

September 6, 2010

Mr. Arturo Adlawan
Management Specialist / Senior Design Engineer
Monterey County: Department of Public Works
168 West Alisal Street, 2nd Floor
Salinas, CA 93901

Subject: **Aerial Lead Study**
State Route 68 and Corral De Tierra Road Intersection
Laguna Seca, California
PSI Proposal 575-193

Dear Mr. Adlawan:

Professional Service Industries, Inc. (PSI) has been contracted by Monterey County to complete an aerial lead study for the subject site. The following is a description of the soil sampling procedures, analytical results, and conclusions.

PROJECT UNDERSTANDING

Based on information provided by Monterey County, including a scaled site plan, the site is at the intersection of State Route 68 and Corral De Tierra Road in Laguna Seca, Monterey County, California. Based on a conversation with Mr. Keith Hallsten of Wood Rodgers Inc., an aerially deposited lead (ADL) survey was conducted by Geocon Consultants, Inc. (Geocon) in 2007 (Attachment A). The Geocon report was written prior to Monterey County being under the requirements of the Caltrans ADL Variance. Therefore, additional soil sampling for performance of a Waste Extraction Test using de-ionized water (WET-DI) on soil samples collected is required. PSI understands that the work performed was required to be conducted in the vicinity of Geocon borings B6, B8, B12, B14, and B16.

PSI understands that the purpose of this project is to collect soil samples and provide supplemental recommendations from the original Geocon recommendations, if warranted, based on the WET-DI analytical results and the Caltrans ADL variance. The recommendations this report will be used as part of the bid package for performing widening of the State Route 68 and Corral De Tierra Road intersection.

PRE-FIELD ACTIVITIES

Prior to sampling activities, PSI representative Mr. Ezekiel Robles met Mr. Jonathan Pasqua of Monterey County Public Works to review the scope of work for the project and to familiarize himself with the Subject site. Additionally, PSI personnel marked the

proposed drilling locations with white paint and contacted Underground Service Alert a minimum of 48-hours prior to beginning work to facilitate the location of any buried utilities.

A site-specific Health and Safety Plan (HSP) was also developed in compliance with 29 CFR 1910.120. The HSP was designed to address the potential hazardous materials that could be encountered during field activities at the site and to minimize exposure of on-site personnel to potentially hazardous materials and unsafe working conditions.

SOIL BORINGS

On August 5, 2010, six (6) soil borings (B-1 through B-6) were advanced at the subject site. The boring locations and their relation to the Geocon borings are presented on Figure 2. Soil samples were collected primarily from borings on the north side of State Route 68 with the exception of boring B-1, which was located along the east side of Corral de Tierra Road, south of Highway 68. Soil borings were advanced by PSI personnel using a hand-auger. Soil samples were collected from ground surface to one foot below ground surface (bgs) from each boring.

The soil samples were collected in new, stainless steel sleeves. Immediately after collection, each sample sleeve was sealed at both ends with Teflon tape and plastic caps and labeled with project information, sample location and time of collection. Following soil sample collection, the samples were logged on a chain-of-custody (COC) record and stored in a chilled ice chest for transport to a State of California-certified environmental laboratory. All transportation and handling of the samples followed chain-of-custody protocol.

Soil encountered during drilling consisted primarily of silty sand. Groundwater was not encountered in any of the soil borings. Following completion of the borings, they were backfilled with soil cuttings.

LABORATORY ANALYSIS PROGRAM & RESULTS

The soil samples collected during this investigation were submitted to SunStar Laboratories, Inc. of Lake Forest, California, a DHS-ELAP-certified environmental laboratory. All of the soil samples were analyzed for soluble lead using the Waste Extraction Test using deionized water (WET-DI) according to EPA Method 6010B/SPLP. A summary of the analytical results for soluble lead in soil samples is presented in Table 1 and a copy of the analytical report is included as Attachment B.

- The WET-DI soluble lead results ranged from not detected at or above the laboratory detection limit to 1.2 milligrams per liter (mg/L).



LABORATORY ANALYSIS RESULTS - DISCUSSION

This section will discuss the results of the Geocon sampling program conducted in 2007 and the results of the PSI sampling program conducted in 2010.

Geocon Investigation – 2007

Geocon conducted an ADL study at the Subject Property in 2007. The Geocon analytical results indicated the presence of lead in the soil with total lead concentrations ranging from not detected (less than 5 milligrams per kilogram (mg/kg)) to 260 mg/kg. The results of the soil analyses were compared to California Code of Regulations Title 22 List of Inorganic, Persistent, and Bioaccumulative Toxic Substances and their soluble threshold limit concentrations (STLC) and total threshold limit concentrations (TTLC) values. None of the soil samples had a total lead concentration greater than the TTLC. Therefore, based on the total lead content, the soil represented by these samples would not be classified as hazardous by the State of California upon excavation and classification as a waste material.

Total lead concentrations were also compared to the State of California screening criteria of ten times its STLC. Ten soil samples had a total lead concentration greater than the screening criteria of ten times the STLC, but below the TTLC. These soil samples were re-analyzed for soluble lead using a waste extraction test (WET). The soluble lead concentration after the WET for eight of these samples was greater than the STLC. Based on the soluble lead concentration, the soil represented by these samples would be classified as hazardous by the State of California upon excavation and classification as a waste material,

Additionally, six soil samples were also analyzed according to the Federal toxicity characteristic leaching procedure (TCLP). The soluble lead concentration after the TCLP for these samples was less than the STLC. Therefore the soil represented by these samples would not be classified as a Resource Conservation and Recovery Act (RCRA) waste.

Geocon completed a statistical evaluation of the analytical data and concluded that although individual samples were above hazardous waste criteria, the 90% UCL predicted soluble (WET) lead concentration was below the lead STLC of 5.0 mg/L. Therefore, excavated soil could be reused onsite as non-hazardous fill. Geocon did recommend that at least one foot of imported fill be placed on top of excavated soil to minimize the potential for future exposure.

PSI Investigation – 2010

As the Geocon investigation was conducted prior to the Monterey County being under the requirements of the Caltrans ADL Variance, PSI was contracted by Monterey



County to perform a WET-DI on soil samples from the project corridor to complete the evaluation of the soil in regards to the Caltrans Variance.

The California Department of Toxic Substances Control (DTSC), pursuant to Health and Safety Code, section 25143, granted a variance to the State of California Department of Transportation (Caltrans) for the use and reuse of lead-impacted soil associated with highway construction projects. The variance allows Caltrans to reuse soil onsite that has soluble or total lead concentrations greater than State of California hazardous waste criteria. PSI has included the Aerially Deposited Lead Soil Management table (ADLSM Table) in Attachment C. PSI understands that this project will be conducted under the guidelines of the Caltrans Variance.

PSI evaluated the Geocon and PSI lead concentrations with respect to the criteria set forth in the ADLSM Table. The results of the PSI soil sampling for soluble lead after a WET-DI indicated that all of the soil represented by these borings would fall on the ADLSM table under the soil type Y1. Y1 indicates that the Caltrans Variance does apply and all soil from the area represented by these samples can be left in place with a minimum of one foot of soil placed as cover. The remainder of the soil at the project site does not have restrictions.

CONCLUSIONS

Based on the PSI and Geocon results, soil represented by Geocon/PSI borings B6/B-1, B14/B-4, and B16/B-3 can be left on site, as long as there is minimum of one foot of soil placed as cover. No restrictions are in place for the remainder of the soil. PSI understands that additional imported fill will be required for this project. However, if excess soil is generated during construction and requires off hauling, there may be restrictions associated with disposal locations.

If you have any questions regarding please do not hesitate to call me at (510) 434-9200.

PROFESSIONAL SERVICE INDUSTRIES, INC.



Brand Burfield
Project Geologist

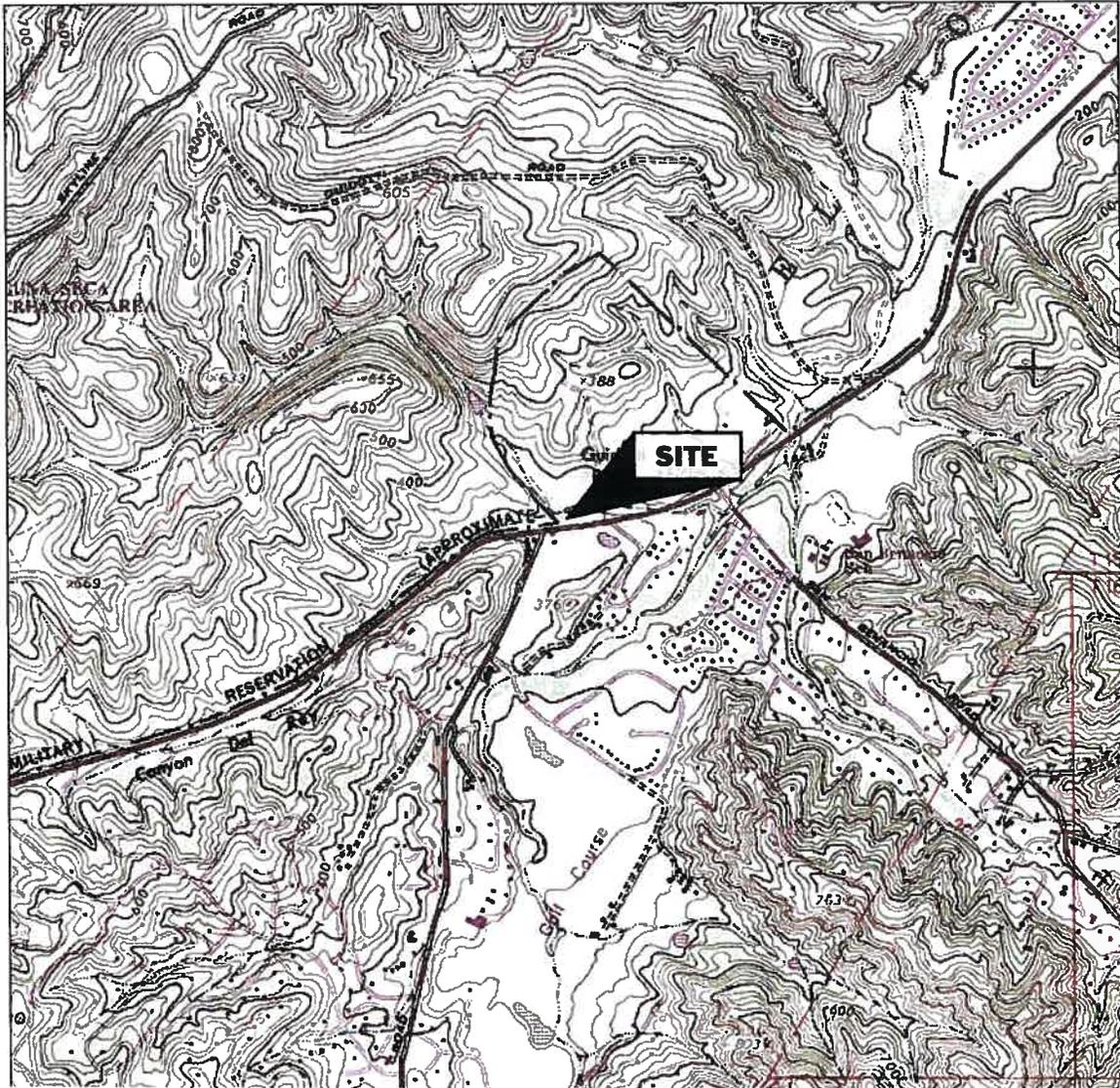


Frank R. Poss, REA
Principal Consultant

Attachments: Figure 1 –Site Location Map
 Figure 2 –Site Plan and Boring Location Map
 Table 1 – Summary of Soil Analytical Reports - Lead
 Attachment A – Geocon Consultants Inc., ADL Report
 Attachment B - Laboratory Analytical Reports and COC
 Attachment C – Caltrans Variance Table



FIGURES



REFERENCE:

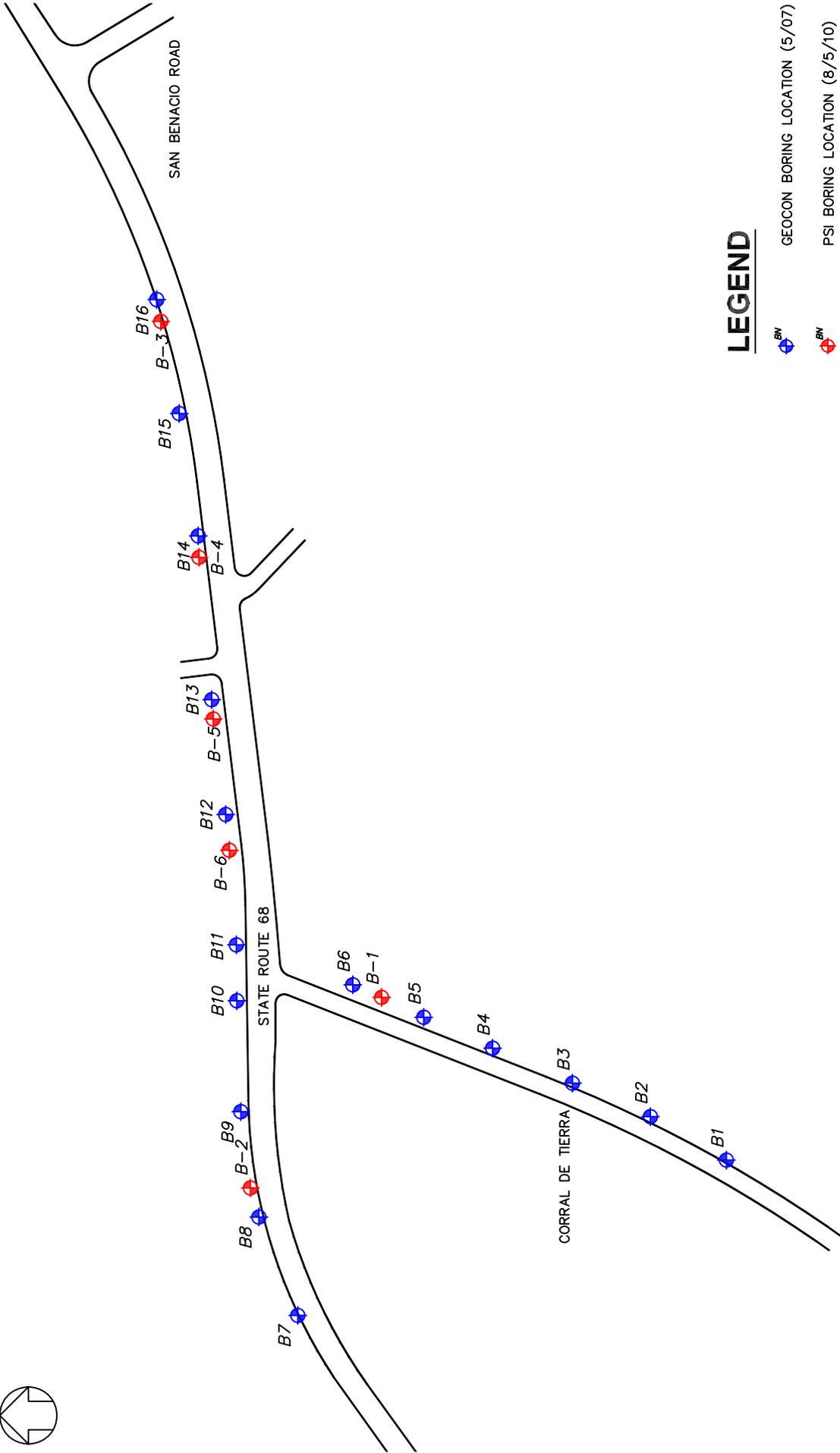
U.S.G.S. SPRECKLES CALIFORNIA, 7.5 MINUTE SERIES TOPOGRAPHIC MAP, DATED 1981, (PHOTO-REVISED 1984).



Information To Build On
Engineering • Consulting • Testing

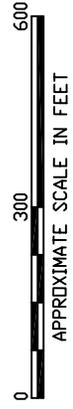
4703 Tidewater Avenue, Suite B
Oakland, California 94601
(510) 434-9200

Project Name: MONTEREY COUNTY ADL SURVEY ROUTE 88/CORRAL DE TIERRA ROAD, MONTEREY COUNTY		Drawn By: B.B.	Date: 6/10	File No.: 204-1	Figure No.: 1
Title: SITE LOCATION MAP		Approved By: E.R.	Project No.: 575-204		



LEGEND

-  GEOCON BORING LOCATION (5/07)
-  PSI BORING LOCATION (8/5/10)



NOTES:

1. Drawing scale is approximate. All locations are approximate and must be field verified.

	Environmental Services 4703 Tidewater Avenue, Suite B Oakland, CA 94601 Tel (510) 434-9200 Fax (510) 434-7676		Route 68/Corral de Tierra Road Monterey County, California	DRAWN BY: M.G.	DATE: 9/2/10	DRAWING NO.: 2
	psi <i>Information To Build On</i> Engineering • Consulting • Testing		Site Plan	PROJECT MGR.: F. Poss	PROJECT NO.: 575-193	

TABLE

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS: LEAD
Highway 68 and Corral De Tierra Road
Monterey County, California

BORING	DEPTH (feet)	SOLUBLE LEAD (mg/l)
B-1	0.0 -1.0	0.053
B-2	0.0 -1.0	<0.05
B-3	0.0 -1.0	1.2
B-4	0.0 -1.0	0.48
B-5	0.0 -1.0	<0.05
B-6	0.0 -1.0	0.21

Notes:

Soluble Lead Concentrations are presented in milligrams per liter (mg/l)

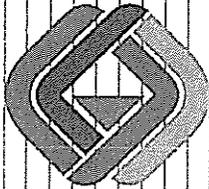
Analytical results are from performing a Waste Extraction Test using Deionized Water

ATTACHMENT - GEOCON CONSULTANTS INC., ADL REPORT



AERIALY DEPOSITED LEAD
SITE INVESTIGATION REPORT

STATE ROUTE 68
CORRAL DE TIERRA ROAD
INTERSECTION IMPROVEMENTS
MONTEREY COUNTY, CALIFORNIA



GEOCON

CONSULTANTS, INC

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR:

WOOD RODGERS, INC.
3301 C ST., BLDG 100-B
SACRAMENTO, CALIFORNIA

JULY 2007



Project No. E8399-06-01
July 10, 2007

Mr. Keith Hallsten
Wood Rodgers, Inc.
3301 C St., Bldg 100-B
Sacramento, CA 95816

Subject: AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT
STATE ROUTE 68 / CORRAL DE TIERRA ROAD
INTERSECTION IMPROVEMENTS PROJECT
MONTEREY COUNTY, CALIFORNIA

Dear Mr. Hallsten:

Geocon has performed environmental engineering services at the project site in accordance with Geocon Proposal No. LE-06-019. The project site consists of consists of the westbound shoulder (i.e., north side) of State Route (SR) 68 from approximately 250 meters west of the Corral de Tierra Road intersection to approximately 450 meters east of the intersection, and the northbound shoulder (i.e., east side) of Corral de Tierra Road from SR68 to approximately 320 meters south of SR 68, as shown on the Vicinity Map, Figure 1.

The accompanying report summarizes the services performed including the advancement of hand-auger boreholes, limited soil sampling, and laboratory testing.

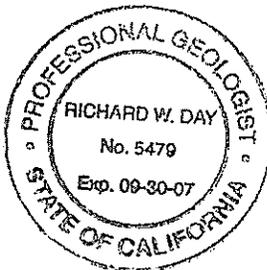
The contents of this report reflect the views of Geocon Consultants, Inc., who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

If there are any questions concerning the contents of this report, or if Geocon may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON CONSULTANTS, INC.

Richard W. Day, CEG, CHG
Regional Manager



RWD:rjk

(6) Addressee

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1. Boring Coordinates
2. Summary of Lead and pH Results
3. Summary of Statistical Analysis

APPENDICES

- A. Laboratory Analytical Reports and Chain-of-Custody Documentation
- B. Statistical Results

SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Soil Investigation Report was prepared for the State Route (SR) 68/Corral de Tierra Intersection Improvements project in Monterey County, California. This report documents the site investigation for aerially deposited lead (ADL) along the westbound shoulder of State Route (SR) 68 and the northbound shoulder of Corral de Tierra Road.

1.1 Site Description

The site consists of the westbound shoulder (i.e., north side) of SR68 from approximately 250 meters west of the Corral de Tierra Road intersection to approximately 450 meters east of the intersection, and the northbound shoulder (i.e., east side) of Corral de Tierra Road from SR68 to approximately 320 meters south of SR 68. The site location is depicted on the Vicinity Map, Figure 1.

The proposed road-widening and construction activities will require the disturbance of soil that may be impacted with ADL primarily due to historic leaded fuel emissions from automobile exhausts. Accordingly, an ADL survey of the Site will be performed to provide data regarding the presence of ADL-contaminated soil within the project boundaries. The site location is shown on the Vicinity Map, Figure 1.

1.2 Purpose

The purpose of the services performed was to evaluate whether impact due to aerially deposited lead exists in the surface and near surface soil within the project boundaries. The information obtained from this investigation will be used to inform the construction contractor of the presence of lead-impacted soil within the project boundaries for health, safety, and waste management purposes.

2.0 BACKGROUND

2.1 Potential Lead Impacts

Testing by Caltrans has indicated that ADL exists along major freeway routes due to past emissions from vehicles powered by leaded gasoline. Caltrans reports that total lead concentrations in soil adjacent to the freeways have typically ranged between 50 and 3,000 milligrams per kilogram (mg/kg). The ADL is generally limited to the upper 0.6 meter of soil material within the unpaved median and shoulder areas.

2.2 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as California hazardous for handling and disposal purposes are contained in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as Resource, Conservation, and Recovery Act (RCRA) hazardous are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

3.0 SCOPE OF SERVICES

The following scope of services was performed:

3.1 Pre-Field Activities

Geocon retained the services of a California-licensed laboratory, Advanced Technology Laboratories (ATL), to perform the soil analyses.

Geocon prepared the *Aerially Deposited Lead Site Investigation Workplan*, dated May 21, 2007 for Caltrans review. Caltrans accepted the workplan on May 21, 2007, and requested that an additional soil sample be collected between 0.5 and 1 foot below ground surface at each boring location.

3.2 Field Activities

The field investigation was performed on May 22, 2007, under the responsible charge of Richard Day. Mr. Day is a Professional Geologist in the State of California. The following field activities were performed during soil sampling effort:

- Completed 16 hand auger borings (B1 through B16).
- Collected soil samples for lead and pH analysis.
- Transported samples to ATL for laboratory analysis.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Soil samples were collected from 16 borings (B1 through B16) at the locations shown on the Site Plan, Figure 2. Soil borings were advanced to a maximum depth of approximately 0.75 meters (2.5 feet) below ground surface (bgs) using hand auger methods. Samples were collected at approximate depths of 0 to 0.15 meter (0 to 0.5 foot), 0.15 to 0.3 meter (0.5 to 1 foot), 0.3 to 0.45 meter (1 to 1.5 feet), and 0.6 to 0.75 meter (2 to 2.5 feet). A total of 64 soil samples were collected. Completed soil boreholes were filled to surface with soil cuttings. Groundwater was not encountered during the advancement of the boreholes.

Geocon provided quality assurance/quality control (QA/QC) procedures during the field activities. These procedures included washing the sampling equipment with an Alconox[®] solution followed by a double rinse with deionized water. Decontamination water was disposed to the ground surface in a manner not to create runoff, away from drain inlets or potential water bodies.

Sample containers were sealed, labeled, and transported to ATL using standard chain-of-custody documentation.

4.2 Laboratory Analyses

The laboratory testing performed is summarized below:

- All samples (64 total) were analyzed for total lead using EPA Test Method 6010.
- A total of seven soil samples (randomly selected by the laboratory) were analyzed for pH using EPA Test Method 9045.
- A total of 10 soil samples that exhibited total lead concentrations greater than or equal to 50 mg/kg (i.e., greater than ten times the lead STLC of 5 mg/l) were analyzed for soluble (WET) lead.
- A total of six soil samples were further analyzed for soluble lead using the Toxicity Characteristic Leaching Procedure (TCLP).

Reproductions of the laboratory reports and chain-of-custody documentation are presented as Appendix A.

4.3 Laboratory QA/QC

QA/QC procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix; whichever was more frequent, with spike made at ten times the detection limit or at the analyte level.

5.0 INVESTIGATIVE RESULTS

5.1 Laboratory Test Results

A summary of the analytical laboratory test results for lead and pH is presented as Table 2. The laboratory analyses indicated the following:

- Soil samples analyzed for total lead exhibited concentrations ranging from less than the laboratory reporting limit of 5.0 mg/kg (<5.0 mg/kg) to 260 mg/kg.
- Soil samples analyzed for soluble (WET) lead exhibited concentrations ranging from 0.5 mg/l to 23 mg/l.
- Soluble (TCLP) lead was not detected above the laboratory reporting limit of 5 mg/l.
- Soil pH values ranged from 5.6 to 8.3.

5.2 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling area. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring*, by Richard Gilbert; in an EPA *Technology Support Center Issue* document entitled, *The Lognormal Distribution in Environmental Applications*, by Ashok Singh et. al., dated December 1997; and in a book entitled *An Introduction to the Bootstrap*, by Bradley Efron and Robert J. Tibshirani.

5.2.1 Total Lead Distribution

The presence of non-detects and/or low concentrations in total lead data sets can strongly skew sample data towards low values. In these cases, the data are often lognormally distributed or nonparametric and classical statistical methods do not work properly since they assume that the data exhibit an underlying normal distribution. Consequently, it is necessary to apply the appropriate method when determining the UCLs on the arithmetic total lead means.

5.2.2 Calculating the UCLs for the Mean

The 90% and 95% upper confidence limits (UCLs) of the true mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the arithmetic mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from the site. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease and the UCLs move closer to the true mean.

Bootstrap techniques used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap*. The bootstrap results are included as Appendix B. For those samples in which total lead was not detected, a value equal to one-half of the detection limit was used in the UCL calculations.

The calculated UCLs are summarized in the below:

Borings B1 to B16

Sample Interval	90% UCL (mg/kg)	95% UCL (mg/kg)
Surface to 0.15 meter (0 to 0.5 ft)	50.1	55.0
0.15 to 0.3 meter (0.5 to 1 ft)	61.8	67.4
0.3 to 0.45 meter (1 to 1.5 ft)	55.8	60.5
0.6 to 0.9 meter (2 to 2.5 ft)	8.9	9.6

Statistical results are included as Appendix B.

5.3 Correlation of Total and Soluble Lead

Total and corresponding soluble (WET) lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of soluble lead (WET) concentrations based on the representative and UCLs concentrations calculated above.

To estimate the degree of interrelation between total and corresponding soluble (WET) lead values (x and y , respectively), the *correlation coefficient* [r] is used. The correlation coefficient is a ratio that ranges from +1 to -1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all.

The *correlation coefficient* was calculated for 9 (x, y) data points (i.e., soil samples analyzed for both total lead [x] and soluble [WET] lead [y]) and equaled 0.883. A *correlation coefficient* greater than or equal to 0.8 is an acceptable indicator that a correlation exists. To achieve an acceptable correlation, the data point from sample B8-1 (160, 0.5) was eliminated from the regression analysis.

Since the *correlation coefficient* indicates that a linear relationship exists between total and soluble (WET) lead concentrations, it is possible to compute the line of dependence, or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y -intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0816(x)$, where x represents total lead concentrations and y represents predicted soluble (WET) lead concentrations.

This equation was used to estimate the expected soluble (WET) lead concentrations based on the UCLs calculated in Section 5.2. Regression analysis results and a scatter plot depicting the nine (x, y) data points along with the regression line are included as a portion of Appendix B.

6.0 CONCLUSIONS

6.1 Aerially Deposited Lead

The following table summarizes the predicted soluble (WET) lead concentrations and the waste classifications for excavated soil based on the calculated total lead UCLs and the relationship between total and soluble (WET) lead at the site. The soluble (WET) lead calculations for all sample intervals are summarized on Table 3.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 0.15 meter (0 to 0.5 ft)	50	4.1	55	Non-hazardous
<i>Underlying soil (0.15 to 0.75 meter)</i>	<i>46</i>	<i>3.7</i>	<i>50</i>	<i>Non-hazardous</i>

Note: 90% UCL applicable for waste classification; 95% UCL applicable for risk assessment

Based on the above table, soil generated from all excavation scenarios would not be classified as a California hazardous waste since the 90% UCL-predicted soluble (WET) lead concentration is less than the lead STLC of 5.0 mg/l. Consequently, excavated soil can be reused onsite as non-hazardous fill with respect to lead content.

Geocon understands that additional imported fill material will be necessary to complete the project. We recommend that at least one foot of imported fill be placed on top of soil excavated from the site to minimize the potential for future exposure to lead in soil.

6.2 Worker Protection

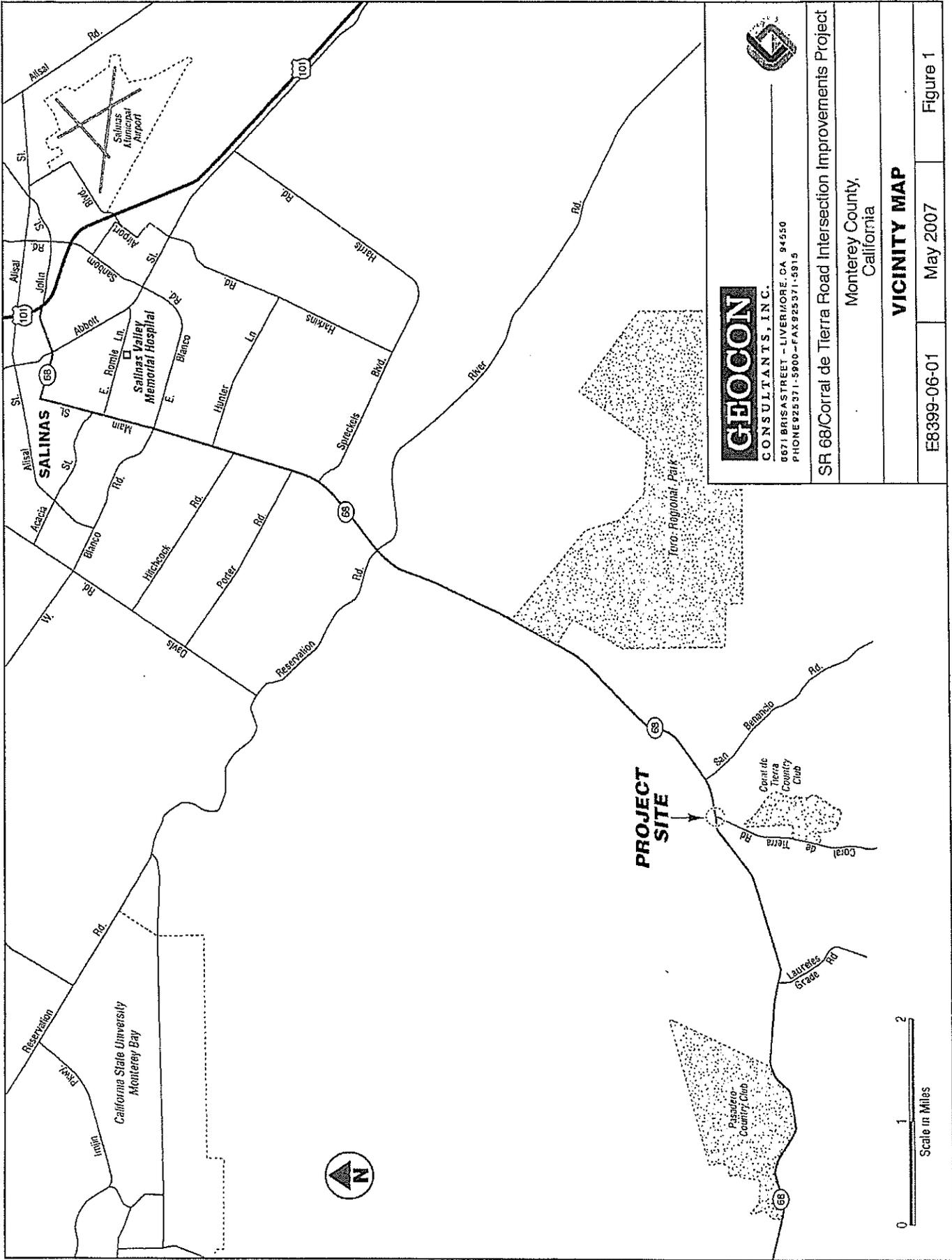
Per Caltrans requirements, contractor(s) should prepare a project-specific Lead Compliance Plan to prevent or minimize worker exposure to lead impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of lead impacted soil.

7.0 REPORT LIMITATIONS

This report has been prepared exclusively for Wood Rodgers, Inc. The information contained herein is only valid as of the date of the field sampling, and will require an update to reflect additional information obtained.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.



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 8671 BRISAS STREET - LIVERMORE, CA 94550
 PHONE 925 371-5900 - FAX 925 371-5915



SR 66/Corral de Tierra Road Intersection Improvements Project

Monterey County,
 California

VICINITY MAP

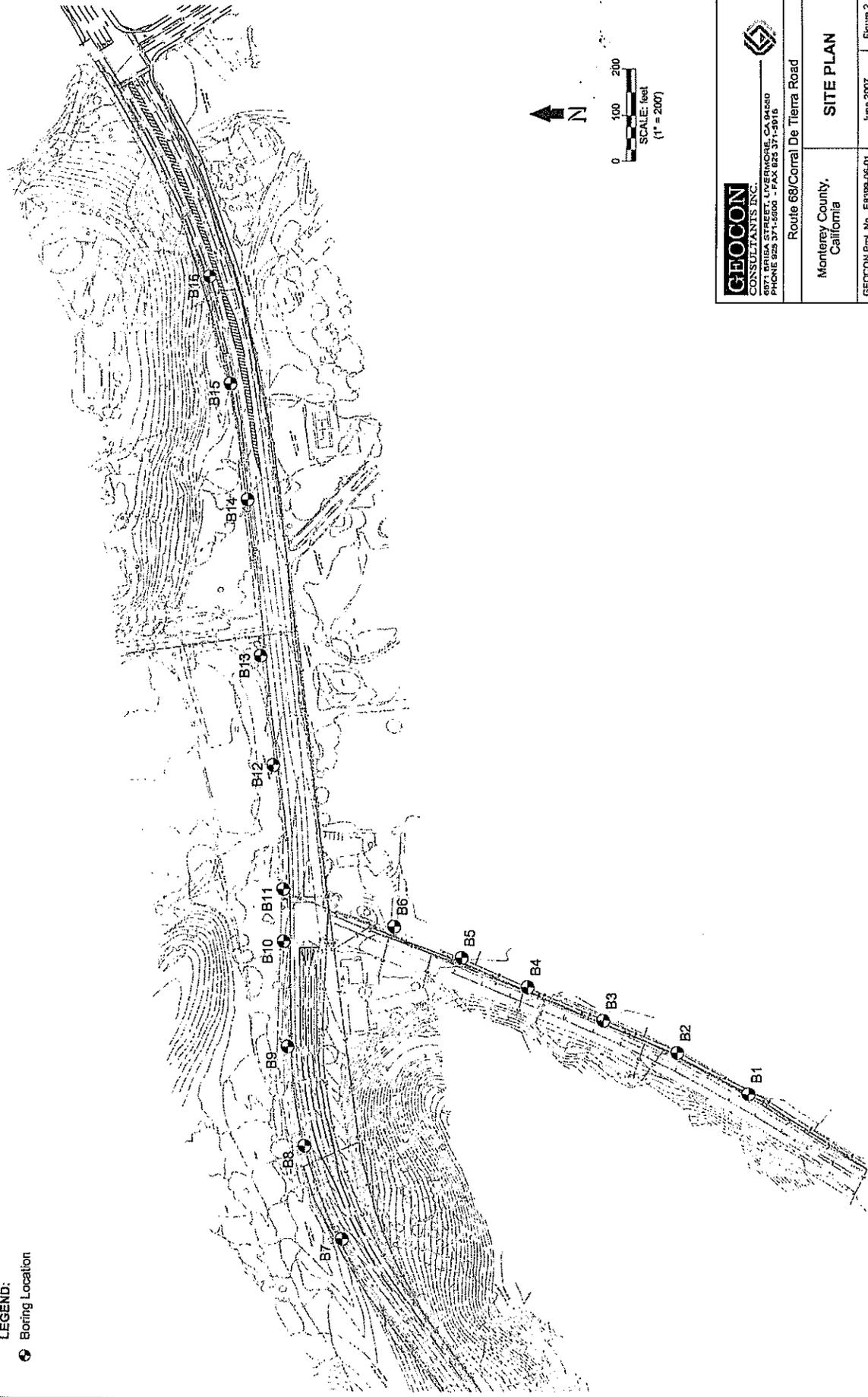
E8399-06-01

May 2007

Figure 1



LEGEND:
 Boring Location



GEOCON
 CONSULTANTS INC.

8971 TERESA STREET, LIVERMORE, CA 94550
 PHONE 925 371-6599 - FAX 925 371-5918



Route 68/Corral De Tierra Road

Monterey County,
 California

SITE PLAN

GEOCON Proj. No. E83393-06-01

June 2007

Figure 2

TABLE 1
BORING COORDINATES
SR68/Corral de Tierra
Monterey County, California

Boring	Northing	Easting
B1	2,104,127.240	5,760,659.477
B2	2,104,281.495	5,760,748.566
B3	2,104,440.767	5,760,818.409
B4	2,104,605.187	5,760,891.226
B5	2,104,748.694	5,760,954.708
B6	2,104,895.056	5,761,022.898
B7	2,105,004.484	5,760,339.840
B8	2,105,086.988	5,760,543.681
B9	2,105,125.157	5,760,759.576
B10	2,105,134.863	5,760,990.099
B11	2,105,136.416	5,761,104.434
B12	2,105,159.532	5,761,378.695
B13	2,105,188.141	5,761,621.537
B14	2,105,217.838	5,761,965.949
B15	2,105,257.831	5,762,218.751
B16	2,105,305.069	5,762,456.209

Coordinates in NAD83, Zone 4, feet

TABLE 2
SUMMARY OF LEAD AND pH RESULTS
SR68/Corral de Tierra
Monterey County, California

Sample ID	Sample Depth (m)	Sample Depth (ft)	Total Lead (mg/kg)	WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B1-0	0	0	14	---	---	---
B1-0.5	0.15	0.5	33	---	---	---
B1-1	0.3	1	5.8	---	---	---
B1-2	0.6	2	5.6	---	---	---
B2-0	0	0	6.7	---	---	---
B2-0.5	0.15	0.5	15	---	---	---
B2-1	0.3	1	5.6	---	---	8.3
B2-2	0.6	2	5.9	---	---	---
B3-0	0	0	<5.0	---	---	---
B3-0.5	0.15	0.5	16	---	---	---
B3-1	0.3	1	6.2	---	---	---
B3-2	0.6	2	<5.0	---	---	---
B4-0	0	0	18	---	---	---
B4-0.5	0.15	0.5	16	---	---	---
B4-1	0.3	1	8.8	---	---	---
B4-2	0.6	2	<5.0	---	---	---
B5-0	0	0	13	---	---	6.2
B5-0.5	0.15	0.5	<5.0	---	---	---
B5-1	0.3	1	20	---	---	---
B5-2	0.6	2	<5.0	---	---	---
B6-0	0	0	75	6.8	---	---
B6-0.5	0.15	0.5	100	7.8	<5.0	---
B6-1	0.3	1	91	9.0	---	---
B6-2	0.6	2	<5.0	---	---	---
B7-0	0	0	<5.0	---	---	---
B7-0.5	0.15	0.5	<5.0	---	---	---
B7-1	0.3	1	<5.0	---	---	---
B7-2	0.6	2	<5.0	---	---	---
B8-0	0	0	9.8	---	---	---
B8-0.5	0.15	0.5	<5.0	---	---	8.0
B8-1	0.3	1	160	0.5	---	---
B8-2	0.6	2	5.6	---	---	---
B9-0	0	0	<5.0	---	---	---
B9-0.5	0.15	0.5	<5.0	---	---	---
B9-1	0.3	1	<5.0	---	---	---
B9-2	0.6	2	<5.0	---	---	---

TABLE 2
SUMMARY OF LEAD AND pH RESULTS
SR68/Corral de Tierra
Monterey County, California

Sample ID	Sample Depth (m)	Sample Depth (ft)	Total Lead (mg/kg)	WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B10-0	0	0	7.6	---	---	---
B10-0.5	0.15	0.5	7.2	---	---	---
B10-1	0.3	1	5.4	---	---	7.2
B10-2	0.6	2	6.5	---	---	---
B11-0	0	0	13	---	---	---
B11-0.5	0.15	0.5	6.0	---	---	---
B11-1	0.3	1	6.4	---	---	---
B11-2	0.6	2	21	---	---	5.6
B12-0	0	0	23	---	---	---
B12-0.5	0.15	0.5	71	5.0	---	---
B12-1	0.3	1	39	---	---	---
B12-2	0.6	2	28	---	---	---
B13-0	0	0	33	---	---	---
B13-0.5	0.15	0.5	5.0	---	---	---
B13-1	0.3	1	5.1	---	---	7.0
B13-2	0.6	2	<5.0	---	---	---
B14-0	0	0	<5.0	---	---	---
B14-0.5	0.15	0.5	130	14	<5.0	---
B14-1	0.3	1	130	10	<5.0	---
B14-2	0.6	2	5.6	---	---	---
B15-0	0	0	<5.0	---	---	---
B15-0.5	0.15	0.5	10	---	---	---
B15-1	0.3	1	36	---	---	---
B15-2	0.6	2	5.7	---	---	---
B16-0	0	0	260	16	<5.0	6.2
B16-0.5	0.15	0.5	240	23	<5.0	---
B16-1	0.3	1	110	9.6	<5.0	---
B16-2	0.6	2	5.3	---	---	---

Notes:

- WET = Waste Extraction Test using citric acid as the extraction fluid
- mg/kg = milligrams per kilogram
- mg/l = milligrams per Liter
- < = Analyte was not detected above the stated laboratory reporting limit
- = Not Analyzed

TABLE 3
SUMMARY OF STATISTICAL ANALYSIS
SR68/Corral de Tierra
Monterey County, California

B1 to B16

TOTAL LEAD UCLs

	Total Lead (mg/kg)	
	90% UCL	95% UCL
0 to 0.15 meter (0 to 0.5 ft)	50.1	55.0
0.15 to 0.3 meter (0.5 to 1 ft)	61.8	67.4
0.3 to 0.45 meter (1 to 1.5 ft)	55.8	60.5
0.6 to 0.75 meter (2 to 2.5 ft)	8.9	9.6

EXCAVATION SCENARIOS

Excavation Depth	90% UCL		95% UCL	
	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)	Total Lead (mg/kg)	Soluble (WET) Lead* (mg/l)
0 to 0.15 meter (0 to 0.5 ft)	50	4.1	55	4.5
<i>Underlying Soil (0.15 to 0.75 meter)</i>	46	3.7	50	4.0
0 to 0.3 meter (0 to 1 ft)	56	4.6	61	5.0
<i>Underlying Soil (0.3 to 0.75 meter)</i>	40	3.3	44	3.6
0 to 0.45 meter (0 to 1.5 ft)	56	4.6	61	5.0
<i>Underlying Soil (0.45 to 0.75 meter)</i>	32	2.6	35	2.9
0 to 0.6 meter (0 to 2 ft)	56	4.6	61	5.0
<i>Underlying Soil (0.6 to 0.75 meter)</i>	9	0.7	10	0.8
0 to 0.75 meter (0 to 2.5 ft)	47	3.8	51	4.1

Notes:

UCL = Upper Confidence Level (90% UCL is applicable for waste classification; 95% UCL is applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = Soluble (WET) lead concentrations are predicted using slope of regression line,
where y = predicted soluble (WET) lead and x = total lead.

Regression Line Slope: $y = 0.0816 x$

ATTACHMENT B - LABORATORY ANALYTICAL REPORTS AND COC





25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

18 August 2010

Frank Poss
PSI -- Oakland
4703 Tidewater Ave Ste B
Oakland, CA 94601
RE: Monterey Co. Hwy 68 ADL

Enclosed are the results of analyses for samples received by the laboratory on 08/10/10 09:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

John Shepler
Laboratory Director



25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

PSI -- Oakland
4703 Tidewater Ave Ste B
Oakland CA, 94601

Project: Monterey Co. Hwy 68 ADL
Project Number: 575-193
Project Manager: Frank Poss

Reported:
08/18/10 16:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-1-0-1	T000824-01	Soil	08/05/10 17:33	08/10/10 09:05
B-2-0-1	T000824-02	Soil	08/05/10 17:51	08/10/10 09:05
B-3-0-1	T000824-03	Soil	08/05/10 18:16	08/10/10 09:05
B-4-0-1	T000824-04	Soil	08/05/10 18:28	08/10/10 09:05
B-5-0-1	T000824-05	Soil	08/05/10 18:41	08/10/10 09:05
B-6-0-1	T000824-06	Soil	08/05/10 18:54	08/10/10 09:05

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director



25712 Commercentre Drive
 Lake Forest, California 92630
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 949.297.5027 Fax

PSI -- Oakland 4703 Tidewater Ave Ste B Oakland CA, 94601	Project: Monterey Co. Hwy 68 ADL Project Number: 575-193 Project Manager: Frank Poss	Reported: 08/18/10 16:29
---	--	------------------------------------

B-1:0-1
T000824-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

SunStar Laboratories, Inc.

SPLP Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	0.053	0.050	mg/l	1	0081808	08/11/10	08/18/10	EPA 6010B/SPLP	

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PSI -- Oakland 4703 Tidewater Ave Ste B Oakland CA, 94601	Project: Monterey Co. Hwy 68 ADL Project Number: 575-193 Project Manager: Frank Poss	Reported: 08/18/10 16:29
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B-2:0-1
T000824-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

SPLP Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	ND	0.050	mg/l	1	0081808	08/11/10	08/18/10	EPA 6010B/SPLP	

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B-3:0-1
T000824-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

SPLP Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	1.2	0.050	mg/l	1	0081808	08/11/10	08/18/10	EPA 6010B/SPLP	

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PSI -- Oakland 4703 Tidewater Ave Ste B Oakland CA, 94601	Project: Monterey Co. Hwy 68 ADL Project Number: 575-193 Project Manager: Frank Poss	Reported: 08/18/10 16:29
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B-4:0-1
T000824-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

SPLP Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	0.48	0.050	mg/l	1	0081808	08/11/10	08/18/10	EPA 6010B/SPLP	

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PSI -- Oakland 4703 Tidewater Ave Ste B Oakland CA, 94601	Project: Monterey Co. Hwy 68 ADL Project Number: 575-193 Project Manager: Frank Poss	Reported: 08/18/10 16:29
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B-5:0-1
T000824-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

SPLP Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	ND	0.050	mg/l	1	0081808	08/11/10	08/18/10	EPA 6010B/SPLP	

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PSI -- Oakland 4703 Tidewater Ave Ste B Oakland CA, 94601	Project: Monterey Co. Hwy 68 ADL Project Number: 575-193 Project Manager: Frank Poss	Reported: 08/18/10 16:29
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B-6:0-1
T000824-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

SunStar Laboratories, Inc.

SPLP Metals by 6000/7000 Series Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	0.21	0.050	mg/l	1	0081808	08/11/10	08/18/10	EPA 6010B/SPLP	

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PSI -- Oakland 4703 Tidewater Ave Ste B Oakland CA, 94601	Project: Monterey Co. Hwy 68 ADL Project Number: 575-193 Project Manager: Frank Poss	Reported: 08/18/10 16:29
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SPLP Metals by 6000/7000 Series Methods - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0081808 - EPA 3010A										
Blank (0081808-BLK1) Prepared: 08/11/10 Analyzed: 08/18/10										
Lead	ND	0.050	mg/l							
LCS (0081808-BS1) Prepared: 08/11/10 Analyzed: 08/18/10										
Lead	0.446	0.050	mg/l	0.500		89.2	65-135			
Matrix Spike (0081808-MS1) Source: T000824-01 Prepared: 08/11/10 Analyzed: 08/18/10										
Lead	0.505	0.050	mg/l	0.500	0.0531	90.4	65-135			
Matrix Spike Dup (0081808-MSD1) Source: T000824-01 Prepared: 08/11/10 Analyzed: 08/18/10										
Lead	0.521	0.050	mg/l	0.500	0.0531	93.6	65-135	3.12	30	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

John Shepler, Laboratory Director

PSI -- Oakland
4703 Tidewater Ave Ste B
Oakland CA, 94601

Project: Monterey Co. Hwy 68 ADL
Project Number: 575-193
Project Manager: Frank Poss

Reported:
08/18/10 16:29

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



John Shepler, Laboratory Director

ATTACHMENT C - CALTRANS VARIANCE TABLE



AERIALLY DEPOSITED LEAD SOIL MANAGEMENT

SOLUBLE LEAD (mg/l)		TOTAL LEAD (mg/kg)	SOIL TYPE	HANDLING
CALIFORNIA TESTING				
STLC <5.0	TTLC <1000		X	Non-hazardous Waste. Notify and require Lead Compliance Plan for worker safety.
	1000 - 1411 and DI WET < 1.5 mg/l		Y1	Hazardous Waste. Variance applies - cover with minimum 1 foot of clean soil.*
	1411 - 3397 and DI WET < 150 mg/l		Y2	Hazardous Waste. Variance applies - cover with pavement structure.*
	1000 - 3397 but Surplus		Z2	Hazardous Waste - Surplus. Dispose at Class 1 disposal site.
STLC >5.0	> 3397 or 1000 - 3397 & DI WET > 150 mg/l		Z2	Hazardous Waste - not reusable under Variance. Dispose at Class 1 disposal site.
	TTLC < 1411 and DI WET < 1.5 mg/l		Y1	Hazardous Waste. Variance applies - cover with minimum of 1 foot of clean soil.*
	1411 - 3397 and DI WET < 150 mg/l		Y2	Hazardous Waste. Variance applies - cover with pavement structure.*
	< 3397 and DI WET < 150 mg/l but Surplus		Z2	Hazardous Waste - Surplus. Dispose at Class 1 disposal site.
	> 3397 or DI WET > 150 mg/l		Z2	Hazardous Waste - not reusable under Variance. Dispose at Class 1 disposal site.
FEDERAL TESTING				
TCLP > 5.0 mg/l	N/A		Z3	RCRA Hazardous Waste Dispose at Class 1 disposal site as a RCRA waste regardless of TTLC and STLC results.

*Note: For hazardous waste levels of lead - if pH is less than 5.5 soil must be placed under a pavement structure. If pH is less than 5.0 variance can not be used and the soil must be disposed as Z-2 material.