INFORMATION HANDOUT

For Contract No. 11-415404
At 11-SD-8-16.0/R30.5

Identified by
Project ID 1113000013

MATERIALS INFORMATION

1. Aerially Deposited Lead Assessment, dated March 28, 2001.
2. Statistical Analysis of Lead Concentrations in Soil Interstate 8, San Diego County, dated May 20, 2015.
3. Water Source Information, Padre Dam Water District, dated February 24, 2015.
4. Water Source Information, Helix Water District, dated March 5, 2015.

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

LIMITED AERIALLY DEPOSITED LEAD ASSESSMENT INTERSTATE 8 2ND STREET TO GREENFIELD DRIVE EL CAJON, CALIFORNIA PM 17.7/R18.7 TASK ORDER NO. 11-063800-VO CONTRACT NO. 43A0012

PREPARED FOR:
California Department of Transportation
2829 Juan Street
San Diego, California 92110

PREPARED BY:
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March 28, 2001
Project No. 104330001

- Collect soil samples on December 27 and 28, 2000, using a 9-cm diameter hand auger. Sampling equipment was decontaminated prior to sampling each boring using a three-step wash and rinse using non-phosphate Liquinox® detergent, and potable and deionized water. Soil borings were backfilled with cuttings.

- Analyze soil samples for total lead using Environmental Protection Agency (EPA) test method 7420. A random selection of ten percent of the soil samples collected (totaling 17), were analyzed for pH using EPA test method 9045. The soil samples that contained total lead greater than 50 milligrams per kilogram (mg/kg) and less than 1,000 mg/kg were additionally tested for soluble lead using the waste extraction test (WET) with citric acid as the extraction using EPA test method 7420. Soil samples with soluble lead citric concentrations greater than 5.0 milligrams per liter (mg/ℓ) were also tested for soluble lead with de-ionized water as the extraction using EPA test method 7420. Analytical results are summarized in Appendix B.

- Perform statistical analysis to normalize data, divide into 12 separate data sets for eastbound, westbound, and median by depth; calculate confidence intervals for both 80 and 95 upper confidence level (UCL); and correlate total and soluble lead.

- Prepare and deliver GPS location data and laboratory analytical data electronically in Microsoft Excel format per Caltrans specifications.

- Prepare a report presenting our methodology, findings, and conclusions.

3. SOIL LEAD ASSESSMENT FINDINGS

In accordance with Caltrans electronic data submittal guidance, the boring locations, sample identifiers, and analytical results are presented on Excel spreadsheets (Appendix C). Per the work order, statistical analyses of the data were to have been performed on four separate sets: one for each of the three depths (15cm, 30cm, and 60cm), and all data. However, it was clear from initial inspection of the data, that the eastbound, westbound, and median data were, in fact, separate data sets. With approval from the Caltrans Project Manager, Ninyo & Moore performed additional statistical analyses for the eastbound, westbound, and median data sets. The statistical calculations are also presented by sample depth (Appendix D). A summary of statistical calculations is presented on Table 1. Laboratory analytical reports and chain-of-custody documentation are presented in Appendix E. Due to auger refusal in the center median, many of the 60cm samples were collected at 45cm or not collected at all. For the purposes of statistical analysis the 45cm samples were grouped with the 60cm samples.

It is our understanding that these findings will be used to assess the suitability of the soil for re-use within the Caltrans right-of-way. In accordance with Caltrans guidance for such data, each datum point was normalized using the natural logarithm, $\ln(x)$, and the means, standard deviations, and 80% and 95% upper confidence levels ($UCL_{.80}$ and $UCL_{.95}$) were calculated.

Ten percent of the samples (17) were randomly selected for pH analysis. The pH values ranged from 5.20 to 8.34, for the 17 samples.

One hundred and seventy samples were collected for this project. Ninety eight soil samples contained concentrations of total lead that exceeded 10 times the Title 22 STLC (50 mg/kg), but did not exceed the Title 22 TTLC (1,000 mg/kg); these samples were subsequently tested for soluble lead by the WET test using citric acid as the extractant. Fifty-one of these samples were equal to or greater than the Title 22 STLC (5 mg/ℓ), and were subsequently tested for soluble lead using de-ionized water as the extractant. The correlation between the soluble and total lead results varied, and generally correlation was poor, as shown on Table 1.

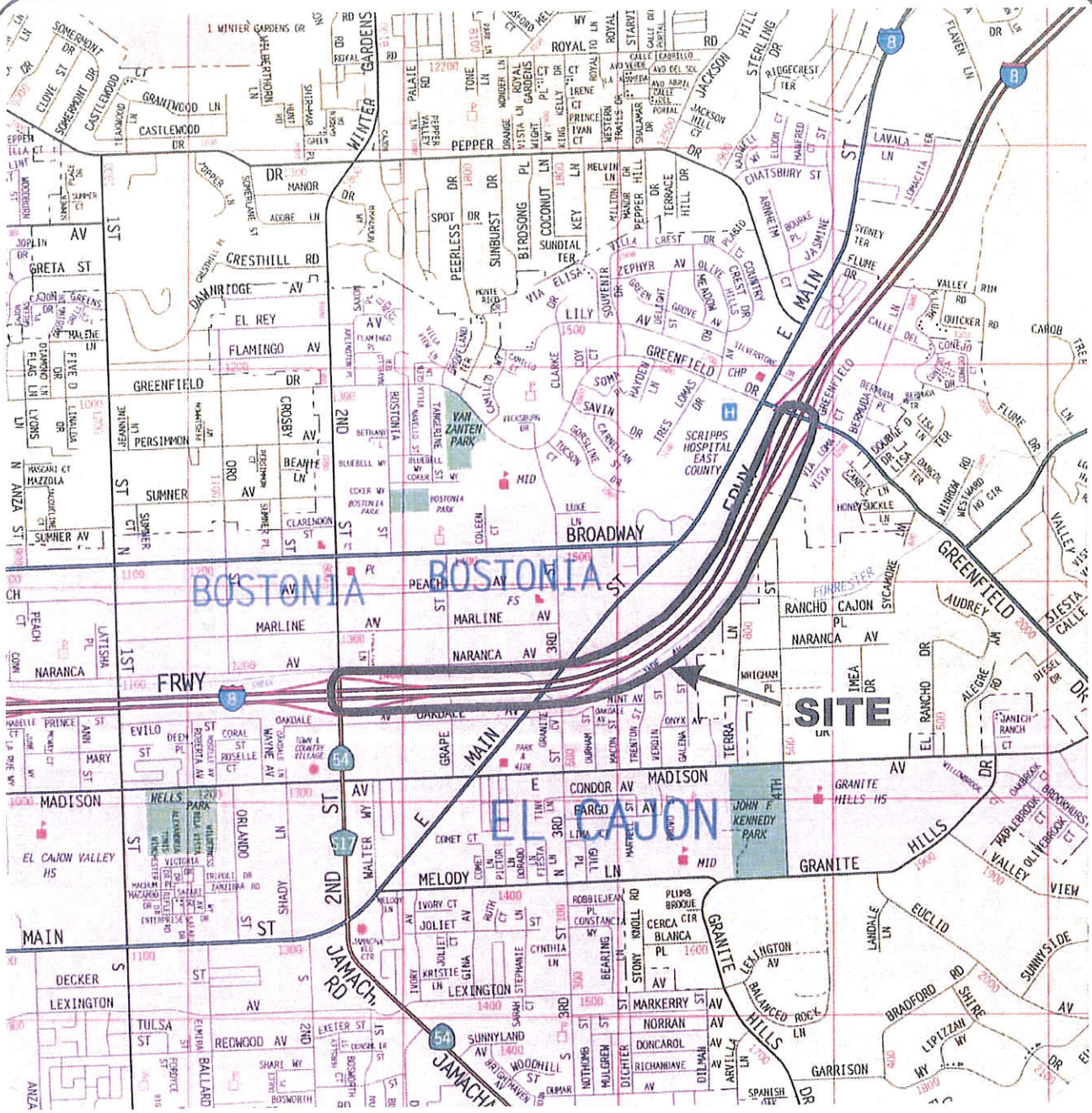
As shown on Table 1, soluble lead, rather than total lead, tends to be the limiting factor. The soluble lead action level using citric acid as the extractant is 5.0 mg/ℓ. The total lead action level is 350 mg/kg. In summary, the $UCL_{.95}$ of the mean concentration was greater than the 5.0 mg/ℓ soluble lead action level:

- 15cm, 30cm, and 60cm in the eastbound shoulder, and
- 15cm and 30cm in the westbound shoulder.

The $UCL_{.95}$ was less than both action levels for the median.

4. CONCLUSIONS

The California Environmental Protection Agency DTSC Variance 00-H-VAR-06 provides that Caltrans will "manage soil containing lead at concentrations such that it is considered a hazardous waste" (1,000 mg/kg total lead; 5 mg/ℓ soluble lead using the WET test) unless the following criteria are met:



REFERENCE: SAN DIEGO COUNTY THOMAS BROS. MAP, DATED 1999.

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Ninyo & Moore

SITE LOCATION MAP

INTERSTATE 8
2ND STREET TO GREENFIELD DRIVE
EL CAJON, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104330001	3/01	1

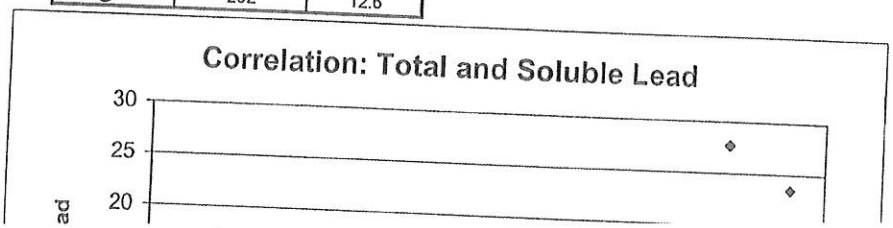
Interstate 8 (15 cm)

Sample ID	Total Lead (X) (mg/Kg)	Total Lead ln(X)
B-1 @ 15cm	67.4	4.21
B-2 @ 15cm	951	6.86
B-3 @ 15cm	355	5.87
B-4 @ 15cm	640	6.46
B-5 @ 15cm	1,060	6.97
B-6 @ 15cm	1,270	7.15
B-7 @ 15cm	526	6.27
B-8 @ 15cm	1,630	7.40
B-9 @ 15cm	162	5.09
B-10 @ 15cm	686	6.53
B-11 @ 15cm	182	5.20
B-12 @ 15cm	433	6.07
B-13 @ 15cm	822	6.71
B-14 @ 15cm	1,940	7.57
B-15 @ 15cm	3,920	8.27
B-16 @ 15cm	490	6.19
B-17 @ 15cm	88.7	4.49
B-18 @ 15cm	74.7	4.31
B-19 @ 15cm	1,210	7.10
B-20 @ 15cm	639	6.46
B-21 @ 15cm	16,000	9.68
B-22 @ 15cm	493	6.20
B-39 @ 15cm	68.2	4.22
B-40 @ 15cm	53.1	3.97
B-41 @ 15cm	35	3.56
B-42 @ 15cm	100	4.61
B-43 @ 15cm	86.1	4.46
B-44 @ 15cm	67.4	4.21
B-45 @ 15cm	232	5.45
B-46 @ 15cm	134	4.90
B-47 @ 15cm	224	5.41
B-48 @ 15cm	67.6	4.21
B-49 @ 15cm	108	4.68
B-50 @ 15cm	20.3	3.01
B-51 @ 15cm	152	5.02
B-52 @ 15cm	23.9	3.17
B-53 @ 15cm	24.3	3.19
B-54 @ 15cm	52.8	3.97
B-55 @ 15cm	5	1.61
B-56 @ 15cm	37.3	3.62
B-57 @ 15cm	23.1	3.14
B-58 @ 15cm	118	4.77
B-59 @ 15cm	36.8	3.61
B-23 @ 15cm	1,410	7.25
B-24 @ 15cm	690	6.54
B-25 @ 15cm	93.1	4.53
B-26 @ 15cm	609	6.41
B-27 @ 15cm	139	4.93
B-28 @ 15cm	27.6	3.32
B-29 @ 15cm	948	6.85
B-30 @ 15cm	438	6.08
B-31 @ 15cm	220	5.39

Sample ID	Total Lead (X) (mg/Kg)	Soluble Lead (X) (mg/L)
B-1 @ 15cm	67.4	2.3
B-2 @ 15cm	951	5.3
B-3 @ 15cm	355	6.77
B-4 @ 15cm	640	10.4
B-7 @ 15cm	526	4.7
B-9 @ 15cm	162	6.8
B-10 @ 15cm	686	8.3
B-11 @ 15cm	182	8.3
B-12 @ 15cm	433	2.5
B-13 @ 15cm	822	15.2
B-16 @ 15cm	490	5.3
B-17 @ 15cm	88.7	2.7
B-18 @ 15cm	74.7	9.3
B-20 @ 15cm	639	10.2
B-22 @ 15cm	493	7
B-39 @ 15cm	68.2	3.48
B-40 @ 15cm	53.1	2.9
B-42 @ 15cm	100	5.1
B-43 @ 15cm	86.1	5.7
B-44 @ 15cm	67.4	4.9
B-45 @ 15cm	232	10.7
B-46 @ 15cm	134	5
B-47 @ 15cm	224	12
B-48 @ 15cm	67.6	4.4
B-49 @ 15cm	108	3.9
B-51 @ 15cm	152	4.7
B-54 @ 15cm	52.8	3
B-58 @ 15cm	118	5.4
B-24 @ 15cm	690	10.8
B-25 @ 15cm	93.1	1.8
B-26 @ 15cm	609	5.8
B-27 @ 15cm	139	4.23
B-29 @ 15cm	948	23.5
B-30 @ 15cm	438	18.3
B-31 @ 15cm	220	8.58
B-32 @ 15cm	185	6.05
B-33 @ 15cm	295	16.1
B-34 @ 15cm	96.8	2.04
B-35 @ 15cm	57.1	2.83
B-36 @ 15cm	66.1	2.22
B-37 @ 15cm	854	27.7
B-38 @ 15cm	262	12.6

Total Lead Statistics	
Mean	706.8
Standard Error	276.5
Median	182
Mode	67.4
Standard Deviation	2,124.11
Sample Variance	4,511,853
Kurtosis	48.33
Skewness	6.71
Range	15,995
Minimum	5
Maximum	16,000
Sum	41,699
Count	59
Confidence Level(95.0%)	553.55
Confidence Level(80.0%)	358.48

	Total Lead	Soluble Lead
Means=	310.15	7.59
Std-Devs=	276.60	5.71
n=	42	42
slope=	30.10	0.0128
y-int=	81.69	3.6080
corr-coeff=	0.62	0.62



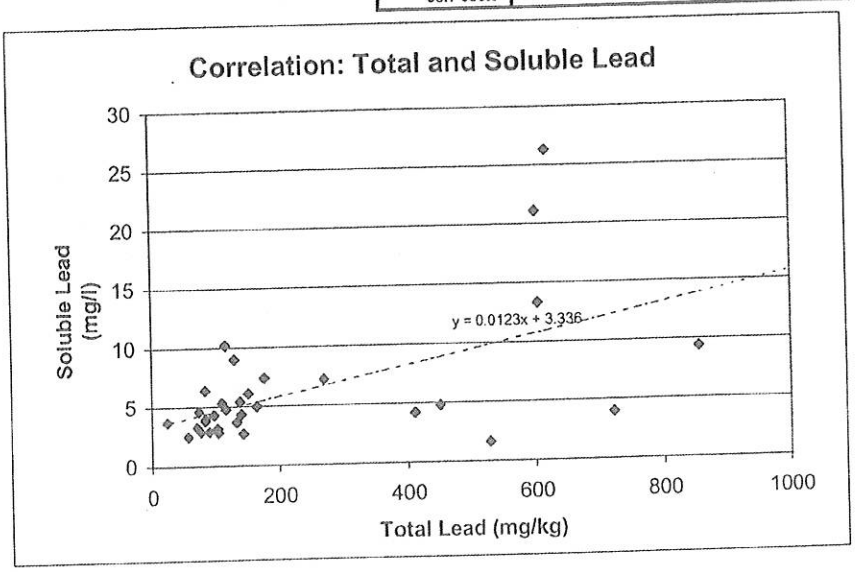
Interstate 8 (30 cm)

Sample ID	Total Lead (X) (mg/Kg)	Total Lead ln(X)
B-1 @ 30cm	34.3	3.54
B-2 @ 30cm	58.1	4.06
B-3 @ 30cm	85.5	4.45
B-4 @ 30cm	450	6.11
B-5 @ 30cm	271	5.60
B-6 @ 30cm	2,130	7.66
B-7 @ 30cm	140	4.94
B-8 @ 30cm	1,050	6.96
B-9 @ 30cm	166	5.11
B-10 @ 30cm	411	6.02
B-11 @ 30cm	92.1	4.52
B-12 @ 30cm	145	4.98
B-13 @ 30cm	722	6.58
B-14 @ 30cm	1,120	7.02
B-15 @ 30cm	118	4.77
B-16 @ 30cm	18.2	2.90
B-17 @ 30cm	153	5.03
B-18 @ 30cm	39.4	3.67
B-19 @ 30cm	135	4.91
B-20 @ 30cm	48.1	3.87
B-21 @ 30cm	5,130	8.54
B-22 @ 30cm	855	6.75
B-39 @ 30cm	34.4	3.54
B-40 @ 30cm	112	4.72
B-41 @ 30cm	34.4	3.54
B-42 @ 30cm	605	6.41
B-43 @ 30cm	132	4.88
B-44 @ 30cm	75.7	4.33
B-45 @ 30cm	85.7	4.45
B-46 @ 30cm	5	1.61
B-47 @ 30cm	99.5	4.60
B-48 @ 30cm	17.2	2.84
B-49 @ 30cm	13.8	2.62
B-50 @ 30cm	78.4	4.36
B-51 @ 30cm	24.3	3.19
B-52 @ 30cm	5	1.61
B-53 @ 30cm	528	6.27
B-54 @ 30cm	27.3	3.31
B-55 @ 30cm	13.9	2.63
B-56 @ 30cm	5	1.61
B-57 @ 30cm	13.9	2.63
B-58 @ 30cm	18.8	2.93
B-59 @ 30cm	5	1.61
B-23 @ 30cm	25.4	3.23
B-24 @ 30cm	118	4.77
B-25 @ 30cm	106	4.66
B-26 @ 30cm	27.2	3.30
B-27 @ 30cm	85.1	4.44
B-28 @ 30cm	5	1.61
B-29 @ 30cm	602	6.40
B-30 @ 30cm	142	4.96
B-31 @ 30cm	72.6	4.28
B-32 @ 30cm	5	1.61
B-33 @ 30cm	178	5.18
B-34 @ 30cm	105	4.65
B-35 @ 30cm	67.7	4.22
B-36 @ 30cm	25	3.22
B-37 @ 30cm	1,130	7.03
B-38 @ 30cm	619	6.43

Sample ID	Total Lead (X) (mg/Kg)	Soluble Lead (X) (mg/L)
B-2 @ 30cm	58.1	2.5
B-3 @ 30cm	85.5	6.4
B-4 @ 30cm	450	4.8
B-5 @ 30cm	271	7.2
B-7 @ 30cm	140	5.4
B-9 @ 30cm	166	5
B-10 @ 30cm	411	4.2
B-11 @ 30cm	92.1	2.9
B-12 @ 30cm	145	2.7
B-13 @ 30cm	722	4
B-15 @ 30cm	118	4.8
B-17 @ 30cm	153	6.1
B-19 @ 30cm	135	3.7
B-22 @ 30cm	855	9.4
B-40 @ 30cm	112	5.3
B-42 @ 30cm	605	13.3
B-43 @ 30cm	132	9
B-44 @ 30cm	75.7	4.6
B-45 @ 30cm	85.7	4
B-47 @ 30cm	99.5	4.3
B-50 @ 30cm	78.4	2.9
B-53 @ 30cm	528	1.6
B-24 @ 30cm	118	10.2
B-25 @ 30cm	106	2.8
B-27 @ 30cm	85.1	3.83
B-29 @ 30cm	602	21.1
B-30 @ 30cm	142	4.37
B-31 @ 30cm	72.6	3.28
B-33 @ 30cm	178	7.38
B-34 @ 30cm	105	3.15
B-35 @ 30cm	25	3.72
B-38 @ 30cm	619	26.3

Total Lead Statistics	
Mean	315.6
Standard Error	96.7
Median	85.7
Mode	5
Standard Deviation	743.0
Sample Variance	552,052
Kurtosis	31.32
Skewness	5.16
Range	5,125
Minimum	5
Maximum	5,130
Sum	18,619
Count	59
Confidence Level(95.0%)	193.63
Confidence Level(80.0%)	125.39

	Total Lead	Soluble Lead
Means=	236.58	6.26
Std-Devs=	227.16	5.26
n=	32	32
slope=	22.99	0.0123
y-int=	92.74	3.3360
corr-coeff=	0.53	0.53



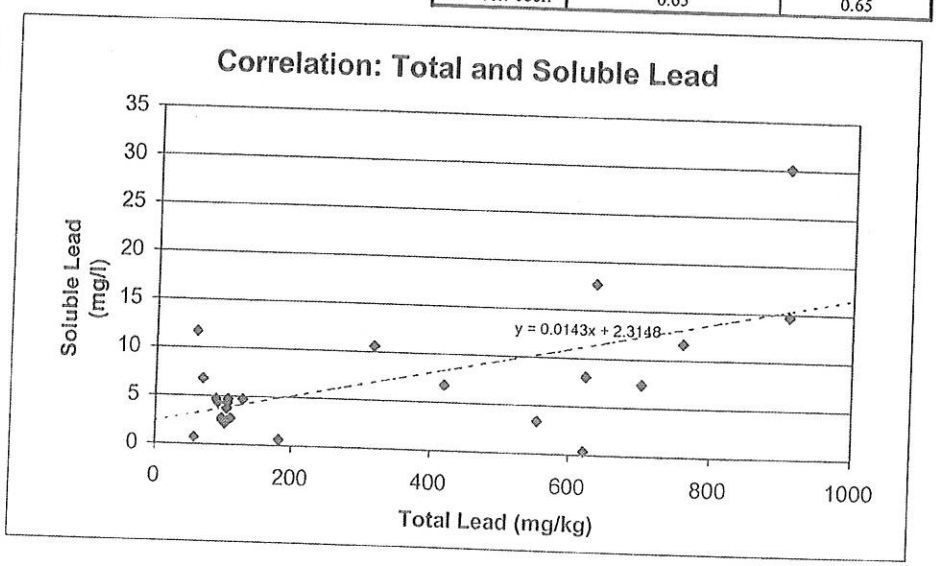
Interstate 8 (60 cm)

Sample ID	Total Lead (X) (mg/Kg)	Total Lead ln(X)
B-1 @ 60cm	24.6	3.20
B-2 @ 60cm	761	6.63
B-3 @ 60cm	99.1	4.60
B-4 @ 60cm	419	6.04
B-5 @ 60cm	18.7	2.93
B-6 @ 60cm	1,240	7.12
B-7 @ 60cm	108	4.68
B-8 @ 60cm	1,070	6.98
B-9 @ 60cm	32.4	3.48
B-10 @ 60cm	18	2.89
B-11 @ 60cm	704	6.56
B-12 @ 60cm	104	4.64
B-13 @ 60cm	623	6.43
B-14 @ 60cm	622	6.43
B-15 @ 60cm	2,190	7.69
B-16 @ 60cm	21.4	3.06
B-17 @ 60cm	909	6.81
B-18 @ 60cm	26.7	3.28
B-19 @ 60cm	99.5	4.60
B-20 @ 60cm	31.2	3.44
B-21 @ 60cm	3,900	8.27
B-22 @ 60cm	107	4.67
B-39 @ 60cm	60.7	4.11
B-40 @ 45cm	112	4.72
B-41 @ 45cm	43.1	3.76
B-43 @ 45cm	70.2	4.25
B-44 @ 45cm	129	4.86
B-45 @ 60cm	37.3	3.62
B-46 @ 60cm	5	1.61
B-47 @ 45cm	29.9	3.40
B-49 @ 45cm	5	1.61
B-51 @ 45cm	19.1	2.95
B-52 @ 45cm	5	1.61
B-54 @ 60cm	31.8	3.46
B-55 @ 45cm	10.3	2.33
B-56 @ 45cm	33.8	3.52
B-23 @ 60cm	31.3	3.44
B-24 @ 60cm	24	3.18
B-25 @ 60cm	13.6	2.61
B-26 @ 60cm	554	6.32
B-27 @ 60cm	5	1.61
B-28 @ 60cm	30.3	3.41
B-29 @ 60cm	906	6.81
B-30 @ 60cm	90.3	4.50
B-31 @ 60cm	40.9	3.71
B-32 @ 60cm	90.7	4.51
B-33 @ 60cm	318	5.76
B-34 @ 60cm	59.4	4.08
B-35 @ 60cm	182	5.20
B-36 @ 60cm	106	4.66
B-37 @ 60cm	93.2	4.53
B-38 @ 60cm	635	6.45

Sample ID	Total Lead (X) (mg/Kg)	Soluble Lead (X) (mg/L)
B-2 @ 60cm	761	11.7
B-3 @ 60cm	99.1	2.7
B-4 @ 60cm	419	6.8
B-7 @ 60cm	108	4.7
B-11 @ 60cm	704	7.4
B-12 @ 60cm	104	2.2
B-13 @ 60cm	623	8.1
B-14 @ 60cm	622	0.4
B-17 @ 60cm	909	14.7
B-19 @ 60cm	99.5	2.5
B-22 @ 60cm	107	4.3
B-39 @ 60cm	60.7	11.7
B-40 @ 45cm	112	2.7
B-43 @ 45cm	70.2	6.8
B-44 @ 45cm	129	4.7
B-26 @ 60cm	554	3.4
B-29 @ 60cm	906	30.1
B-30 @ 60cm	90.3	4.7
B-32 @ 60cm	90.7	4.58
B-33 @ 60cm	318	10.6
B-34 @ 60cm	59.4	0.71
B-35 @ 60cm	182	0.61
B-36 @ 60cm	106	3.73
B-37 @ 60cm	93.2	4.35
B-38 @ 60cm	635	17.7

Total Lead Statistics	
Mean	325.0
Standard Error	90.8
Median	80.3
Mode	5
Standard Deviation	654.7
Sample Variance	428,618
Kurtosis	18.07
Skewness	3.86
Range	3,895
Minimum	5
Maximum	3,900
Sum	16,901
Count	52
Confidence Level(95.0%)	182.27
Confidence Level(80.0%)	117.88

	Total Lead	Soluble Lead
Means=	318.48	6.88
Std-Devs=	296.67	6.55
n=	25	25
slope=	29.38	0.0143
y-int=	116.50	2.3148
corr-coeff=	0.65	0.65



May 20, 2015
Project No. 9061017

Mr. Mark Peabody
Project Manager
Kleinfelder, Inc.
550 West C Street, Suite 1200
San Diego, California 92101

Subject: Statistical Analysis of Lead Concentrations in Soil
Interstate 8, San Diego County
Caltrans D11 TO27, Kleinfelder Project No. 20155257.001A

Dear Mr. Peabody:

This technical memorandum summarizes the results of our statistical analysis of lead concentrations in soil reported by Kleinfelder from the project ADL survey. The data were provided in Microsoft Excel format.

For questions pertaining to this analysis, please contact the undersigned at 858.513.1469 or by email at sree@thebodhigroup.com.

Sincerely,
The Bodhi Group, Inc.

Sree Gopinath, P.E.
Principal Engineer

1. INTRODUCTION

The California Department of Transportation (Caltrans) is proposing to improve the east bound on-ramp at Interstate 8 (I-8) and Magnolia Avenue and the shoulder along I-8 near Los Coches Road (Project) in San Diego County (Figure 1).

Project construction will result in soil disturbance, excavation, and reuse of excavated soil. In the more urbanized highway corridors, shallow soil is typically contaminated with aerially-deposited lead (ADL) caused by historic emissions from vehicle exhausts. The lead concentrations in shallow soil may exceed State and Federal hazardous waste criteria or may be at concentrations that require special handling and placement.

The California Department of Toxic Substances Control (DTSC) issued a variance to Caltrans (Variance, No. V09HQSCD006) for the management of soil contaminated with ADL. The Variance requires the comparison of representative concentrations of lead (soluble and total) and pH with hazardous waste and other criteria for proper classification of soil.

Kleinfelder collected and analyzed shallow soil samples for lead from the proposed Project Site to classify the ADL soil type and evaluate criteria for reuse of soil excavated during Project construction. Based on the classification, soil could be managed for reuse within the Project or removed for disposal at an off-site in-State permitted facility.

2. OBJECTIVE

Determine representative concentrations of lead and pH in soil that will be co-excavated during Project construction. For co-excavated soil with sufficient data, representative concentrations will be evaluated using statistical methods. Co-excavated soil refers to soil that is excavated and managed as one stockpile distinct from soil in other stockpiles. Representative concentrations of each co-excavated soil is compared with Variance criteria for proper ADL soil type classification to determine reuse or proper disposal.

3. ANALYSIS

A total of twenty-four soil samples were collected from eight soil boring locations (not including field duplicates) from the Project Site (Figure 1). Three soil samples were collected from each soil boring at discrete depth intervals of 0.5, 1.5, and 2 feet below ground surface (bgs). The samples were analyzed for concentrations of total lead (Total) and soluble lead extracted and analyzed by the waste extraction test (WET). Five soil samples were analyzed for soil pH and lead by the toxicity characteristic leaching procedure (TCLP). Six soil samples were analyzed for soluble lead extracted with a modified WET using deionized water (WET-DI). Three field duplicates (FD) were also collected and analyzed for lead by one or more of the following: Total; WET; WET-DI; and TCLP as a Quality Assurance measure. Any uncertainty in the difference between the primary and FD sample results was biased toward protecting the environment and human health by selecting the higher concentration.

For each co-excavated soil unit with sufficient data for statistical analysis, parametric procedures were used to evaluate if the true mean concentrations were below the criteria specified in the Variance. That is, the null hypothesis states that the mean concentration is less than the Variance criterion for a false positive rate (α) of 0.05 and a false negative rate (β) of 0.20.

Nine primary soil samples and one FD were collected from three soil borings along I-8 near Los Coches Road and 15 soil primary samples and two FD were collected from five soil borings along the I-8 eastbound

on-ramp from Magnolia Avenue. Since the Los Coches and Magnolia Avenue sites are approximately five miles apart, soil excavated from these two locations are treated as separate stockpiles.

Since the true mean concentration is not known, a value that would not be exceeded 95 percent of the time (95 percent upper confidence limit of the mean, or 95 UCL) was calculated for the selected α and β values. Non-detect concentrations were treated with the Kaplan-Meier method.

3.1. I-8 and Magnolia Avenue All Depths

The table below summarizes the results of the statistical analyses.

Total Concentrations in milligrams per kilogram (mg/kg)								
Depth (ft)	Number of Samples	% of Non Detect	Min. value	Max. value	Mean	Median	Standard Deviation	95% UCL
0.5-2.0	15	0%	1.6	786	165.9	31.4	252.8	447.7

WET Concentrations in milligrams per liter (mg/L)								
Depth (ft)	Number of Samples	% of Non Detect	Min. value	Max. value	Mean	Median	Standard Deviation	95% UCL
0.5-2.0	15	0	0.017	45.4	8.6	1.5	13.7	23.8

TCLP Concentrations in mg/L								
Depth (ft)	Number of Samples	% of Non Detect	Min. value	Max. value	Mean	Median	Standard Deviation	95% UCL
0.5-2.0	15	0	0.16	1.3	0.9	1.1	0.5	1.1

Only one sample reported a detected WET-DI concentration of 0.53 mg/L in the six samples analyzed, indicating insufficient distinct values for meaningful statistical analysis. Since the maximum detected concentration of 0.53 mg/L is below the Variance WET-DI lead criterion of 1.5 mg/L, WET-DI lead concentrations would not change the ADL soil classification at the I-8/Magnolia Avenue Site.

The pH was measured in three samples and reported values ranging from 5.93 to 6.96; indicating that the pH concentrations would not change the ADL soil classification.

The statistically-derived representative values of TOTAL, WET, and TCLP lead concentrations (95 UCL) were compared with Variance criteria to evaluate soil classification. The resulting soil classification is "Y1", or hazardous waste, based on the WET lead concentrations. Soil with Y1 classification can only be used below 1-foot of clean soil or pavement and requires a Lead Compliance Plan for worker safety.

3.2. I-8 and Magnolia Avenue Categorized by Depth

The I-8 and Magnolia Avenue lead data set was further categorized by depth to determine if different depth horizons correspond to statistically distinct populations and Variance soil type.

Depth (ft)	Total (mg/kg)			WET (mg/L)			ADL Soil Type
	Mean	Maximum	95% UCL	Mean	Maximum	95% UCL	
0.5	318.9	786	644.6	15.6	45.4	34.1	Y1
1.5	123.3	508	409.9	6.5	27.2	23.6	Y1
2.0	55.5	264	127.6	3.8	17.1	9.3	Y1

The results indicate that the soil, regardless of depth within the top 24-inches, is type Y1 (hazardous), which has restrictions for reuse in the Project Site.

3.3. I-8 and Los Coches Road All Depths

The table below summarizes the results of the statistical analyses.

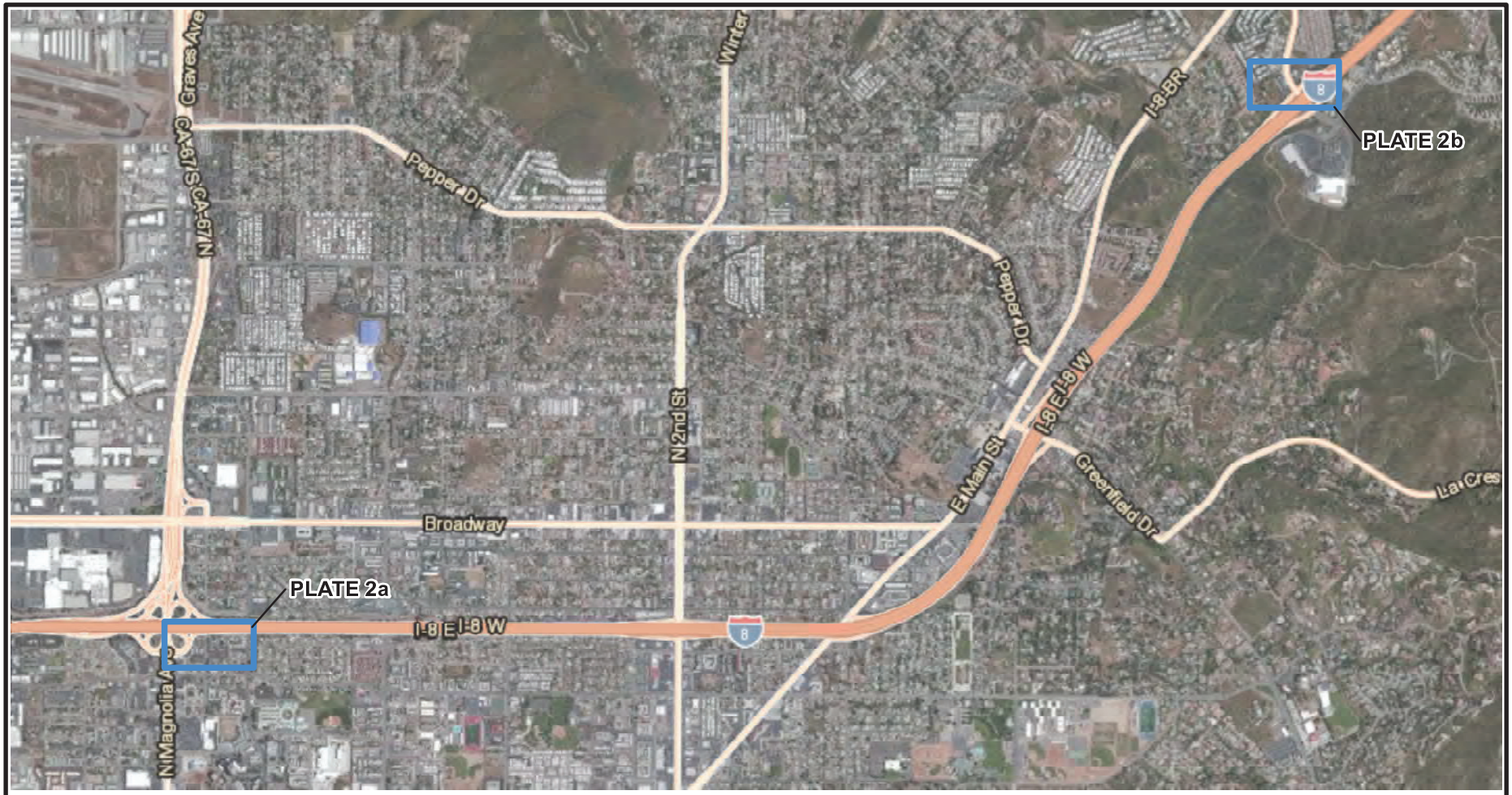
Total Concentrations in mg/kg								
Depth (ft)	Number of Samples	% of Non Detect	Min. value	Max. value	Mean	Median	Standard Deviation	95% UCL
0.5-2.0	9	0%	2.5	8.1	4.2	3	1.9	5.4

WET Concentrations in mg/L								
Depth (ft)	Number of Samples	% of Non Detect	Min. value	Max. value	Mean	Median	Standard Deviation	95% UCL
0.5-2.0	9	0	0.03	0.3	0.1	0.06	0.09	0.2

The pH was measured in two samples and reported values of 7.98 and 8.24; indicating that the pH concentrations would not change the ADL soil classification.

The statistically-derived representative values of TOTAL and WET lead concentrations (95 UCL) were compared with Variance criteria to evaluate soil classification. The resulting soil classification is "X", or non-hazardous. Soil with X classification can be used without restriction on the Project Site.

There are insufficient data values for statistically analyzing data sets by discrete depth intervals of 0.5, 1.5, and 2.0 feet. However, since the maximum total and WET lead concentration data values are well below the Variance threshold criteria; soil excavated from the top 2 feet at the I-8 and Los Coches Project Site would be of type "X" or non-hazardous.



Service Layer Credits: Esri Online Imagery Services, 2014

LEGEND

PLATE BOUNDARY

N

0 2,500 5,000 Feet

File: C:\Projects\Kleinfelder\Caltrans\TO27\Mapping\TO27_BoringLocations_Plate1.mxd

KLEINFELDER
Bright People. Right Solutions.

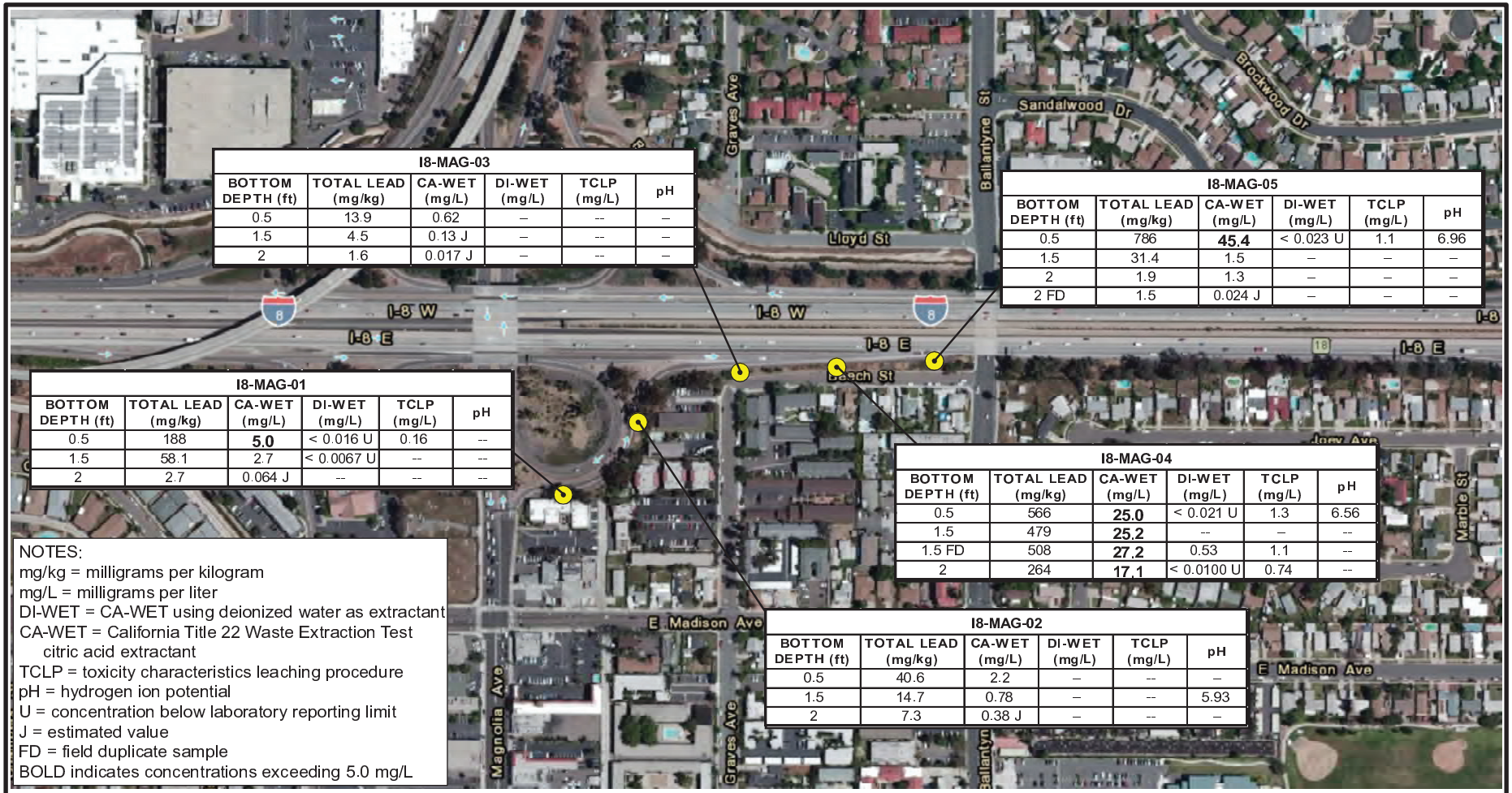
PROJECT NO: 20155257
DRAWN BY: E D GOFF
CHECKED BY: C NOLAND
DATE: MAY 2015

GeomorphIS

SITE LOCATION MAP

ADL Survey
I-8 at Magnolia Avenue and Los Coches Road
El Cajon, California
Caltrans EA 11-413501, Task Order 27

PLATE
1



I8-MAG-03

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	13.9	0.62	–	--	–
1.5	4.5	0.13 J	–	--	–
2	1.6	0.017 J	–	--	–

I8-MAG-05

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	786	**45.4**	< 0.023 U	1.1	6.96
1.5	31.4	1.5	–	–	–
2	1.9	1.3	–	–	–
2 FD	1.5	0.024 J	–	–	–

I8-MAG-01

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	188	**5.0**	< 0.016 U	0.16	--
1.5	58.1	2.7	< 0.0067 U	--	--
2	2.7	0.064 J	--	--	--

I8-MAG-04

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	566	**25.0**	< 0.021 U	1.3	6.56
1.5	479	**25.2**	--	–	--
1.5 FD	508	**27.2**	0.53	1.1	--
2	264	**17.1**	< 0.0100 U	0.74	--

I8-MAG-02

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	40.6	2.2	–	--	–
1.5	14.7	0.78	–	--	5.93
2	7.3	0.38 J	–	--	–

NOTES:
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
DI-WET = CA-WET using deionized water as extractant
CA-WET = California Title 22 Waste Extraction Test
citric acid extractant
TCLP = toxicity characteristics leaching procedure
pH = hydrogen ion potential
U = concentration below laboratory reporting limit
J = estimated value
FD = field duplicate sample
BOLD indicates concentrations exceeding 5.0 mg/L

Service Layer Credits: Esri Online Imagery Services, 2014

LEGEND

BORING LOCATION

N

0 300 600 Feet

File: C:\Projects\Kleinfelder\Caltrans\TO27\Mapping\TO27_Sampling_Plate2a.mxd

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO: 20155257
DRAWN BY: E D GOFF
CHECKED BY: C NOLAND
DATE: MAY 2015

GeomorphIS

BORING LOCATIONS

ADL Survey
I-8 at Magnolia Avenue and Los Coches Road
El Cajon, California
Caltrans EA 11-413501, Task Order 27

PLATE
2a

I8-LC-03

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	5.9	0.17 J	--	--	--
1.5	2.8	0.039 J	--	--	7.98
2	2.8	0.029 J	--	--	--

I8-LC-01

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	5.0	0.18 J	--	--	--
0.5 FD	8.1	0.29 J	--	--	--
1.5	3.0	0.055 J	--	--	8.24
2	2.6	0.039 J	--	--	--

I8-LC-02

BOTTOM DEPTH (ft)	TOTAL LEAD (mg/kg)	CA-WET (mg/L)	DI-WET (mg/L)	TCLP (mg/L)	pH
0.5	5.0	0.12 J	--	--	--
1.5	2.5	0.059 J	--	--	--
2	4.7	0.17 J	--	--	--

NOTES:
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
DI-WET = CA-WET using deionized water as extractant
CA-WET = California Title 22 Waste Extraction Test
citric acid extractant
TCLP = toxicity characteristics leaching procedure
pH = hydrogen ion potential
J = estimated value
FD = field duplicate sample

Service Layer Credits: Esri Online Imagery Services, 2014

LEGEND

BORING LOCATION

N

0 300 600 Feet

File: C:\Projects\Kleinfelder\Caltrans\TO27\Mapping\TO27_Sampling_Plate2b.mxd

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PROJECT NO: 20155257
DRAWN BY: E D GOFF
CHECKED BY: C NOLAND
DATE: MAY 2015

GeomorphIS

BORING LOCATIONS

ADL Survey
I-8 at Magnolia Avenue and Los Coches Road
El Cajon, California
Caltrans EA 11-413501, Task Order 27

PLATE
2b

From: Cheryl Brugman [mailto:CBrugman@padre.org]
Sent: Tuesday, February 24, 2015 5:22 PM
To: Dispenzieri, Mike V@DOT
Subject: RE: Water Resource Letter.

Mike,

Thank you for putting the existing water main on the plans and the note that Padre Dam stand by is needed. This is the main water line to the Eastern Service Area and safety is our concern.

Padre Dam will provide a construction meter to be used within our District boundaries per the rules and regulations. An $1,800.00 deposit will be required at the time. Padre Dam will set the meter at the fire hydrant nearest your project location. All related costs and information can be found on the PD website under About Us> Policies, Plans, Reports –Rules and Regulations. We usually can have the process complete within 48 hour notice.

Cheryl
Cheryl Brugman
Engineering Technician
Padre Dam Municipal Water District
Desk 619.258.4639
Web www.padredam.org

From: Dispenzieri, Mike V@DOT [mailto:mike.dispenzieri@dot.ca.gov]
Sent: Monday, February 23, 2015 1:09 PM
To: Cheryl Brugman
Subject: Water Resource Letter.

Cheryl,
I would only be using water from your district at Flinn Springs Road UC. It is my understanding that your district begins west of Lake Jennings Park Road correct? I will need approximately 1100 gallons of water for the upgrading of bridge end treatments and guardrail. I added a note in the utility plans mentioning that a Padre Dam representative should be there for work, additionally I will mention it to the construction engineer for the project. I am looking for something similar to the example letters attached. If you need anything else please let me know.

Mike Dispenzieri, P.E.
District 11 Traffic Project Development
4050 Taylor Street
San Diego, CA 92110 / MS 230
Office - (619) 688-3253

Helix Water District

Setting standards of excellence in public service

7811 University Avenue
La Mesa, CA 91942-0427

(619) 466-0585
FAX (619) 466-1823
www.hwd.com

March 5, 2015

Mike Dispenzieri
District 11 Traffic Project Development
4050 Taylor Street
San Diego, CA 92110

Re: Water Source Letter for CALTRANS Project on I-8 from Ballantyne Lane Undercrossing to 0.4 Mile East of East Victoria Drive Undercrossing

Dear Mr. Dispenzieri:

Helix Water District's current drought level (Level 2, see attached flyer) does not limit Helix Water District or have any mandatory water use restrictions on providing adequate water resources necessary to supply the duration of the project.

Please note that the Helix Water District/Padre Dam Municipal Water District boundary is located at Lake Jennings Park Road (see attached cover sheet indicating the boundary). Helix can only serve the required water within our boundaries. Caltrans' portion within Padre Dam's boundaries must be served by Padre Dam Municipal Water District.

If you have any questions, please contact me at 619-667-6273.

Sincerely,

Aneld Anub, P.E.
Associate Engineer

Attachments

C: Tim Ross, HWD

Drought LEVEL

1 ☐
2 ☑
3 ☐
4 ☐

Mandatory Water Restrictions

- Irrigate no more than 3 days per week (chosen by customer).
- Limit watering to irrigate no more than 10 minutes per station per day (unless using drip, rotating nozzles or rotors).
- Eliminate runoff from irrigation systems.
- Water between 6 p.m. and 10 a.m.
- Repair all leaks within 72 hours.
- Use recirculated water in water fountains and water features.
- Use a hose with positive shut-off nozzle when washing vehicles.
- Washing down of hardscapes is prohibited (unless required for public health and safety).

Helix Water District

www.hwd.com

INDEX OF PLANS

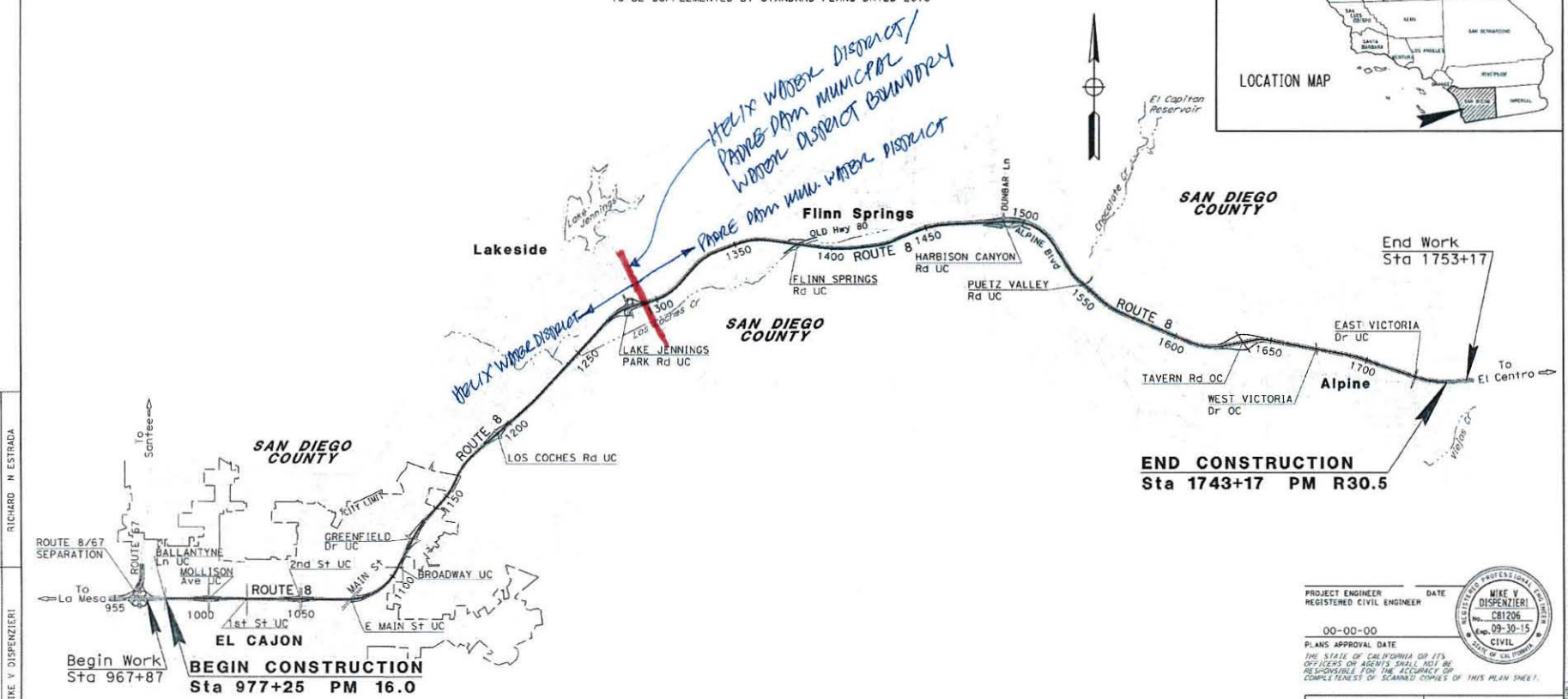
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SAN DIEGO COUNTY
IN AND NEAR EL CAJON FROM
BALLANTYNE LANE UNDERCROSSING TO 0.4 MILE
EAST OF EAST VICTORIA DRIVE UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	8	16.0/R30.5	1	XXX

LOCATION MAP



NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

PROJECT ENGINEER / REGISTERED CIVIL ENGINEER — DATE
MIKE V DISPENZIERI, No. C81206, Exp. 09-30-15, CIVIL
00-00-00
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	11-415404
PROJECT ID	1113000013

DESIGN ENGINEER: MIKE V DISPENZIERI
PROJECT MANAGER: RICHARD N ESTRADA
LAST REVISION 09-16-14
DATE PLOTTED => 12-JAN-2015
TIME PLOTTED => 13:17

BORDER LAST REVISED 9/30/2012 | CALTRANS WEB SITE IS: HTTP://WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => e136648 | DGN FILE => 1113000013ab001_GEO.dgn | UNIT 2771 | PROJECT NUMBER & PHASE 1113000013 1