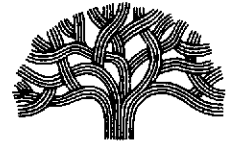




ENVIRONMENTAL
PROTECTION
98 SEP -2 PM 3:09

CITY OF OAKLAND



DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 5301 • OAKLAND, CALIFORNIA 94612

Public Works Agency
Environmental Services

3978

(510) 238-6688
FAX (510) 238-7286
TDD (510) 238-7644

August 28, 1998

Mr. Barney Chan
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: Soil Boring Report, City of Oakland Municipal Service Center,
(94407)

Dear Barney:

Enclosed is one copy of a report prepared by our consultant, Cambria Environmental Technology, Inc., dated August 11, 1998, presenting the results of the soil boring samples collected to "pre-classify" the soil overburden from the fuel pipeline excavation to be conducted at the subject site. I understand that you have reviewed the report that had been previously faxed to you by Cambria and, as indicated in our telephone conversation on August 27, 1998, have provided your verbal acceptance of the recommendations presented in the report.

Please call me at 238-7695, if you have any questions or require additional information.

Sincerely,

Mark B. Hersh
Environmental Program Specialist

cc: Andrew Clark-Clough, PWA/Environmental Services Division
David Elias, Cambria Environmental Technology, Inc.

August 11, 1998

Mr. Mark Hersh
City of Oakland - Public Works Agency
Environmental Services - Dalziel Building
250 Frank H. Ogawa Plaza, Suite 5301
Oakland CA 94612



Re: **Soil Pre-classification Sampling Results**
City of Oakland Municipal Service Center
7101 Edgewater Drive
Oakland, California 94621

Dear Mr. Hersh:

Cambria Environmental Technology, Inc. (Cambria) is pleased to present the results of our pre-classification sampling conducted on August 3rd, 1998. The sampling was conducted in accordance with our July 31, 1998 Workplan and an August 3rd, 1998 Workplan Comments Letter from Barney Chan of the Alameda County Health Care Services Agency (ACHCS). Presented below is a discussion of the sampling results. A site figure depicting the sample locations is included as Figure 1, the analytic results for soil are tabulated on Table 1, and the laboratory analytic report is included as Attachment A.

SAMPLING RESULTS


Background: The City of Oakland (City) plans to remove approximately 2,450 lineal ft of gasoline and diesel piping in August 1998, from the site referenced above. The overburden soils needed to be characterized prior to returning the soil to the trench as backfill. Pre-characterization of the overburden soils would enable the City to anticipate the volume of overburden soil that needed to be off-hauled. Budgetary concerns allow the City to excavate and off-haul a maximum of approximately 850 cubic yards of Class II, III soil during the piping removal. Because of this constraint, we needed to know the volume of overburden that would require removal from the site prior to the piping removal. If less than 850 cubic yards of overburden were removed and off-

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

**Cambria
Environmental
Technology, Inc.**

1144 65th Street
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Oakland, CA 94608
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hauled, then additional soil, up to a total of 850 cubic yards, would be excavated from areas containing the highest hydrocarbon concentrations.



Sampling Locations: The overburden volume was calculated as follows: (2,450 ft of piping) x (1.5 ft by 2.5 ft trench) equals about 340 cubic yards of soil, in situ. Cambria collected 2 in-situ samples for every 50 cubic yards of overburden soil generated and composited the two samples into one for analysis. We collected the samples from 1.5 ft depth, immediately above the former dispensing system piping. Therefore, we collected 18 soil samples and ran 8, 2-point composite analyses and 2 single point analyses. The single point analyses were run to avoid compositing samples from two different piping areas. This equated to at least one sample for every 150 lineal ft of piping.

Laboratory Analyses: Each 2-point composite and single point analyses were analyzed at McCampbell Analytical of Pacheco, California, for total petroleum hydrocarbons as gasoline (TPHg), TPH as diesel (TPHd), benzene, ethylbenzene, toluene, and xylenes (BETX), and methyl tert butyl ether (MTBE). Three of the samples were also analyzed for total lead to ensure landfill acceptance. Analytic results are presented in Attachment A.

Target Concentrations: In a July 31, 1998 Workplan, Cambria proposed using the California Regional Water Quality Control Board - San Francisco Bay Region, San Francisco International Airport (SFO), Migration Management Zone 1 Tier 1 Standards to assess whether overburden should be off-hauled or returned to the trench as back fill. These standards were derived considering ecological risk and are appropriate for screening the overburden soil because both SFO and the subject site are situated adjacent to the San Francisco Bay saltwater habitat. The Migration Management Zone Criteria is appropriate for soil located at least 300 ft from the potential saltwater habitat receptors. The westernmost piping is located about 240 ft from the bay, and the two eastern runs are located about 300 and 380 ft from the bay. In an August 3rd, 1998 letter, Mr. Chan of ACHCS recommended that the more conservative Saltwater Ecological Protection Zone Tier 1 Standards be used because of the proximity of the former tanks to the bay. Overburden containing hydrocarbons in excess of the thresholds described below would be disposed at an appropriate facility, while overburden that met this criteria would be returned to the trench as backfill.

The standards discussed above are as follows:

SFO Management Standards		
Analyte	Migration Management Zone 1 Tier 1 Standards (mg/kg)	Saltwater Ecological Protection Zone Tier 1 Standards (mg/kg)
TPHg	112	16
TPHd	480	68
Benzene	47	2.7
Ethylbenzene	89	5
Toluene	2,800	2,700
Xylenes	990	990

Analytic Results for Soil: Composite samples PS-10,11; PS- 16,17, and single point sample PS-18 exceeded the Saltwater Ecological Protection Zone Tier 1 Standards for TPHg. Composite samples PS-10,11 and single point sample PS-18 exceeded the Saltwater Ecological Protection Zone Tier 1 Standards for TPHd. Only sample PS-10,11 exceeded the Migration Management Zone 1 Tier 1 Standards for TPHg. Analytic results for soil are presented in Table 1.

Recommendations: All of the samples exceeding the Protection Standards were collected from the two eastern piping runs, located greater than 300 ft from the potential saltwater habitat receptors. The soil in these areas should be evaluated using the Migration Standards because of their distance from the bay. Please note, we are not proposing that future excavation decisions be made using these standards, especially soils located less than 300 ft from the bay. Based on this rationale, we recommend that all of the overburden soil be returned to the trenches after piping removal, with the exception of the 50 cubic yards of trenching spoils located between samples PS-10 and PS-12 that exceeded the Migration Management Zone 1 Tier 1 Standards. This soil will be manifested and transported to an appropriate facility for disposal. The remaining 800 cubic yard soil off-hauling budget will be used to excavate soil containing the highest hydrocarbon concentrations.

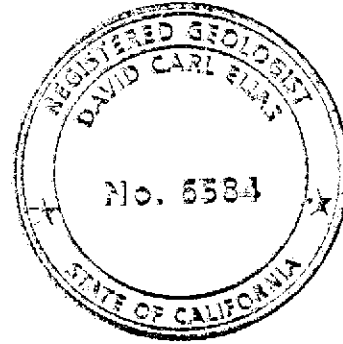
CLOSING

Cambria appreciates providing consulting services to the City of Oakland. Please contact me at (510) 420-3307 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

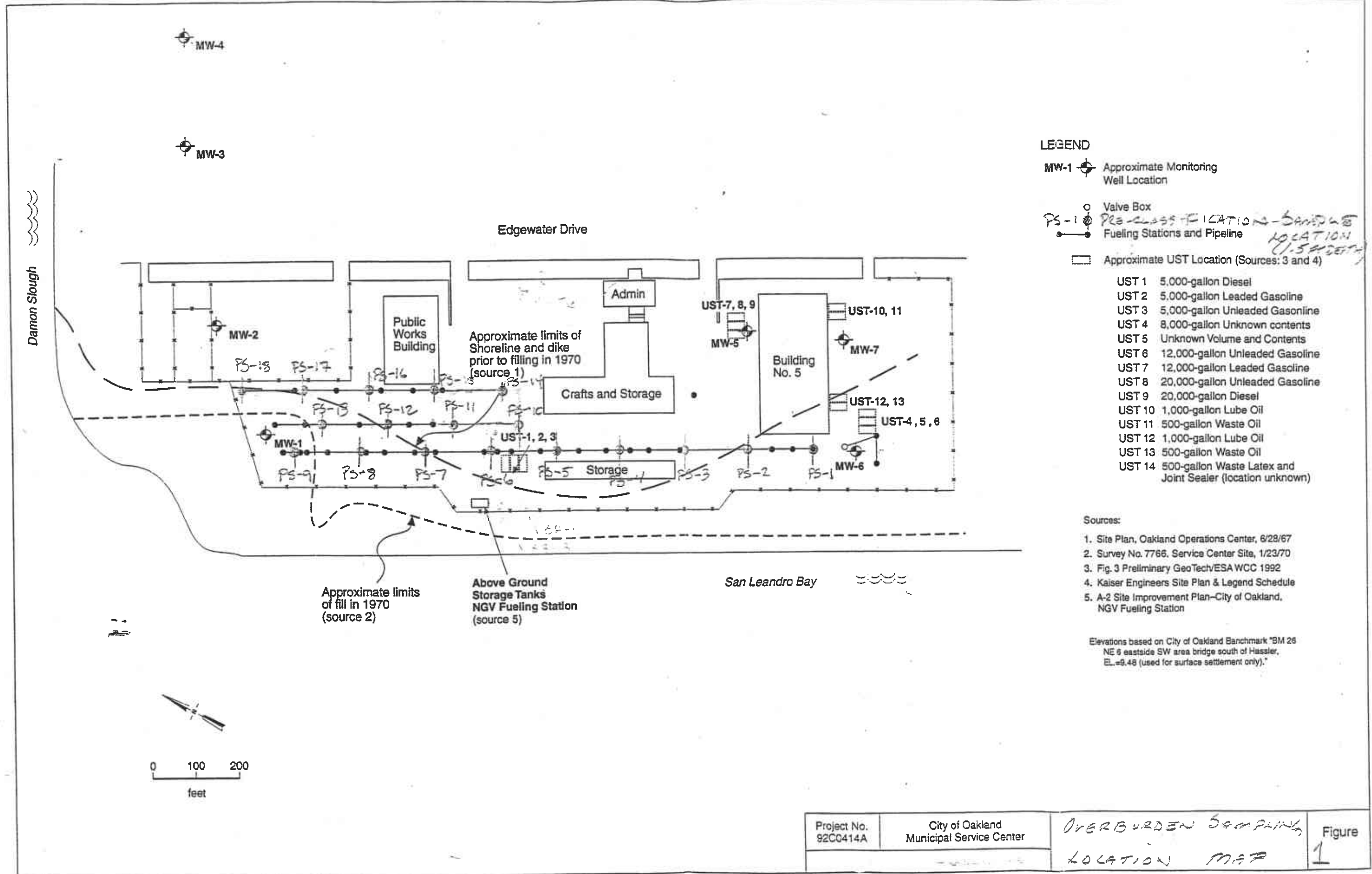


David Elias
David Elias, RG
Senior Geologist



Attachments: Laboratory Analytic Report

H:\City of Oakland\MSC\Pre-screening\preclassreslt.wpd



LEGEND

- MW-1 Approximate Monitoring Well Location
 - PS-1 Valve Box
 - Fueling Stations and Pipeline
 - Approximate UST Location (Sources: 3 and 4)
- UST 1 5,000-gallon Diesel
 - UST 2 5,000-gallon Leaded Gasoline
 - UST 3 5,000-gallon Unleaded Gasoline
 - UST 4 8,000-gallon Unknown contents
 - UST 5 Unknown Volume and Contents
 - UST 6 12,000-gallon Unleaded Gasoline
 - UST 7 12,000-gallon Leaded Gasoline
 - UST 8 20,000-gallon Unleaded Gasoline
 - UST 9 20,000-gallon Diesel
 - UST 10 1,000-gallon Lube Oil
 - UST 11 500-gallon Waste Oil
 - UST 12 1,000-gallon Lube Oil
 - UST 13 500-gallon Waste Oil
 - UST 14 500-gallon Waste Latex and Joint Sealer (location unknown)

- Sources:
1. Site Plan, Oakland Operations Center, 6/28/67
 2. Survey No. 7766, Service Center Site, 1/23/70
 3. Fig. 3 Preliminary GeoTech/ESA WCC 1992
 4. Kaiser Engineers Site Plan & Legend Schedule
 5. A-2 Site Improvement Plan—City of Oakland, NGV Fueling Station

Elevations based on City of Oakland Benchmark *BM 26 NE 6 eastside SW area bridge south of Hassler, EL.=9.48 (used for surface settlement only)."

Project No. 92C0414A	City of Oakland Municipal Service Center	OVERBURDEN SAMPLING LOCATION MAP	Figure 1
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Table 1. Pre-screening Soil Analytic Results - City of Oakland - Municipal Service Center - 7171 Edgewater Drive, Oakland, California

Sample ID	Date	Depth (ft)	TPH-G	TPH-D	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Total Lead
(Concentrations in mg/kg)										
PS-1,2	8/3/98	1.5	14 ^a	38 ^{dc}	<0.0050	0.039	0.082	0.12	<0.050	...
PS-3,4	8/3/98	1.5	13 ^{ab}	15 ^{de}	<0.0050	0.049	<0.0050	0.065	<0.1	14
PS-5,6	8/3/98	1.5	<1.0	<1.0	<0.0050	0.008	<0.0050	0.011	<0.050	...
PS-7,8	8/3/98	1.5	7.4 ^c	5.6 ^f	0.096	0.026	0.14	0.56	<0.050	...
PS-9	8/3/98	1.5	2.9 ^a	1.6 ^d	<0.0050	0.012	<0.0050	0.022	<0.050	...
PS-10,11	8/3/98	1.5	800 ^{ab}	160 ^{de}	<0.050	2.1	13	30	<6	21
PS-12,13	8/3/98	1.5	5.6 ^{ab}	6.0 ^{de}	<0.0050	0.012	0.089	0.083	<0.050	...
PS-14,15	8/3/98	1.5	1.6 ^a	13 ^d	<0.0050	0.006	<0.0050	0.022	<0.050	21
PS-16,17	8/3/98	1.5	26 ^{ab}	8.8 ^d	<0.0050	0.098	<0.0050	0.21	<0.5	...
PS-18	8/3/98	1.5	67 ^{ab}	76 ^e	0.037	0.14	0.50	0.40	<0.050	...

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline analyzed using Modified EPA Method 8015
 TPH-D = Total petroleum hydrocarbons as diesel analyzed using Modified EPA Method 8015 with silica gel cleanup
 Benzene, ethylbenzene, toluene, xylenes, and methyl tert butyl ether analyzed using EPA Method 8020
 <X = Not detected at detection limit of X
 mg/kg = milligrams per kilogram
 ... = not analyzed

Notes:


a = no recognizable pattern
 b = heavier gasoline range compounds are significant (aged gasoline?)
 c = unmodified or weakly modified gasoline is significant
 d = oil range compounds are significant
 e = gasoline range compounds are significant
 f = diesel range compounds are significant, no recognizable pattern

C A M B R I A



Attachment - A

Laboratory Analytical Report

 McCAMPBELL ANALYTICAL INC.	110 Second Avenue South, #D7, Pacheco, CA 94553-5560 Telephone : 925-798-1620 Fax : 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com	

Cambria Environmental Technology 1144 65 th Street, Suite C Oakland, CA 94608	Client Project ID: City Of Oakland, 7101 Edgewater Dr.	Date Sampled: 08/03/98
	Client Contact: David Elias	Date Received: 08/04/98
	Client P.O.:	Date Extracted: 08/04-08/06/98
		Date Analyzed: 08/05-08/06/98

EPA analytical methods 6010/200.7, 239.2*

Lead*

Lab ID	Client ID	Matrix	Extraction ^a	Lead*	% Recovery Surrogate
93054	PS-3,4	S	TTLIC	14	102
93058	PS-10,11	S	TTLIC	21	105
93060	PS-14,15	S	TTLIC	21	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	S	TTLIC	3.0 mg/kg		
	W	TTLIC	0.005 mg/l.		
	...	STL.C, TCLP	0.2 mg/L		

* soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STL.C / SPLP / TCLP extracts in mg/L
 * Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STL.C & TCLP extracts and method 239.2 (AA Furnace) for water samples

* EPA extraction methods 1311 (TCLP), 3010/3020 (water, TTLIC), 3040 (organic matrices, TTLIC), 3050 (solids, TTLIC); STL.C - CA Title 22

* surrogate diluted out of range; N/A means surrogate not applicable to this analysis

* reporting limit raised due matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations

DHS Certification No. 1644

 Edward Hamilton, Lab Director

