

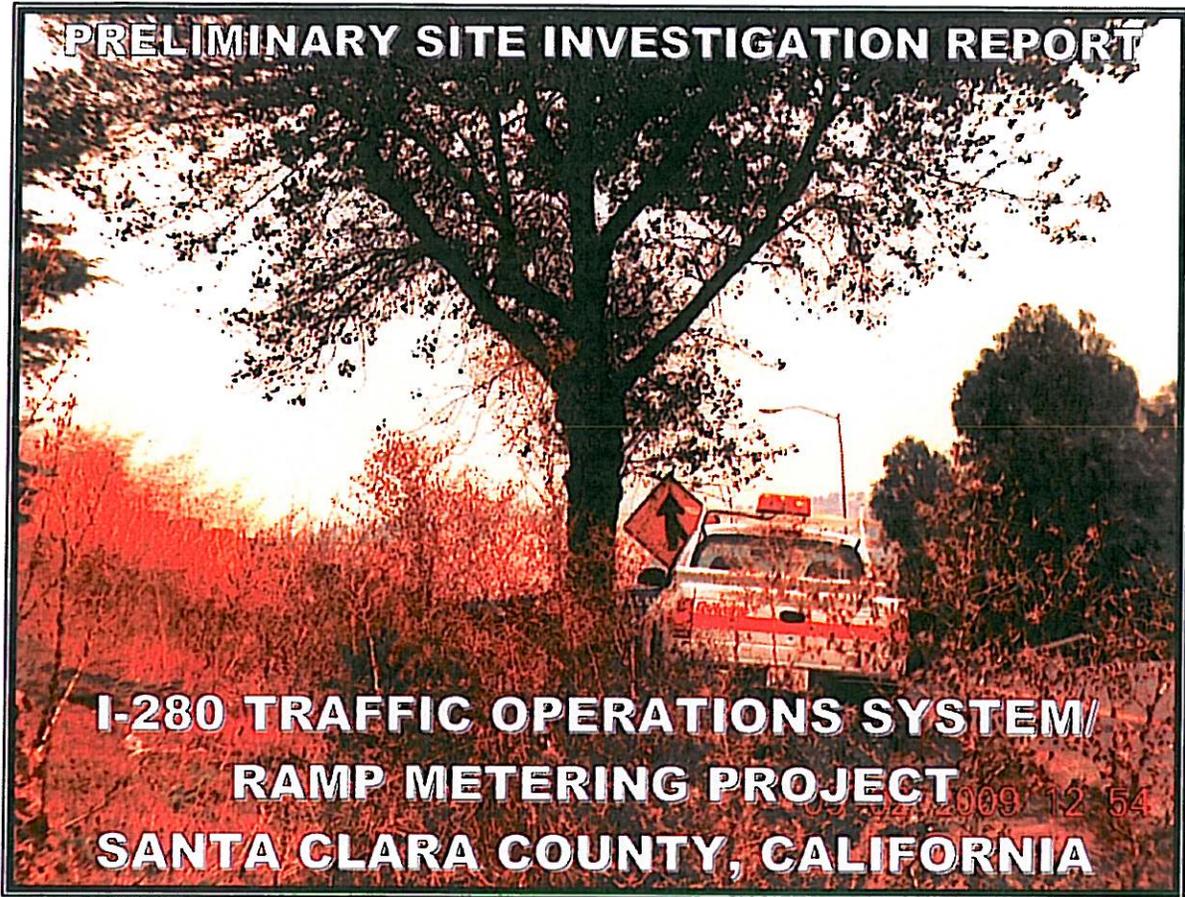
FOR CONTRACT NO.: 04-151304

INFORMATION HANDOUT

MATERIALS INFORMATION

EXCERPT OF PRELIMINARY SITE INVESTIGATION REPORT

ROUTE: 04-SCI-280-R1.0/L5.0



PREPARED FOR:
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GEOCON PROJECT NO. E8435-06-38
CALTRANS EAS 04-151301 AND 04-150341

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6.0 CONCLUSIONS

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. We conservatively used reported maximum total lead concentrations to evaluate onsite reuse and offsite disposal.

6.1 Lead

6.1.1 Bird Avenue Borings

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the maximum total lead concentrations and maximum-predicted WET soluble concentrations for data collected at the Site. Weighted averages are calculated by using the total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total lead calculations are summarized in Table 5a.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 1.0 ft	300	14.4	Hazardous
<i>Underlying soil (1.0 to 3.0 ft)</i>	83	4.0	<i>Non-Hazardous</i>
0 to 3.0 ft	155	7.5	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data in the above table, if excavated separately and generated for offsite disposal, soil from the surface to a depth of 1.0 ft would be classified as a California hazardous waste since the maximum-predicted WET soluble lead concentration is greater than the lead STLC of 5.0 mg/l. Underlying soil (i.e., deeper than 1 ft) would be classified as non-hazardous. If soil from the surface to a depth of 3.0 feet were excavated as a whole and generated for offsite disposal, it would be classified as California hazardous waste since the maximum-predicted WET soluble lead concentration exceeds the STLC.

Based on the TCLP soluble lead results excavated soil would not be considered a RCRA hazardous waste.

Based on the DI-WET soluble lead results, excavated soil may be reused onsite (as Caltrans Type Y1) under the DTSC Variance if it is covered with at least one foot of non-hazardous soil or a pavement structure.

6.1.2 Eleventh Street Borings

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the maximum total lead concentrations and maximum-predicted WET soluble concentrations for data collected at the Site. Weighted averages are calculated by using the total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total lead calculations are summarized in Table 5b.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 1.5 ft	480	23.1	Hazardous
<i>Underlying soil (1.5 to 3.0 ft)</i>	37	1.8	<i>Non-Hazardous</i>
0 to 3.0 ft	259	12.4	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data in the above table, if excavated separately and generated for offsite disposal, soil from the surface to a depth of 1.5 ft would be classified as a California hazardous waste since the maximum-predicted WET soluble lead concentration is greater than the lead STLC of 5.0 mg/l. Underlying soil (i.e., deeper than 1.5 ft) would be classified as non-hazardous. If soil from the surface to a depth of 3.0 feet were excavated as a whole and generated for offsite disposal, it would be classified as California hazardous waste since the maximum-predicted WET soluble lead concentration exceeds the STLC.

Based on the TCLP soluble lead results excavated soil would not be considered a RCRA hazardous waste.

Based on the DI-WET soluble lead results, excavated soil may be reused onsite (as Caltrans Type Y1) under the DTSC Variance if it is covered with at least one foot of non-hazardous soil or a pavement structure.

6.1.3 Leland Avenue Borings

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the maximum total lead concentrations and maximum-predicted WET

soluble concentrations for data collected at the Site. Weighted averages are calculated by using the total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total lead calculations are summarized in Table 5c.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 2.5 ft	174	8.4	Hazardous
<i>Underlying soil (2.5 to 3.0 ft)</i>	7.2	0.3	<i>Non-Hazardous</i>
0 to 3.0 ft	146	7.0	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data in the above table, if excavated separately and generated for offsite disposal, soil from the surface to a depth of 2.5 ft would be classified as a California hazardous waste since the maximum-predicted WET soluble lead concentration is greater than the lead STLC of 5.0 mg/l. Underlying soil (i.e., deeper than 2.5 ft) would be classified as non-hazardous. If soil from the surface to a depth of 3.0 feet were excavated as a whole and generated for offsite disposal, it would be classified as California hazardous waste since the maximum-predicted WET soluble lead concentration exceeds the STLC.

Based on the TCLP soluble lead results excavated soil would not be considered a RCRA hazardous waste.

Based on the DI-WET soluble lead results, excavated soil may be reused onsite (as Caltrans Type Y1) under the DTSC Variance if it is covered with at least one foot of non-hazardous soil or a pavement structure.

6.1.4 Meridian Avenue Borings

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the maximum total lead concentrations and maximum-predicted WET soluble concentrations for data collected at the Site. Weighted averages are calculated by using the total lead concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total lead calculations are summarized in Table 5d.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 2.0 ft	268	12.9	Hazardous
Underlying soil (2.0 to 3.0 ft)	102	4.9	Non-Hazardous
0 to 3.0 ft	212	10.2	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data in the above table, if excavated separately and generated for offsite disposal, soil from the surface to a depth of 2 ft would be classified as a California hazardous waste since the maximum-predicted WET soluble lead concentration is greater than the lead STLC of 5.0 mg/l. Underlying soil (i.e., deeper than 2 ft) would be classified as non-hazardous. If soil from the surface to a depth of 3.0 feet were excavated as a whole and generated for offsite disposal, it would be classified as California hazardous waste since the maximum-predicted WET soluble lead concentration exceeds the STLC.

Based on the TCLP soluble lead results excavated soil would not be considered a RCRA hazardous waste.

Based on the DI-WET soluble lead results, excavated soil may be reused onsite (as Caltrans Type Y1) under the DTSC Variance if it is covered with at least one foot of non-hazardous soil or a pavement structure.

6.2 Other CAM 17 Metals

The CAM 17 metals concentrations in site soil were compared to ESLs (Table A, SFRWQCB, May 2008). Other than lead, arsenic and vanadium were the only metals with reported concentrations greater than their respective ESL values in the soil samples collected at the Site. Arsenic was detected in the samples at concentrations between <1.0 and 13 mg/kg, exceeding the residential land use ESL of 0.39 mg/kg and the commercial/industrial land use ESL of 1.6 mg/kg for shallow soil (≤ 3 meters; SFRWQCB, Table A). Vanadium was reported in the soil samples at concentrations between 32 and 47 mg/kg, exceeding the residential land use ESL of 16 mg/kg for shallow soil.

Upper one-sided 95% UCLs were calculated for the full set of arsenic and vanadium concentrations. The UCLs were compared with the residential and commercial/industrial land use ESLs and with published background levels typically present in California soils as presented in *Background Concentrations of Trace and Major Elements in California Soils* (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996). The bootstrap

results are included in Appendix C. The calculated standard bootstrap UCLs, ESLs and published background concentrations are summarized in the table below:

Metal	95% UCL	RESIDENTIAL ESL	COMMERCIAL/ INDUSTRIAL ESL	PUBLISHED BACKGROUND MEAN ¹	PUBLISHED BACKGROUND RANGE ¹
Arsenic	2.8	0.39	1.6	3.5	0.6 to 11.0
Vanadium	39.6	16	200	112	39 to 288

Concentrations reported in milligrams per kilogram (mg/kg); ¹ Kearney Foundation of Soil Science, March 1996

The 95% UCL value for arsenic in the soil samples collected at the Site is greater than the residential and commercial/industrial land use ESLs, and within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels. The 95% UCL value for vanadium in the soil samples collected at the Site is greater than the residential land use ESL, however is less than the commercial/industrial land use ESL and within the published background range.

Offsite reuse or disposal of excavated soil may be restricted based on arsenic and vanadium content.

6.3 Naturally Occurring Asbestos

The mapped geology of the general area of the Site is indicative of a metamorphic regime where NOA minerals are likely to occur. The soil sample results indicate that NOA is present at the Site at concentrations exceeding the CARB regulatory limit of 0.25%.

NOA is a State of California regulated substance. Though asbestos was reported to be present, the asbestos content does not render these materials unsuitable for reuse within the Caltrans project boundaries. However, construction/maintenance activities involving these asbestos-containing materials may fall under regulatory jurisdiction of Cal-OSHA under CCR Title 8 Section 5208. Mitigation measures during construction/maintenance activities should be utilized to minimize releases of NOA to air (dust control) and surface waters (stormwater discharge). If reused within the Caltrans right-of-way, the material from areas where asbestos was reported to be present at or above regulated levels, or where ultramafic rock is present, cannot be used in such a way as to fall under the definition of surfacing material as defined in CARB's Title 17, Section 93106. NOA-containing material may be reused onsite, but must be covered by at least 0.25 foot of pavement, soil, or other material that contains less than 0.25% NOA.