



June 9, 1992

Ms. Maria Bigornia
The City of Emeryville Redevelopment Agency
2200 Powell Street
Emeryville, California 94608

Dear Ms. Bigornia:

RESULTS OF SOIL SAMPLING AND ANALYSIS CONDUCTED AT 5531 VALLEJO STREET IN EMERYVILLE, CALIFORNIA

This letter presents the results of the soil sampling and analysis conducted on May 11, 1992 at 5531 Vallejo Street in Emeryville, California. This work was conducted for the City of Emeryville Redevelopment Agency in accordance with the McLaren/Hart "Proposal to Conduct Limited Soil Sampling and Analysis at 5531 Vallejo Street in Emeryville, California" dated March 26, 1992. The purpose of the work performed was to confirm and investigate the shallow subsurface extent of soluble and total concentrations of lead in soil.

Work associated with the property inspection included:

- Review of previous soil sampling analytical results of investigations conducted at the subject site; and
- Soil sampling and analysis.

Background

Subsurface Consultants, Inc. of Oakland, California, collected five surface soil samples at the subject site in May, 1991. The actual sample depths were not provided in the Subsurface Consultants, Inc. report. Results of the May 1991 sampling are included in the Subsurface Consultants report dated June 10, 1991. Elevated concentrations of both total and soluble lead were identified in four surficial soil samples collected at the site (Table 1). Soil samples were collected in brass tubes, and one composite sample was initially analyzed. Lead was reported at a concentration of 294 parts per million (ppm) in the composite, and each of the discrete samples were subsequently analyzed for total lead (TTL), and extractable (soluble) lead by the WET test. Concentrations ranged from 108 to 1,030 ppm total lead, and 4.5 to 36.5 ppm soluble lead.

0608NCV2

TABLE 1
SUBSURFACE CONSULTANTS
SOIL SAMPLE ANALYTICAL DATA
(June, 1991)

BORING	SAMPLE DEPTH	TOTAL LEAD (ppm)	SOLUBLE LEAD (ppm)
1	Surface*	252	8.4
2	Surface*	108	4.6
3	Surface*	1,030	36.5
4	Surface*	280	10.4

(* Actual depth not reported)

Site Description

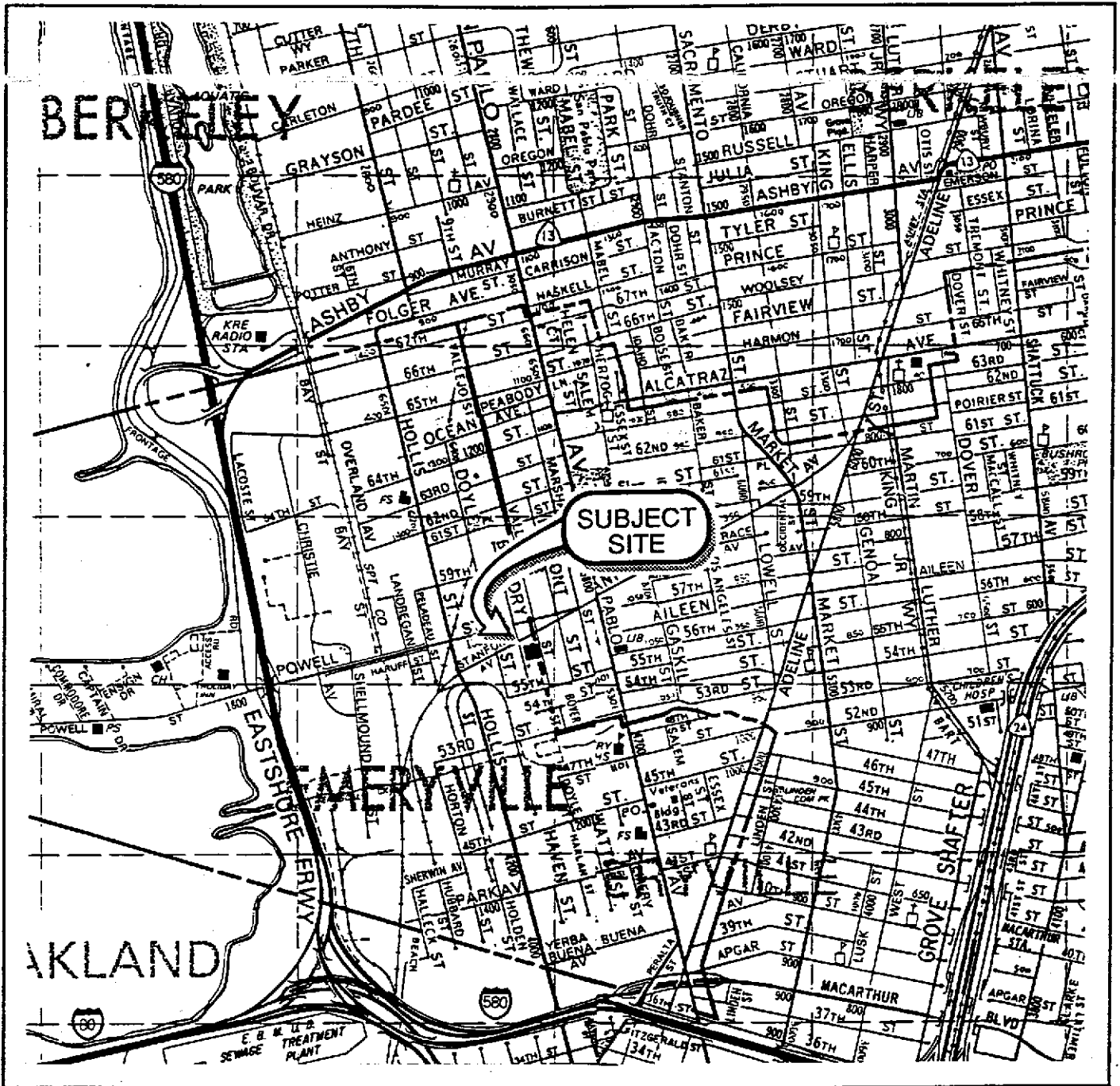
The subject site is a rectangular parcel totalling approximately 0.10 acres in area. The subject site was observed to be vacant at the time of inspection with the remnants of a foundation observed on the eastern portions of the lot. Soil was observed piled to approximately 1.5 feet above grade in the interior of the foundation. Vegetation was observed on the western portions of the lot. The site area map is included as Figure 1, and the site map including soil sampling locations is included as Figure 2.

Soil Sampling

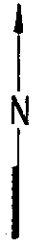
McLaren/Hart attempted to visually identify the locations of the soil borings drilled by Subsurface Consultants in 1991, however, only the location of boring 4 was positively located. The location for boring 3 was estimated using the sample location map contained in the Subsurface Consultants report. An obstruction was encountered in the estimated location of boring 3, and appears to be a portion of the old foundation.

McLaren/Hart drilled three hand auger soil borings, one at the previous location of boring 4, one in the vicinity of boring 3, and one in the vicinity of the center of the site. McLaren/Hart soil boring A was drilled immediately adjacent to Subsurface Consultants boring 4, soil boring B was drilled adjacent to Subsurface Consultants boring 3, and soil boring C was drilled near the center of the property.

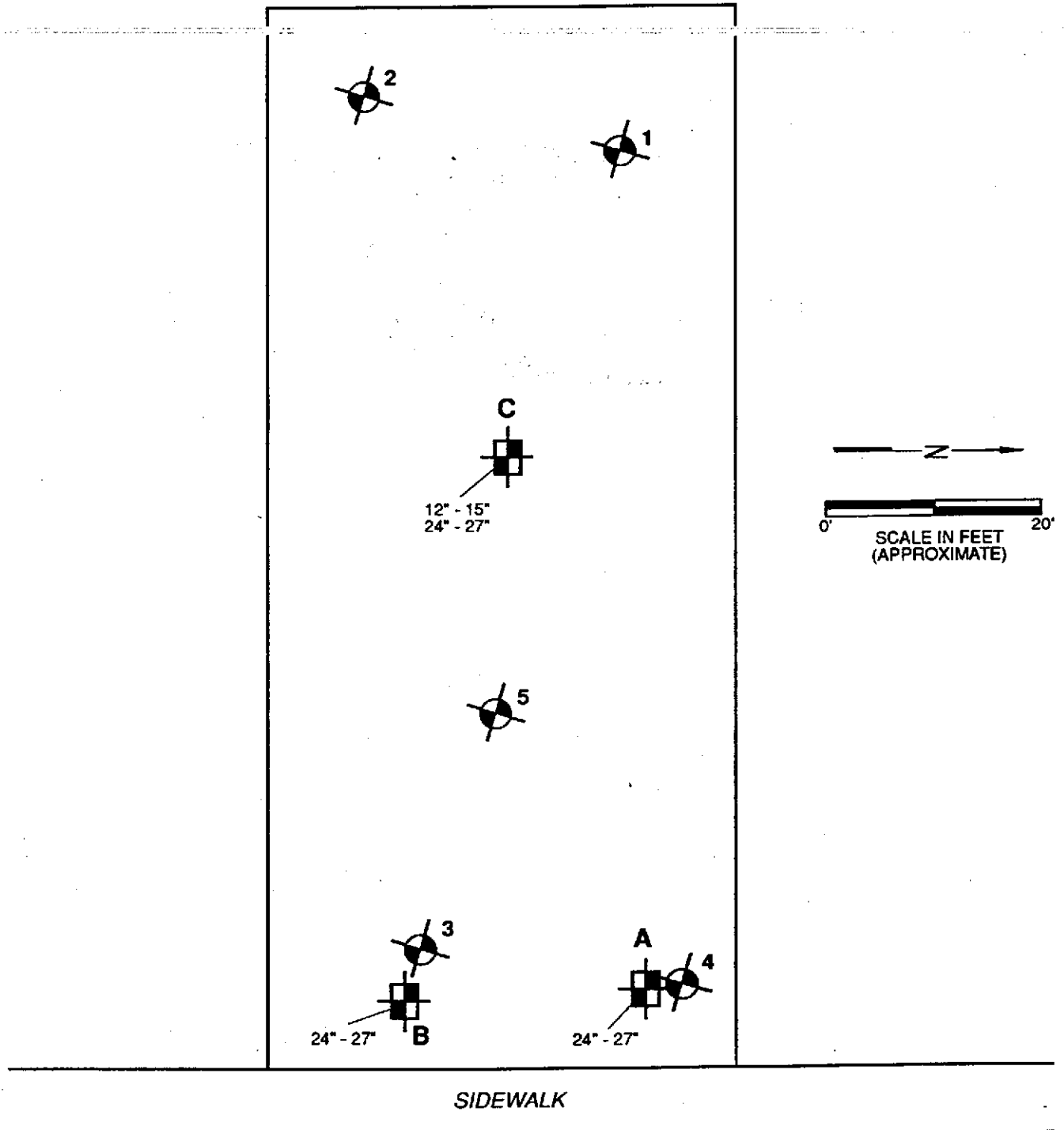
FIGURE 1
 AREA MAP
 5531 VALLEJO STREET
 EMERYVILLE, CA



Map Source: Thomas Bros. Map, Alameda and Contra Costa Counties Street Guide and Directory, 1991



**FIGURE 2
SOIL SAMPLING LOCATIONS
5531 VALLEJO STREET
EMERYVILLE, CA**



VALLEJO STREET

LEGEND



SUBSURFACE CONSULTANTS
SOIL SAMPLE LOCATION

McLAREN/HART SOIL
SAMPLE LOCATION

24" - 27"

SAMPLED DEPTH INTERVAL



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Hand auger borings A and B were drilled to a depth of approximately two feet below ground surface, and one soil sample was collected at that depth by driving a California Modified Split Spoon Sampler fitted with two 2-inch diameter by 3-inch long brass tubes a minimum of six inches into undisturbed soil. The sampler was driven using a twenty-five pound slide hammer. Soil samples were collected at depths of 1 foot and 2 feet below ground surface in boring C.

Upon removal of the slide hammer from the hole, the brass tubes containing the soil were removed, sealed, labeled, placed in an lock-tight bag and placed in an ice chest prior to delivery to the analytical laboratory. All sampling equipment was washed with a non-phosphate detergent and double rinsed prior to drilling of the next boring. Soil cuttings were placed back into the bore holes.

Four soil samples collected were submitted to McLaren Analytical Laboratory in Rancho Cordova, California for both total and soluble lead analyses using EPA Method 6010/7000.

Soil Analytical Results

Soil samples were analyzed for soluble lead as Soluble Threshold Limit Concentrations (STLC) using the Title 22 Waste Extraction Test (WET), and for total lead as Total Threshold Limit Concentration (TTLC) by Cam Metals. Analytical results are presented in Table 2. Analytical data sheets and the chain-of-custody record are included as Attachment I.

BORING	SAMPLE DEPTH	TOTAL LEAD (ppm)	SOLUBLE LEAD (ppm)
A	24"	15	< 1.0
B	24"	24	< 1.0
C	12"	21	< 1.0
C	24"	12	< 1.0

Concentrations of total lead were detected in all four soil samples collected. Soil boring A, drilled adjacent to Subsurface Consultants boring 4, contained a reported concentration of total lead of 15 ppm. Boring B, drilled adjacent to Subsurface Consultants boring 3,

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contained a detected concentration of total lead of 24 ppm. Boring C, drilled near the center of the subject site, contained reported concentrations of total lead of 21 ppm and 12 ppm, in the samples collected at depths of 1 foot and 2 feet below ground surface.

Concentrations of soluble lead were not present above the laboratory detection limit of 1 ppm.

CONCLUSIONS

In comparison to the surface soil sample analytical results reported by Subsurface Consultants, the soil samples collected at depths of one to two feet below ground surface by McLaren/Hart indicated a marked decrease in total lead concentrations with depth. For example, in the eastern portion of the site, where borings B and 3 were placed, the total lead concentration decreased from 1,030 ppm in the surface sample to 24 ppm in the sample collected at a depth of two feet, while the soluble lead concentration decreased from 36.5 ppm to below the detection limit of one ppm.

The marked decrease in total lead concentrations with depth, and the limited areal extent identified, suggests that lead contamination is limited to within the top one to two feet of soil, situated along the eastern portion of the site.

The California Code of Regulations, Title 22 threshold levels established for lead are 5 ppm for soluble lead and 1,000 ppm for total lead. None of the soil samples collected during this investigation exceeded STLC or TTLC regulated levels. Based on these criteria, if removal of lead-impacted soil is required, portions of the soils would require disposal in a Class I hazardous waste facility.

McLaren/Hart recommends that this letter report be presented to the Alameda County Department of Health for their review and response.

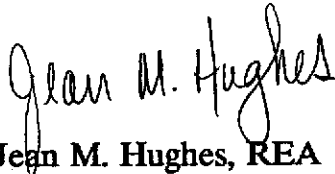
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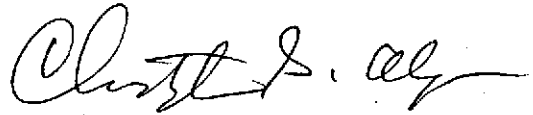
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We appreciate the opportunity to provide consulting services to the Emeryville Redevelopment Agency. If you have any questions concerning this report, please contact us at (510) 521-5200.

Sincerely,



Jean M. Hughes, REA
Manager, Environmental Assessments
Supervising Geoscientist



Christopher S. Alger, CEG
Senior Associate Geoscientist

Attachments

ATTACHMENT I
SOIL ANALYTICAL DATA SHEETS
AND
CHAIN-OF-CUSTODY RECORDS



Date: May 22, 1992
LP #: 5942

Chris Alger
McLaren/Hart
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Alger:

Enclosed are the laboratory results for the four samples submitted by you to the McLaren Analytical Laboratory on May 13, 1992, for the project 5531 Vallejo St.

The analyses you requested are:

- CAM Title 22 Metals (STLC) (Lead only) (4 - Soil)
- CAM Metals (TTLC) (Lead only) (4 - Soil)

The report consists of the following sections:

1. A copy of the chain of custody
2. Quality Control Definitions and Report
3. Comments
4. Analytical results
5. Copy of final billing submitted to accounting.

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing McLaren Analytical Laboratory. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads 'Anthony S. Wong'.

Anthony S. Wong, Ph.D.
Director, Laboratory/Managing Principal

CAM TITLE 22 METALS (a)
SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC)

Preparation Method: Title 22 Waste Extraction Test (WET)

Project Name: 5531 Vallejo St.

Project Number: 04.0600140.00

Sample Description: Soil

Lab Project- ID Number: 5942-001

Sample Number: 54216 05-11-A

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Extracted: 05/13/92

Batch Number: 920513-1101

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION mg/L (ppm)</u>	<u>REPORTING LIMIT mg/L (ppm)</u>
Lead (Pb)/6010	05/18/92	BRL	1.0

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy Mcclenald for CM Date: 5-22-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

102891MTL6



CAM TITLE 22 METALS (a)
SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC)

Preparation Method: Title 22 Waste Extraction Test (WET)

Project Name: 5521 Velloja Ct.

Project Number: 04.0600140.00

Sample Description: Soil

Lab Project- ID Number: 5942-002

Sample Number: 54217 05-11-B

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Extracted: 05/13/92

Batch Number: 920513-1101

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION mg/L (ppm)</u>	<u>REPORTING LIMIT mg/L (ppm)</u>
Lead (Pb)/6010	05/18/92	BRL	1.0

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald for CM Date: 5-22-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

102891MTL6



CAM TITLE 22 METALS (a)
SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC)

Preparation Method: Title 22 Waste Extraction Test (WET)

Project Name: 5531 Vallois St.

Project Number: 04.0600140.00

Sample Description: Soil

Lab Project-ID Number: 5942-003

Sample Number: 54218 05-11-C1

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Extracted: 05/13/92

Batch Number: 920513-1101

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION mg/L (ppm)</u>	<u>REPORTING LIMIT mg/L (ppm)</u>
Lead (Pb)/6010	05/18/92	BRL	1.0

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald for CM Date: 5-22-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

102891MTL6



CAM TITLE 22 METALS (a)
SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC)

Preparation Method: Title 22 Waste Extraction Test (WET)

Project Name: 5521 Vallecito St

Project Number: 04.0600140.01

Sample Description: Soil

Lab Project- ID Number: 5942-004

Sample Number: 54219 05-11-C2

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Extracted: 05/13/92

Batch Number: 920513-1101

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION</u> mg/L (ppm)	<u>REPORTING LIMIT</u> mg/L (ppm)
Lead (Pb)/6010	05/18/92	BRL	1.0

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald for CM Date: 5-22-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

102891MTL6



CAM METALS (a)
TOTAL THRESHOLD LIMIT CONCENTRATION (TTLIC)

Preparation Method: EPA 3050

Project Name: 5531 Vallejo St.

Project Number: 04.0600140.00

Sample Description: Soil

Lab Project-ID Number: 5942-001

Sample Number: 54216 05-11-A

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Digested: 05/14/92

Batch Number: 920514-1302

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION mg/Kg (ppm)</u>	<u>REPORTING LIMIT mg/Kg (ppm)</u>
Lead (Pb)/6010	05/18/92	15.	2.5

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald for cm Date: 5-27-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

082391MTL4



CAM METALS (a)
TOTAL THRESHOLD LIMIT CONCENTRATION (TTLIC)

Preparation Method: EPA 3050

Project Name: 5531 Vallejo St.

Project Number: 04.0600140.00

Sample Description: Soil

Lab Project-ID Number: 5942-002

Sample Number: 54217 05-11-B

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Digested: 05/14/92

Batch Number: 920514-1302

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION mg/Kg (ppm)</u>	<u>REPORTING LIMIT mg/Kg (ppm)</u>
Lead (Pb)/6010	05/18/92	24.	2.5

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald Loren Date: 5-27-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

082391MTL4



CAM METALS (a)
TOTAL THRESHOLD LIMIT CONCENTRATION (TTLIC)

Preparation Method: EPA 3050

Project Name: 5531 Vallejo St.

Project Number: 04.0600140.00

Sample Description: Soil

Lab Project-ID Number: 5942-003

Sample Number: 54218 05-11-C1

Date Sampled: 05/11/92

Date Received: 05/13/92

Date Digested: 05/14/92

Batch Number: 920514-1302

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION mg/Kg (ppm)</u>	<u>REPORTING LIMIT mg/Kg (ppm)</u>
Lead (Pb)/6010	05/18/92	21.	2.5

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald for CM Date: 5-22-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

082391MTL4



CAM METALS (a)
TOTAL THRESHOLD LIMIT CONCENTRATION (TTLC)

Preparation Method: EPA 3050

Project

Name: 5531 Vallejo St.

Project

Number: 04.0600140.00

Sample

Description: Soil

Lab Project-

ID Number: 5942-004

Sample

Number: 54219 05-11-C2

Date

Sampled: 05/11/92

Date

Received: 05/13/92

Date

Digested: 05/14/92

Batch

Number: 920514-1302

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>DATE ANALYZED</u>	<u>CONCENTRATION</u> mg/Kg (ppm)	<u>REPORTING</u> <u>LIMIT</u> mg/Kg (ppm)
Lead (Pb)/6010	05/18/92	12.	2.5

Dilution: None

Comments: (a) Only the requested analyte is reported.

Approved By: Nancy McDonald Loren Date: 5-22-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

082391MTL4





000594

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
 Laboratory Project No.: 5942
 Storage Refrigerator ID: 4-35
 Storage Freezer ID: _____
 Secured Yes No

Project Name: SS31 Vullgo St. Project #: 04-0600140-000 Sampler: George Galindo (Printed Name) George Galindo (Signature)

Relinquished by: (Signature and Printed Name) [Signature] Received by: (Signature and Printed Name) W. Eich Date: 5-12-92 Time: 16:00
 Relinquished by: (Signature and Printed Name) W. Eich Received by: (Signature and Printed Name) [Signature] Date: 5-13-92 Time: 0730
 Relinquished by: (Signature and Printed Name) [Signature] Received by: (Signature and Printed Name) [Signature] Date: 5-15-92 Time: 850
 Relinquished by: (Signature and Printed Name) _____ Received by: (Signature and Printed Name) ANA mass Date: 5-13-92 Time: 0135

SHIP TO:
 McLaren Analytical Laboratory
 11101 White Rock Road
 Rancho Cordova, CA 95670
 (916) 638-3696
 FAX (916) 638-2842

Method of Shipment: Express-it
 Shipment ID: _____

Circle or Add Analysis(es) Requested

- MTL#1 Cd, Cr, Cu, Hg, Pb, Ni, Zn
- MTL#2 Cd, Cr, Cu, Hg, Pb, Ni, Zn
- Explosives
- Cr VI
- 602 / 8020
- 608 / 8080
- 610 / 8100
- 625 / 8270
- TPH / D
- Sieve / TOC
- Moisture / Density
- Chloride / pH
- Selected Metals Based on TTLC
- Selected Metals Based on pH and Sub
- TDS 180.1 / Hardness 242.1
- Ammonia 330 / Sulfate 376
- Title 22 / Metals
- Alkalinity 310.1 / Formaldehyde

a) Identify specific metals requested under Special Instructions

Sample ID Number	Date	Time	Sample Description	Analysis Requested													Container(s)			FOR LABORATORY USE ONLY				
				MTL#1	MTL#2	Explosives	Cr VI	602/8020	608/8080	610/8100	625/8270	TPH/D	Sieve/TOC	Moisture/Density	Chloride/pH	Selected Metals Based on TTLC	Selected Metals Based on pH and Sub	TDS 180.1 / Hardness 242.1	Ammonia 330 / Sulfate 376	Title 22 / Metals	Alkalinity 310.1 / Formaldehyde	TAT	#	Type
1	5/12/92		Soil			X															4	1	R	5942-001
2	5/12/92		Soil			I															4	1	B	5942-002
3	5/12/92		Soil			I															4	1	F	5942-003
4	5/12/92		Soil			I															4	1	B	5942-004
5																								
6																								
7																								
8																								
9																								
10																								

Special Instructions/Comments: Analyze for Pb only
both soluble by WET and
total by TTLC

Sample Archive/Disposal:
 Laboratory Standard
 Other _____

TAT (Analytical Turn-Around Times) 1 = 24 hours 2 = 48 hours 3 = 1 week 4 = 2 weeks
 Container Types: B=Brass Tube, V=VOA Vial, A=1-Liter Amber, G=Glass Jar, C=Cassette, O = Other _____

SEND DOCUMENTATION AND RESULTS TO (Check one):
 Project Manager/Office: Chris Alger / Alameda
 Client Name: _____
 Company: _____
 Address: _____
 Phone: () _____ Fax: _____

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: samples intact Temp OK

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS: A method blank (MB) is a laboratory generated sample free of any contamination. The method blank assesses the degree to which the laboratory operations and procedures cause false-positive analytical results for your samples. The method blank results associated with your samples are attached.

LABORATORY CONTROL SPIKES

The LCS Program:

The laboratory control spike is a well characterized matrix (organic pure type II water for water samples and contamination free sand for soil samples) which is spiked with certain target parameters and analyzed in duplicate at approximately 5% of the sample load in order to assure the accuracy and precision of the analytical method. The results of the laboratory control spike associated with your samples are attached.

Accuracy is measured using percent recovery, i.e.:

$$\text{Percent Recovery} = \frac{\text{(measured concentration)}}{\text{(actual concentration)}} \times 100$$

Precision is measured using the relative percent difference (RPD) from duplicate tests, i.e.:

$$\text{RPD} = \frac{\% \text{ Recovery of Spike}_{(1)} - \% \text{ Recovery of Spike}_{(2)}}{(\% \text{ Recovery of Spike}_{(1)} + \% \text{ Recovery of Spike}_{(2)})/2} \times 100$$

Control limits for accuracy and precision are different for different methods. They may also vary with the different sample matrices. They are based on laboratory average historical data and EPA limits which are approved by the Quality Assurance Department.

(DC3-CN5942)



QUALITY CONTROL REPORT

METHOD BLANK

Method: CAM Metals STLC
Units: mg/l. (ppm)

Date Analyzed: 05/18/92
Date Extracted: 05/13/92
Batch Number: 920513-1101

<u>Compound</u>	<u>Reporting Limit</u>	<u>Results of the MB</u>
Lead (Pb)/6010	1.0	BRL

(DC3-CN5942)



QUALITY CONTROL REPORT

McLaren Analytical Laboratory
Spike/Spike Duplicate Recovery
Metals

LP#: 5942

Instrument #: ICP #1

Batch #: 920518-1101

Analyst: BY

Date Of Analysis: 05/18/92

Spike Sample ID: LCSX/LCSDX

Date of Digestion: 05/18/92

Spike ID Code: 4-1411

Soil

Matrix: Extract Units: mg/L

METALS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	ACCEPTANCE LIMITS	
	SAMPLE CONC.	SPIKE CONC.	SAMPLE + SPIKE CONC.	SPIKE REC.%	SAMPLE DUP. + SPIKE CONC.	SPIKE DUP. REC.%	RPD %	REC%	RPD
Pb	0	5.	4.61	92	5.11	102	10	75 - 125	≤20

Spike Recovery = $d = ((c-a)/b) \times 100$
 Spike Duplicate Recovery = $f = ((e-a)/b) \times 100$
 Relative Percent Difference = $g = (|c-e|)/((c+e) \times .5) \times 100$



QUALITY CONTROL REPORT

McLaren Analytical Laboratory
Spike/Spike Duplicate Recovery
Metals

LP#: 5942

Instrument #: ICP #1

Analyst: RJ

Batch #: 920518-1101

Date Of Analysis: 05/18/92

Spike Sample ID: 5942-001MS

Date of Digestion: 05/18/92

Spike ID Code: 4-1411

Soil

Matrix: Extract Units: mg/L

METALS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	ACCEPTANCE LIMITS	
	SAMPLE CONC.	SPIKE CONC.	SAMPLE + SPIKE CONC.	SPIKE REC.%	SAMPLE DUP. + SPIKE CONC.	SPIKE DUP. REC.%	RPD %	REC%	RPD
Pb	0	5.	4.97	99	NA	NA	NA	75 - 125	≤20

$$\text{Spike Recovery} = d = ((c-a)/b) \times 100$$

$$\text{Spike Duplicate Recovery} = f = ((e-a)/b) \times 100$$

$$\text{Relative Percent Difference} = g = (|c-e|)/((c+e) \times .5) \times 100$$



QUALITY CONTROL REPORT

METHOD BLANK

Method: CAM Title 22 Metals (TTL Limit)
Units: mg/Kg (ppm)

Date Analyzed: 05/18/92
Date Extracted: 05/14/92
Batch Number: 920514-1302

<u>Compound</u>	<u>Reporting Limit</u>	<u>Results of the MB</u>
Lead (Pb)/6010	2.5	BRL



QUALITY CONTROL REPORT

McLaren Analytical Laboratory
Spike/Spike Duplicate Recovery
Metals

LP#: 5942

Instrument #: ICP #1

Analyst: PI

Batch #: 920514-1302

Date Of Analysis: 05/18/92

Spike Sample ID: LCSS/LCSDS

Date of Digestion: 05/13/92

Spike ID Code: 4-1411

Matrix: Soil Units: mg/Kg

METALS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	ACCEPTANCE LIMITS	
	SAMPLE CONC.	SPIKE CONC.	SAMPLE + SPIKE CONC.	SPIKE REC.%	SAMPLE DUP. + SPIKE CONC.	SPIKE DUP. REC.%	RPD %	REC%	RPD
Pb	0	25.	24.8	99	24.9	100	0	75 - 125	≤20

Spike Recovery = $d = ((c-a)/b) \times 100$
 Spike Duplicate Recovery = $f = ((e-a)/b) \times 100$
 Relative Percent Difference = $g = (|c-e|)/((c+e) \times .5) \times 100$



ABBREVIATIONS USED IN THIS REPORT

BRL	Below Reporting Limit
MB	Method Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
LCS	Laboratory Control Spike
LCSD	Laboratory Control Spike Duplicate
RPD	Relative Percent Difference
NS	Not Specified
NA	Not Applicable

COMMENTS

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content. Blank results are reported in the Case Narrative.

For STLC metals analysis, the laboratory reports batch numbers on the following basis: Extraction batch numbers are reported for the samples and method blanks. Digestion batch numbers are reported for the spikes.

Results are reported on the attached data sheets.



(DC3-CN5942)