SB1	
PROJECT NAME: HARD CHROME ENGINEERING		PROJECT NO. 513-925	
LOCATION/COORDINATES:		RIG TYPE: CME	
SCHEDULE		WATER LEVEL	
INITIATED: 8/19/91	DEPTH:	SAMPLING METHOD: CS	
COMPLETED: 8/19/91	DATE:	DRILLING CO: WEST HAZMAT	
BACKFILLED: 8/19/91	TIME:	DRILLED BY: Slagle	
GROUND ELEVATION: NA	BORING DEPTH: 20.0'	LOGGED BY: J. Whitney	
		SHEET 1 OF 1	

DEPTH IN FEET	SAMPLE DATA					SOIL TYPE		SOIL DESCRIPTION	REMARKS
	S A M P L E R	D E P T H	T Y P E	B L O W S	P I D ppm	U S C S	S Y M B O L		
0						SM		SURFACE CONCRETE (6") SILTY SAND/FILL: Dark brown; very fine to medium; little silt; slightly moist	
5	SB1-1-5		CS	18	2			dark brown to medium brown mottled; trace white veining; moist	
10	SB1-2-9		CS	64	2	CL		SILTY CLAY: Medium yellow-brown; trace to little silt; moist	
15			GS						
20			HP					very moist	Sample with HP at 17'. No recovery.

CS = California Modified Sampler
GS = Grab Sample
HP = Hydro-punch

BORING: SB-2		FILE NAME: SB2	
PROJECT NAME: HARD CHROME ENGINEERING		PROJECT NO. 513-925	
LOCATION/COORDINATES:		RIG TYPE: SM50	
SCHEDULE		WATER LEVEL	
INITIATED: 8/19/91	DEPTH:	SAMPLING METHOD: CS/HP	
COMPLETED: 8/26/91	DATE:	DRILLING CO: WEST HAZMAT	
BACKFILLED: 8/26/91	TIME:	DRILLED BY: Slagle/Man	
GROUND ELEVATION: NA	BORING DEPTH: 25.0'	LOGGED BY: J. Whitney	
		SHEET 1 OF 2	

DEPTH IN FEET	SAMPLE DATA					SOIL TYPE		SOIL DESCRIPTION	REMARKS
	SAMPLER	DEPTH	TYPE	BLOWS	PID ppm	USCS	SYMBOL		
0						ML		SILTY SAND: Dark brown; very fine to medium; trace coarse; little silt; slightly moist	
5			GS		1				
9.5	SB2-3-9.5		CS	50	2	CL		SILTY CLAY: Medium brown to yellow-brown; trace to little silt; slightly moist	
15			GS		2				
20			GS		0			light to medium yellow-brown; little to some silt; trace fine sand	


CS = California Modified Sampler
GS = Grab Sample
HP = Hydro-punch

BORING: SB-2




Cont.

FILE NAME: SB2-2


SHEET 2 OF 2

DEPTH IN FEET	SAMPLE DATA						SOIL TYPE		SOIL DESCRIPTION	REMARKS
	S A M P L E N U M B E R	D E P T H	T Y P E	B L O W S	P I D ppm		U S C S	S Y M B O L		
25	SB2-2-W		GS				CL			
			HP							Sample with HP at 27.0'
30										
35										
40										
45										
50										

BORING: SB-3		FILE NAME: SB3	
PROJECT NAME: HARD CHROME ENGINEERING		PROJECT NO. 513-925	
LOCATION/COORDINATES:		RIG TYPE: CME	
SCHEDULE		SAMPLING METHOD: CS	
INITIATED: 8/19/91	DEPTH:	DRILLING CO: WEST HAZMAT	
COMPLETED: 8/19/91	DATE:	DRILLED BY: Slagle	
BACKFILLED: 8/19/91	TIME:	LOGGED BY: J. Whitney	
GROUND ELEVATION: NA	BORING DEPTH: 28.0'	SHEET 1 OF 2	

DEPTH IN FEET	SAMPLE DATA					SOIL TYPE		SOIL DESCRIPTION	REMARKS
	SA MPLER	DEPTH	TYPE	BLOWS	PID ppm	USCS	SYMBOL		
0						SL		SILTY SAND/FILL: Dark brown; very fine to medium; trace coarse; slightly moist	
5			GS		4	ML		CLAYEY SILT: Dark brown; some clay; moist; no odor	
9.5	SB3-4-		CS	31	5	CL		SILTY CLAY: Medium yellow-brown; trace to little silt; moist	
15			GS		2			medium to light grey-brown; moist to very moist	
20			GS						

CS = California Modified Sampler
 GS = Grab Sample
 HP = Hydro-punch

DEPTH IN FEET	SAMPLE DATA					SOIL TYPE		SOIL DESCRIPTION	REMARKS
	SAMPLE NUMBER	DEPTH	TYPE	BLOWS	PID ppm	USCS	SYMBOL		
25			GS		1	CL		little silt; trace fine sand; very moist	
30	SB3-1-W		HP						Sample with HP at 30.0'
35									
40									
45									
50									

BORING: SB-4		FILE NAME: SB4	
PROJECT NAME: HARD CHROME ENGINEERING		PROJECT NO. 513-925	
LOCATION/COORDINATES:		RIG TYPE: CME	
SCHEDULE		WATER LEVEL	
INITIATED: 8/19/91	DEPTH:	SAMPLING METHOD: CS	
COMPLETED: 8/26/91	DATE:	DRILLING CO: WEST HAZMAT	
BACKFILLED: 8/26/91	TIME:	DRILLED BY: Slagle/Man	
GROUND ELEVATION: NA	BORING DEPTH: 25.0'	LOGGED BY: J. Whitney	
		SHEET 1 OF 2	

DEPTH IN FEET	SAMPLE DATA					SOIL TYPE		SOIL DESCRIPTION	REMARKS
	SAMPLE NUMBER	DEPTH TYPE	BLOWS	PID ppm	USCS	SYMBOL			
0						SM		SILTY SAND/FILL: Dark grey-brown; very fine to medium; trace coarse; trace angular gravel; trace debris (metal) fragments; dry to slightly moist	
5		GS		3		ML		CLAYEY SILT: Dark brown; some clay; moist fine yellow-brown lamination	
9.5	SB4-5-9.5	CS	18	4		CL		SILTY CLAY: Medium yellow-brown; trace to little silt; moist; grading to grey-brown downwards; very moist	
15		GS		3				trace to little fine to coarse sand	
20		GS						little to some silt; very moist	Auger to 20.0' and drive HP to 25.0'; wait 30 minutes; no fluids enter sampler. No sample taken.


CS = California Modified Sampler
 GS = Grab Sample
 HP = Hydro-punch

BORING: SB-4

Cont.

FILE NAME: SB4-2

SHEET 2 OF 2

DEPTH IN FEET	SAMPLE DATA						SOIL TYPE		SOIL DESCRIPTION	REMARKS
	S A M P L E	N U M B E R	D E P T H	T Y P E	B L O W S	P I D ppm	U S C S	S Y M B O L		
25				HP			CL		wet	Sample with HP at 25.0'. No recovery.
	SB4-3-W			HP						Sample with HP at 28.0'.
30										
35										
40										
45										
50										

BORING: SB-5		FILE NAME: SB5	
PROJECT NAME: HARD CHROME ENGINEERING		PROJECT NO. 513-925	
LOCATION/COORDINATES:		RIG TYPE: SM 50	
SCHEDULE		WATER LEVEL	
INITIATED: 8/26/91	DEPTH:	DRILLING CO: WEST HAZMAT	
COMPLETED: 8/26/91	DATE:	DRILLED BY: Man	
BACKFILLED: 8/26/91	TIME:	LOGGED BY: J. Whitney	
GROUND ELEVATION: NA	BORING DEPTH: 25.0'	SHEET 1 OF 2	

DEPTH IN FEET	SAMPLE DATA					SOIL TYPE		SOIL DESCRIPTION	REMARKS
	S A M P L E R	N U M B E R	D E P T H	T Y P E	B L O W S	P I D ppm	U S C S		
0									
							SL	CONCRETE (6") SILTY SAND/FILL: Light yellow-brown; fine to coarse; little silt; dry; no odor	
5			GS		3			dark brown; trace clay; moist; no odor	
	SB5-5-9		CS	25	5		CL	SILTY CLAY: Medium brown to yellow-brown; little silt; moist	
10									
15			GS		0				
20			GS		4				


CS = California Modified Sampler
GS = Grab Sample
HP = Hydro-punch

BORING: SB5

Cont.

FILE NAME: SB5-2

SHEET 2 OF 2

DEPTH IN FEET	SAMPLE DATA						SOIL TYPE		SOIL DESCRIPTION	REMARKS
	S A M P L E	N U M B E R	D E P T H	T Y P E	B L O W S	P I D ppm	U S C S	S Y M B O L		
25	SB5-5-W		GS				CL		some silt; wet	Sample with HP at 27.0'.
30										
35										
40										
45										
50										

APPENDIX B
ANALYTICAL LABORATORY REPORTS FOR
SOIL AND GROUND-WATER SAMPLES

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

August 27, 1991

ChromaLab File No.: 0891179

SIMON-EEI, INC.

Attn: John Whitney

RE: One water sample for TTLC CAM 13 Metals analysis

Project Number: 513-925

Date Sampled: August 19, 1991

Date Submitted: August 20, 1991

Date Analyzed: August 23-26, 1991

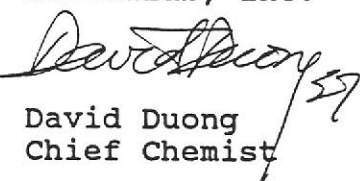
RESULTS: Sample I.D.: SB3-1-W


<u>Metals</u>	<u>Concentration</u> (mg/l)	<u>Detection</u> <u>Limit</u> (mg/l)	<u>% Spiked</u> <u>Recovery</u>
*Ag	N.D.	0.004	102.3%
As	N.D.	0.088	104.8%
Be	N.D.	0.001	88.8%
Cd	N.D.	0.012	85.3%
Cr	0.045	0.006	89.7%
Cu	N.D.	0.004	100.1%
Hg	N.D.	0.200	94.6%
Ni	N.D.	0.026	86.2%
Pb	N.D.	0.044	84.4%
*Sb	N.D.	0.040	90.3%
Se	N.D.	0.200	84.9%
Tl	N.D.	0.088	82.0%
Zn	0.033	0.006	92.4%

Method of Analysis: 3050/6010

*Method of Analysis: 3005/6010

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

August 27, 1991

ChromaLab File No.: 0891179

SIMON-EEI, INC.

Attn: John Whitney

RE: One water sample for pH analysis

Project Number: 513-925

Date Sampled: August 19, 1991

Date Submitted: August 20, 1991

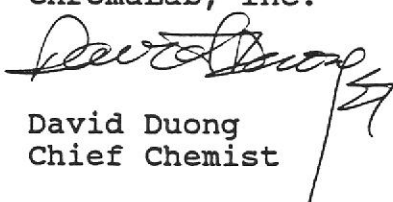
Date Extracted: August 23, 1991


Date Analyzed: August 23, 1991

RESULTS:

<u>Sample I.D.</u>	<u>pH</u>
SB3-1-W	7.4
BLANK	7.0

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 3, 1991

ChromaLab File No.: 0891234 A

SIMON - EEI, INC.

Attn: Douglas Hayes

RE: One water sample for TLC CAM 13 Metals analysis

Project Number: 513-925

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991

Date Analyzed: August 30, 1991

RESULTS: Sample I.D.: SB2-2-W

<u>Metals</u>	<u>Concentration</u> (mg/l)	<u>Detection</u> <u>Limit</u> (mg/l)	<u>% Spiked</u> <u>Recovery</u>
*Ag	N.D.	0.004	102.3%
As	N.D.	0.088	104.8%
Be	N.D.	0.001	88.8%
Cd	N.D.	0.012	85.3%
Cr	N.D.	0.006	89.7%
Cu	N.D.	0.004	100.1%
Hg	N.D.	0.200	94.6%
Ni	N.D.	0.026	86.2%
Pb	N.D.	0.044	84.4%
*Sb	N.D.	0.040	90.3%
Se	N.D.	0.200	84.9%
Tl	N.D.	0.088	82.0%
Zn	0.037	0.006	92.4%

Method of Analysis: 3050/6010

*Method of Analysis: 3005/6010

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 3, 1991

ChromaLab File No.: 0891234 B

SIMON - EEI, INC.

Attn: Douglas Hayes

RE: One water sample for TTLC CAM 13 Metals analysis

Project Number: 513-925

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991

Date Analyzed: August 30, 1991


RESULTS: Sample I.D.: SB4-3-W


Metals	Concentration (mg/l)	Detection Limit (mg/l)	% Spiked Recovery
*Ag	N.D.	0.004	102.3%
As	N.D.	0.088	104.8%
Be	N.D.	0.001	88.8%
Cd	N.D.	0.012	85.3%
Cr	0.023	0.006	89.7%
Cu	N.D.	0.004	100.1%
Hg	N.D.	0.200	94.6%
Ni	N.D.	0.026	86.2%
Pb	N.D.	0.044	84.4%
*Sb	N.D.	0.040	90.3%
Se	N.D.	0.200	84.9%
Tl	N.D.	0.088	82.0%
Zn	0.008	0.006	92.4%

Method of Analysis: 3050/6010

*Method of Analysis: 3005/6010

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 3, 1991

ChromaLab File No.: 0891234 C

SIMON - EEI, INC.

Attn: Douglas Hayes

RE: One water sample for TTLC CAM 13 Metals analysis

Project Number: 513-925

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991

Date Analyzed: August 30, 1991

RESULTS: Sample I.D.: SB5-4-W

<u>Metals</u>	<u>Concentration (mg/l)</u>	<u>Detection Limit (mg/l)</u>	<u>% Spiked Recovery</u>
*Ag	N.D.	0.004	102.3%
As	N.D.	0.088	104.8%
Be	N.D.	0.001	88.8%
Cd	N.D.	0.012	85.3%
Cr	180 3	0.006	89.7%
Cu	N.D.	0.004	100.1%
Hg	N.D.	0.200	94.6%
Ni	0.033	0.026	86.2%
Pb	N.D.	0.044	84.4%
*Sb	N.D.	0.040	90.3%
Se	N.D.	0.200	84.9%
Tl	N.D.	0.088	82.0%
Zn	N.D.	0.006	92.4%

Method of Analysis: 3050/6010

*Method of Analysis: 3005/6010

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 3, 1991

ChromaLab File No.: 0891234

SIMON - EEI, INC.

Attn: Douglas Hayes

RE: One soil and three water samples for pH analysis

Project Number: 513-925

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991

Date Analyzed: August 27, 1991

RESULTS:

<u>Sample I.D.</u>	<u>pH</u>
SB2-2-W	7.1
SB4-3-W	7.1
SB5-4-W	5.8
SB5-5-9*	6.7
BLANK	7.0

*Soil Sample

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 4, 1991

ChromaLab File No.: 0891234

SIMON-EEI, INC.

Attn: Douglas Hayes

RE: One soil and three water samples for Cyanide analysis

Project Number: 513-925

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991

Date Extracted: August 27, 1991

Date Analyzed: Sept. 4, 1991

RESULTS:

<u>Sample I.D.</u>	<u>Cyanide ($\mu\text{g/g}$)</u>
--------------------	---

SB5-5-9	N.D.
---------	------


DETECTION LIMIT	0.1
METHOD OF ANALYSIS	9010


<u>Sample I.D.</u>	<u>Cyanide (mg/l)</u>
--------------------	-----------------------

SB2-2-W	0.039
SB4-3-W	0.041
SB5-4-W	0.103

BLANK	N.D.
DETECTION LIMIT	0.010
METHOD OF ANALYSIS	9010

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director



McINTOSH LABORATORIES

2292 TRADE ZONE BLVD.

SAN JOSE, CALIFORNIA 95131

(408) 946-3935

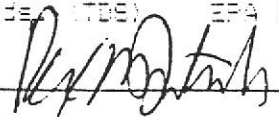
Date Reported: 8/29/91
 Date Received: 8/22/91
 Date sampled: 8/22/91
 Sampled by: Client
 Project/File: 0891179

: Chromalab
 : 2209 Omega Road, #1
 : San Ramon, Calif. 94583
 : Attn: David Duane

Sample Identification: SML/84762 - 883-1-W

Metals determined by: EPA Method 6010 or: X Referenced Methods

Parameter	Methodology Reference	Analytical Results Milligrams/liter
Aluminum (Al)	EPA 202.1/7020	:
Arsenic (As)	EPA 206.3/7061	:
Antimony (Sb)	EPA 204.1/7040	:
Barium (Ba)	EPA 208.1/7030	:
Boron (B)	EPA 212.3	:
Cadmium (Cd)	EPA 213.1/7130	:
Chromium (Cr+6)	EPA 7186	:
Chromium (Cr)	EPA 215.1/7190	:
Copper (Cu)	EPA 220.1/7210	:
Cyanide (CN)	EPA 335.1/9010	: 0.013
Fluoride (F)	EPA 340.2	:
Lead (Pb)	EPA 209.1/7420	:
Manganese (Mn)	EPA 243.1/7460	:
Mercury (Hg)	EPA 245.1/7470	:
Nickel (Ni)	EPA 249.1/7520	:
Ammonia (N)	EPA 350.2	:
Nitrogen (TKN)	EPA 351.3	:
Phenolics	EPA 420.1/9065	:
Selenium (Se)	EPA 270.3/7741	:
Silver (Ag)	EPA 272.1/7760	:
Zinc (Zn)	EPA 289.1/7950	:
Demand (BOD)	EPA 405.1	:
Demand (COD)	EPA 410.1/210.4	:
Oil & Grease	EPA 413.1/9070	:
Carbon, Organic	EPA 415.1/9060	:
pH (Std. Units)	EPA 150.1	:
Solids, Suspended	EPA 160.2	:
Solids (TDS)	EPA 160.1	:

By: 

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

September 3, 1991

ChromaLab File No.: 0891234 D

SIMON - EEI, INC.

Attn: Douglas Hayes

RE: One soil sample for TTLC CAM 13 Metals analysis

Project Number: 513-925

Date Sampled: August 26, 1991

Date Submitted: August 26, 1991

Date Analyzed: August 30, 1991

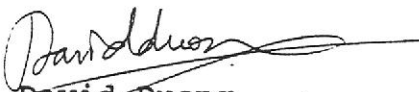
RESULTS: Sample I.D.: SB5-5-9

<u>Metals</u>	<u>Concentration</u> (mg/kg)	<u>Detection</u> <u>Limit</u> (mg/kg)	<u>% Spiked</u> <u>Recovery</u>
*Ag	N.D.	0.004	102.3%
As	N.D.	0.088	104.8%
Be	0.060	0.001	88.8%
Cd	0.297	0.012	85.3%
Cr	19.9	0.006	89.7%
Cu	5.95	0.004	100.1%
Hg	N.D.	0.200	94.6%
Ni	7.09	0.026	86.2%
Pb	7.02	0.044	84.4%
*Sb	N.D.	0.040	90.3%
Se	N.D.	0.200	84.9%
Tl	N.D.	0.088	82.0%
Zn	8.12	0.006	92.4%

Method of Analysis: 3050/6010

*Method of Analysis: 3005/6010

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

