

# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

Davis, California

December 2018

Prepared for:



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Geotechnical ▪ Geo-Environmental ▪ Construction Services ▪ Forensics

BCI File No. 3534.X  
December 4, 2018

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**Subject: PHASE II ENVIRONMENTAL SITE ASSESSMENT  
Pole Line Ramp Structure Connection Project  
Davis, California**

Dear Mr. Fuson,

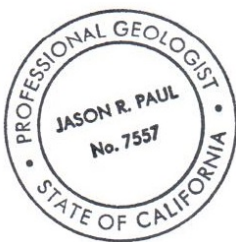
Blackburn Consulting (BCI) prepared this Phase II Site Assessment for the Pole Line Ramp Structure Connection Project, located in Davis, California. This report presents the findings of our assessment of the project area with regard to potential hazardous material impacts. We completed this work in accordance with our proposal dated September 17, 2018.

Thank you for including BCI on your team for this important project. Please call if you have questions or require additional information.

Sincerely,

**BLACKBURN CONSULTING**

Jason R. Paul, PG  
Senior Geologist



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Senior Environmental Engineer



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## **1 INTRODUCTION**

In accordance with our proposal dated September 17, 2018, Blackburn Consulting (BCI) prepared this Phase II Environmental Site Assessment (Phase II) to assess the potential presence of hazardous materials within the proposed improvement area of the Pole Line Ramp Structure Connection Project (Project). The Project is located along the north side of the Olive Drive off-ramp exiting from westbound Interstate 80 (I-80) located in Davis, California.

The City of Davis (City) requested BCI conduct a Phase II for the Project based on Caltrans review of the Preliminary Environmental Study (PES) and subsequent recommendation to conduct a Phase II. BCI prepared the scope of the Phase II based on our review of the site location and history. The Project is adjacent to an active railroad, interstate highway, and two closed leaking underground storage tank sites.

The intent of the Phase II is to assess whether hazardous materials conditions exist within the project boundaries at levels that can affect project planning, design, and/or construction. BCI conducted the Phase II in accordance with ASTM E1903-11 "Standard Practice for Environmental Site Assessment: Phase II Environmental Site Assessment Process" requirements.

This document includes background information regarding the project area, a summary of methodology used for the Phase II investigation, presents field and laboratory analytical data developed for the investigation, evaluates the findings of the investigation, and provides conclusions and recommendations related to the need for additional investigation and/or remedial action.

## **2 PROJECT DESCRIPTION**

The City received an Active Transportation Program grant in order to improve safety around Montgomery Elementary School and to better connect the Olive Drive neighborhood to the school and other destinations to the east. The Olive Drive/Pole Line Road Bike Connection would design and construct Safe Routes to School infrastructure improvements for Montgomery Elementary School and a bicycle/pedestrian bridge from the Olive Drive neighborhood to the two-way multi-use path on the Pole Line Road overcrossing, reducing route distance to the school from 2.6 to 1.2 miles and improving safety.

The proposed improvements will be constructed entirely within existing City and Caltrans right-of-way; therefore, no additional right-of-way is required. Figure 1 is a Vicinity Map and Figure 2 is a Site Plan.

### **2.1 Site Location and Description**

The Project is located in the City of Davis. The project area is bounded on the north by the Union Pacific Railroad, on the south by the Olive Drive off-ramp exit from westbound I-80, on the west by existing roadway and bicycle/pedestrian path, and on the east by the overhead Pole Line Road overcrossing bridge. The land is developed with the existing bicycle/pedestrian path, and natural vegetation.



## 2.2 Proposed Development

The Project proposes to construct a pedestrian/bicycle bridge that would connect the Olive Drive neighborhood to the two-way multi-use path on the Pole Line Road overcrossing. For the linear ramp bridge, a new cast-in-place reinforced concrete box girder bridge would be constructed. The ramp bridge is anticipated to be approximately 14 feet wide and 408 feet long with a longitudinal slope of 8 percent. Pole Line Road overcrossing would be modified where the ramp bridge connects to the overcrossing. Structure work would include removal of a portion of the existing concrete barrier on the overcrossing and construction of a new connection and joint between the ramp bridge and the overcrossing. Modification to the existing at-grade Class I Olive Drive bicycle path would include realignments at the connection to the proposed linear ramp bridge, tree and vegetation removal, planting of replacement trees, and reconstruction of existing bicycle path pavement due to the current pavement condition.

## 2.3 Geology

The site lies within the Great Valley Geomorphic Province of California, which is a large, elongate, northwest-trending structural trough. The Province is subdivided into two major divisions designated the Sacramento and San Joaquin Valleys. These valleys have been filled to their present elevation with thick sequences of sediment, ranging in age from Jurassic to present day, creating a nearly flat-lying alluvial plain that extends from the Tehachapi Mountains in the south to the Klamath Mountains in the north. The western and eastern boundaries of this province are formed by the California Coast Ranges and the Sierra Nevada, respectively. The Project area is located at the southern end of the Sacramento Valley and lies within sight of the Coast Range which is visible to the west of the City. Soils locally are generally clayey with varying amounts of silt.

## 2.4 Hydrogeology

The Yolo sub-basin of the Sacramento Valley groundwater basin underlies the majority of Yolo County including Davis. BCI reviewed general groundwater level data made available at the DWR website [www.water.ca.gov/waterdatalibrary](http://www.water.ca.gov/waterdatalibrary), and depth to groundwater beneath the site fluctuates from approximately 40 to 75 feet below ground surface (bgs). The surface water in Yolo County generally drains from the west to east, eventually being received by the Yolo Bypass.

## 2.5 Project Background and Issues

Caltrans recommended a Phase II assessment for the Project based on their review of the Preliminary Environmental Study (PES). BCI reviewed the site history and available documentation and determined there are four conditions that constitute a Recognized Environmental Condition (REC)<sup>1</sup> associated with

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<sup>1</sup> BCI uses the term Recognized Environmental Condition (REC) in general but not strict compliance with ASTM E1527-13, which defines the meaning as *"the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimus conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimus are not recognized environmental conditions."* BCI includes this definition to clarify conditions addressed in this ESA.



the project area. The four RECs are the basis of this Phase II assessment and include an active railroad, interstate highway, and two closed leaking underground storage tank sites.

### 3 PHASE II APPROACH

Based on the location of the site, there is a potential for hazardous materials to be encountered during construction activities. The objective of this Phase II assessment is to screen for the presence of contaminants of concern using data collected from eight hand-auger soil borings. Figure 2 shows the approximate boring locations.

Data generated during this Phase II is used to evaluate and document current site conditions. The following published screening levels are used as site action levels for this project to aid in making decisions related to the need for additional assessment of the parcels:

- Regional Screening Levels (RSLs): “Regional Screening Levels for Chemical Contaminants at Superfund Sites”, Environmental Protection Agency (EPA) Region IX, November 2017.
- California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO), Human Health Risk Assessment Note Number 3; modified screening levels (DTSC-SLs), June 2016
- User’s Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final, California Regional Water Quality Control Board (RWQCB), February 2016

BCI reviewed the results of our sample analyses with respect to relevant action levels.

### 4 SAMPLING METHODOLOGY

#### 4.1 Pre-Field Activities

BCI contacted Underground Service Alert to identify and mark underground utilities within the investigation area before work began. A site-specific health and safety plan (HASP) was prepared for the project to inform on-site personnel about chemical and physical hazards and outline specific emergency procedures to be employed in the event of an accident or changes in field conditions. On-site personnel involved in the investigation were required to acknowledge the HASP following daily tailgate meetings. Field work was completed without incident.

#### 4.2 Soil Sampling

BCI advanced eight (8) hand auger soil borings on November 5-6, 2018. The hand-auger borings were advanced to the desired sample depth and a slide hammer was used to drive a stainless-steel sampler equipped with a single stainless-steel liner into the soil for sample collection. The samples were retrieved from the sampler and transferred to a jar, capped, labelled, and temporarily stored in an ice chest pending delivery to the laboratory. Specifically, BCI:

- Performed six hand auger borings to an approximate depth of three (3’) feet below ground surface (bgs).
- Collected soil samples at interval “A”, zero to four (0-4”), Interval “B”, twelve to eighteen (12-18”) and Interval “C”, twenty-four to thirty-six (24-36”) inches bgs. One deviation from the



sampling plan occurred, Interval "C" from boring B1 was not collected due to auger refusal at 19" bgs.

- Performed two hand auger borings to an approximate depth of six (6) feet below ground surface (bgs). Collect soil samples at two to three (2-3') and five to six (5-6') feet bgs.
- Transferred samples into glass jars, label with the sample time, date, location, depth, and the sampler's initials.
- Samples were placed in a cooled ice chest and delivered to a California certified analytical laboratory under continuous chain-of-custody documentation.
- Cleaned sampling equipment with an Alconox wash solution and a distilled water rinse between each sample location.

We observed samples for general soil conditions and field indicators of contamination (odors, discoloration) during sample retrieval. No visual or olfactory indications of contamination were noted in retrieved soil samples.

Soil samples collected during this investigation were submitted to SunStar Laboratory, a certified California ELAP analytical laboratory for testing.

Boring were backfilled with cuttings and rinse water discharged to the ground. Photographs of on-site activities are in Appendix E.

### 4.3 Sample Analysis

BCI submitted soil samples to SunStar Laboratory, a certified ELAP analytical laboratory under continuous chain-of-custody documentation. Soil samples were analyzed for the following constituents:

- Four (4) samples from two (2) locations adjacent to the former LUST Cleanup Site were analyzed for the following:
  - Total Petroleum Hydrocarbons (TPH) as gasoline chain (GRO), TPH diesel chain (DRO) and TPH motor oil chain (MORO) by EPA Method 8015
  - Benzene, Toluene, Ethylbenzene, Xylene (BTEX)/Oxygenates by EPA Method 8260
  - CAM17 Metals by EPA Method 6010B
  - pH by EPA Method 9045 (one random sample)
- Seventeen (17) samples from six (6) locations adjacent to the railroad and I-80 off-ramp were analyzed for the following:
  - Semi volatile Organic Compounds (SVOCs) by EPA Method 8270
  - DRO and MORO by EPA Method 8015
  - Total Lead and Total Arsenic by EPA Method 6010B
  - Eight (8) samples with Total Lead results exceeding 50 mg/kg, were further tested for soluble lead using the Waste Extraction Test (WET) test method
  - pH by EPA Method 9045 (one random sample)

SunStar performed Quality Assurance/Quality Control (QA/QC) procedures for each method of analysis. Laboratory QA/QC procedures include method blanks, spiked, and duplicate spiked samples.





## 5 INVESTIGATION RESULTS

BCI discusses the results of the field and laboratory investigations in the following sections.

### 5.1 Subsurface Conditions

The general soil profile consists primarily of poorly-graded sand, underlain by silty sand, sandy silts, and silts, underlain by lean clays. Groundwater was not encountered. Soil boring logs are included in Appendix A.

### 5.2 Sample Analytical Test Results

Analytical results for detected compounds are summarized in Table 1 below. Applicable screening levels from the US EPA (RSLs), the California Regional Water Quality Control Board (ESLs), and DTSC-SLs, are included in the tables for comparison. Reported detections and range of reported concentrations are discussed below. Tables including complete analytical results are included in Appendix B. Laboratory analytical reports and chain-of-custody are included in Appendix C.

Location	Sample ID:	Sample Depth (ft):	Title 22 Metals (mg/kg)											TPH (Extractable Petroleum Hydrocarbons) (mg/kg)			
			EPA Method 6010B												EPA Method 7470/747	EPA Method 8015C	
			Arsenic	Barium	Chromium	Cobalt	Copper	WET Lead mg/l	Lead	Nickel	Vanadium	Zinc	Mercury	C13-C28 (DRO)	C29-C40 (MORO)		
Adjacent to Bike Path	DB1-A	2.0	6.7	190	92	23	48	ND	39	180	81	83	0.15	ND	ND		
	DB1-B	6.0	ND	200	92	24	49	ND	ND	200	89	84	ND	ND	ND		
	DB2-A	2.0	ND	190	98	26	49	ND	ND	210	88	83	0.14	ND	ND		
	DB2-B	6.0	8.2	210	93	24	52	ND	28	190	91	96	ND	ND	ND		
	B1-A	0.5	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND		
	B1-B	2.0	ND	NA	NA	NA	NA	6	99.0	NA	NA	NA	NA	ND	ND		
	B2-A	0.5	ND	NA	NA	NA	NA	2.9	69	NA	NA	NA	NA	10	140		
	B2-B	2.0	ND	NA	NA	NA	NA	1.9	70	NA	NA	NA	NA	ND	31		
	B2-C	3.0	ND	NA	NA	NA	NA	1.1	60	NA	NA	NA	NA	ND	80		
	B3-A	0.5	ND	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	13	140		
	B3-B	2.0	ND	NA	NA	NA	NA	ND	64	NA	NA	NA	NA	17	130		
	B3-C	3.0	ND	NA	NA	NA	NA	NA	29	NA	NA	NA	NA	ND	86		
	B4-A	0.5	ND	NA	NA	NA	NA	15	450	NA	NA	NA	NA	170	2600		
	B4-B	2.0	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	ND		
	B4-C	3.0	ND	NA	NA	NA	NA	NA	32	NA	NA	NA	NA	ND	37		
	B5-A	0.5	ND	NA	NA	NA	NA	3	84	NA	NA	NA	NA	15	310		
	B5-B	2.0	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	ND		
	B5-C	3.0	ND	NA	NA	NA	NA	NA	31	NA	NA	NA	NA	ND	ND		
	B6-A	0.5	ND	NA	NA	NA	NA	2.9	96	NA	NA	NA	NA	15	180		
	B6-B	2.0	ND	NA	NA	NA	NA	NA	37	NA	NA	NA	NA	ND	ND		
B6-C	3.0	ND	NA	NA	NA	NA	NA	24	NA	NA	NA	NA	ND	22			
Reporting Limit**			5.00	1.00	2.00	2.00	1.00	0.1 mg/l	3.00	2.00	5.00	1.00	5.00	10.0	10.0		
EPA Region 9 RSLs	Industrial	3.0	220,000	1,800,000*	350	47,000	5,800	800	22,000*	5,800	350,000	5,800	420+	420+			
DTSC-SLs^	Commercial	0.36	--	170,000*	--	--	--	320	3,100	1,000	--	--	--	--			
RWQCB ESLs	Commercial/Industrial	0.31	220,000	1,800,000	350	47,000		320	11,000	5,800	350,000	5,800	1,100	140,000			
	Construction Worker Exposure	0.98	3,000	530,000	28	14,000		160	86	470	110,000	1,800	880	32,000			

Notes  
- B1-A = Boring Location, first sample collected from boring  
- mg/kg = milligrams per kilogram  
- ug/kg = micrograms per kilogram  
- EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels  
- NA: Not Analyzed  
- ND: not detected at or above reporting limit  
- DTSC-SLs: California Department of Toxic Substance Control Screening Levels  
- RWQCB ESLs: California Regional Water Quality Control Board, Environmental Screening Levels  
\* Values are for salts  
\*\* Reporting Limit may vary depending upon analytical results, see full analytical results report  
+ RSL is dependent on aromatic/aliphatic component concentrations and ranges from 420 mg/kg (aromatic low) to 3,500,000 mg/kg (aliphatic-high)  
^ Value indicated is the lower of the cancer and non-cancer endpoints



Analytical results are discussed in the following subsections by boring.

### 5.2.1 Borings B1-B6

The determination of the type of analytical testing for Borings B1-B6 was based on potential contaminants from the adjacent UPRR railroad and I-80 highway. I-80 is located adjacent to the south border of the project alignment. Roadways that were high use prior to the 1980's have the potential for elevated levels of Aerially Deposited Lead (ADL) due to emissions from engines powered by leaded gasoline. UPRR railroad tracks are located adjacent to the north edge of the project alignment. Soil adjacent to and beneath existing and former railroad beds have the potential for elevated levels of contaminants commonly associated with railroad activities, including petroleum hydrocarbons, lead, arsenic, and creosote.

#### Metals

- Arsenic was not detected above laboratory reporting limits in the seventeen (17) samples.
- Lead was reported in fourteen (14) samples ranging in concentration from 16.0 mg/kg in sample B3-A, to 450 mg/kg in sample B4-A.

#### Petroleum Hydrocarbons

- TPH-DRO was reported in seven (7) samples ranging in concentration from 10 mg/kg in sample B2-A, to 170 mg/kg in sample B4-A.
- TPH-MORO was reported in seven (7) samples ranging in concentration from 22 mg/kg in sample B6-C, to 2600 mg/kg in sample B4-A.

SVOCs were not detected above laboratory reporting limits for the seventeen samples analyzed. The tested pH was 7.9 at boring B3-B, close to neutral.

### 5.2.2 Borings DB1-DB2

The determination of the type of analytical testing for borings DB1 and BD2 was based on the location of two former Leaking Underground Storage Tank (LUST) sites nearby to the project area. Two sample intervals A (2-3') and B (5-6') feet bgs were assessed.

#### Metals

- Arsenic was reported in two (2) samples analyzed at concentrations of 6.7 mg/kg in sample DB1-A and 8.2 mg/kg in sample DB2-B.
- Barium was reported in all four (4) samples analyzed ranging in concentration from 190 mg/kg in sample DB1-A, to 210 mg/kg in sample DB2-B.
- Chromium was reported in all four (4) samples analyzed ranging in concentration from 92 mg/kg in samples DB1-A and DB1-B, to 98 mg/kg in sample DB2-A.
- Cobalt was reported in all four (4) samples analyzed ranging in concentration from 23 mg/kg in sample DB1-A, to 26 mg/kg in samples DB2-A.
- Copper was reported in all four (4) samples analyzed ranging in concentration from 48 mg/kg in sample DB1-A, to 52 mg/kg in sample DB2-B.
- Lead was reported in two (2) samples analyzed at concentrations of 28 mg/kg in sample DB2-B and 39 mg/kg in sample DB1-A.



- Nickel was reported in all four (4) samples analyzed ranging in concentration from 180 mg/kg in sample DB1-A, to 210 mg/kg in sample DB2-A.
- Vanadium was reported in all four (4) samples analyzed ranging in concentration from 81 mg/kg in sample DB1-A, to 91mg/kg in sample DB2-B.
- Zinc was reported in all four (4) samples analyzed ranging in concentration from 83 mg/kg in samples DB1-A and DB2-A, to 96 mg/kg in sample DB2-B.
- Mercury was reported in three (3) samples analyzed at concentrations of 0.14 mg/kg in sample DB2-A and 0.15 mg/kg in sample DB1-A.

**BTEX** and **TPHs** as **DRO** and **MORO** were not detected above laboratory reporting limits for the four samples analyzed. Tested **pH** value was 7.2 at boring DB2-B.

## 6 SUMMARY AND EVALUATION

Twenty-one (21) soil samples were collected from eight (8) hand-augured soil borings within the proposed project limits.

### 6.1 Analytical Results Discussion

Reported arsenic soil concentrations (6.7 mg/kg in sample DB1-A and 8.2 mg/kg in sample DB2-B) exceeded listed screening levels. However, the reported concentrations are within the range of accepted background concentrations in northern California. The Regional Water Quality Control Board (RWQCB) website includes a Master's Thesis prepared by Dylan Jacques Duvergé titled "Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region" (Duvergé 2011). The Duvergé thesis proposes an upper estimate for background arsenic of 11.00 mg/kg based on analysis of GeoTracker data from nine counties within the San Francisco Bay Area. The RWQCB notes in their ESL guidance that the 11.0 mg/kg level can be used as a background concentration in consultation with the overseeing regulatory agency.

Reported concentrations of barium, chromium, cobalt, copper, vanadium, zinc and mercury are below listed screening levels and are consistent with published natural background levels.<sup>2</sup> Reported concentrations of nickel for all four samples range from 180 to 210 mg/kg. These reported concentrations exceed the RWQCB ESL Construction Worker Exposure limit of 86 mg/kg for nickel, however, tested levels do not exceed the current RWQCB ESL Industrial/Commercial Exposure limit (11,000 mg/kg) for nickel in soil, or the DTSC-SL (3,100 mg/kg) for a commercial/industrial exposure scenario. The occurrence of limited exceedances for nickel in a construction worker exposure scenario do not indicate a widespread impact or pose a significant risk to workers as long as site controls to minimize construction worker exposure are implemented.

Reported concentrations of lead are discussed in Section 6.2.

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<sup>2</sup>Background levels for metals are based on a California soil study (Kearney Foundation Special Report – Background Concentrations of Trace and Major Elements in California Soils, March 1996).



Reported concentrations of TPH-DORO and TPH-MORO compounds are below listed screening levels except for sample B4-A which has a TPH-MORO reported concentration of 2600 mg/kg. This reported concentration exceeds the Industrial Exposure EPA RSL of 440 mg/kg, however, is below the Construction Worker Exposure RWQCB ESL of 32,000 mg/kg. The occurrence of a limited exceedance does not indicate a widespread impact or pose a significant risk to workers.

Site soil pH averages 7.55 (close to neutral), conditions that do not enhance metal leaching potential. The pH conditions do not impose any special soil management requirements.

## 6.2 Aerially Deposited Lead Summary

BCI assessed the presence of ADL in surface and shallow subsurface soil within the project improvement area. This assessment evaluates whether impacts due to ADL will require mitigation recommendations for construction.

## 6.3 Sample Summary

BCI obtained samples from six (6) hand auger boring locations (B1-B6) within the project limits adjacent to I80 and the UPRR railroad. Boring locations were within areas anticipated to be disturbed by the planned construction activities. In addition to the ADL sample locations, data from two deeper hand auger locations (DB1 and DB2) were included in the ADL assessment data. Sampling approach and methodology are discussed in Section 4.0.

## 6.4 ADL Analytical Results

Analytical results are summarized in Table 1. Test results indicate the following:

- Total lead concentrations range from below the reporting limit of 3.0 mg/kg to 450 mg/kg.
- No reported sample concentrations exceed the Total Threshold Limit Concentration (TTLC) of 1,000 mg/kg.
- Eight (8) samples exhibited total lead in excess of 50 mg/kg (i.e. ten times higher than the Soluble Threshold Limit Concentration (STLC)<sup>3</sup> of 5.0 mg/l) and were further tested for soluble lead by the WET method. Soluble lead concentrations were found in seven (7) samples ranging from 1.1 mg/l to 15.0 mg/l. Two (2) samples exceed the STLC of 5.0 mg/l.
- Results of pH tests average 7.55.

## 6.5 Statistical Analysis

BCI performed statistical analysis of the ADL sample data using ProUCL 5.0 software to calculate the sample mean (average) as well as the 95% Upper Confidence Limit (UCL) on the mean. Much of the ADL data is skewed to lower concentrations and does not fit a standard distribution pattern; therefore, BCI calculated 95% UCLs using normal, gamma and non-parametric techniques that do not require data to have a specific distribution. ProUCL 5.0 software determines data calculation techniques based on data size, distribution and skewness. Appendix D presents statistical analysis calculations performed by ProUCL 5.0.

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<sup>3</sup> STLC and TTLC are regulatory limits defining hazardous waste in California



We analyzed groups of data based on sample depth. Table 2 summarizes the total lead results for each sample depth interval, as well as the combined interval (0-30"). The combined interval (0-30") provides information on the sample population as a whole. Sample B4-A (total lead concentration of 450 mg/kg) was identified as a statistical outlier (as determined by the ProUCL software) and removed from the data set to provide a more representative statistical analysis.

BCI conducted statistical analyses for all sample locations within the project limits. Table 2 presents the ranges of lead concentrations, average lead concentrations, and 95% Upper Confidence Limits (UCLs) for each depth interval.

TABLE 2: Total Lead Statistical Summary by Depth Interval All Sample Locations			
Soil Depth Interval (inches bgs)	Total Lead (mg/kg)	Total Lead Mean (mg/kg)	Total Lead 95% UCL (mg/kg) (Calculation Technique)
0 – 6"	ND* to 96**	53.6	93.29 (non-parametric)
12 – 18"	ND to 99	45	71.02 (non-parametric)
24 – 30"	24 to 60	34	44.73 (non-parametric)
0 – 30"	ND to 99**	39.7	51.99 (non-parametric)

\* ND = Not detected at a reporting limit of 3.0 mg/kg

\*\* Outlier B4-A was removed from data set.

Based on the mean and 95% UCL values shown in Table 2, the highest concentration of lead is in the upper six inches. Total lead concentrations and the 95% UCL for all groups are well below the 1,000 mg/kg TTLC for lead.

## 6.6 Soluble Lead

Soluble lead testing was performed on nine samples by the WET method. Statistical modeling was utilized to analyze the WET data. Since lead solubility (WET) testing was limited to the eight samples with total lead concentrations that exceeded 50 mg/kg, an upward bias in solubility results is introduced. We therefore performed a linear regression analysis to predict the 95% UCL for WET solubility and reduce the effect of the biased sample populations. For the regression analysis, we consider eight data points and define the intercept to occur at the origin. The calculated multiple "r" correlation coefficient is 0.92 which indicates that the correlation between the total and soluble lead data sets is acceptable.



The WET data regression equation is calculated to be:

$$y = 0.034 (x) \text{ for all sample locations}$$

Where:

y = soluble lead concentrations in mg/l

x = total lead concentrations in mg/kg

We used the 95% UCL values for total lead in the regression formulas to calculate the predicted WET solubility for the various soil depth intervals shown in Table 3.

TABLE 3: Predicted Lead Solubility				
Soil Depth Interval (inches bgs)	Total Lead Mean (mg/kg)	WET-Soluble Lead Mean (mg/l)	95% UCL Total Lead All Locations (mg/kg)	95% UCL WET-Soluble Lead All Locations (mg/l)
0-6"	53.6	1.82	93.29	3.17
12-18"	45	1.53	71.02	2.41
24-30"	34	1.16	44.73	1.57
0-30"	39.7	1.35	51.99	1.77

The predicted 95% UCL for the samples tested using the WET test are below the STLC of 5.0 mg/l, for all sample locations at each depth interval and combined depth intervals. The 95% UCLs for WET-Soluble Lead were below the STLC of 5.0 mg/l, therefore, none of the samples were further tested for TCLP solubility.

## 6.7 Conclusions

As of July 1, 2016, management of lead-impacted soil on projects within Caltrans Right of Way (ROW) is governed by the Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement) pursuant to Health and Safety Code Section 25187 (b)(5), entered into by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), and the California Department of Transportation.

“ADL Contaminated Soil” is defined in the Agreement as excavated soil whose only constituent of concern that poses an unacceptable risk to human health or the environment is lead, in concentrations greater than considered appropriate for unrestricted use by DTSC, which is currently 80 mg/kg total lead based on a 95% upper confidence limit (UCL) and/or 5 mg/l extractable lead based on a 95% UCL, as determined by the California Waste Extraction Test (WET).



- Tested total lead concentrations based on a 95% UCL for the combined soil depth interval is below the 80 mg/kg threshold for ADL Contaminated Soil.
- Tested soluble lead concentrations determined by the WET method and based on a 95% UCL for all soil depth intervals are below the 5 mg/l threshold for ADL Contaminated Soil.
- Tested soil pH averages 7.55 (close to neutral) and does not enhance lead leaching potential.

Comparison of the test results with the soil classifications in the Agreement indicates that for the project area, excavated soil will be characterized as “Clean Soil”. Handling and disposition of “Clean Soil” will not be subject to management under the conditions of the Agreement but will require contractor notification and preparation of a Lead Compliance Plan (LCP) for worker safety.

## 7 RECOMMENDATIONS

The results of this investigation do not indicate significant impacts to soil within the project limits. Based on soil sample analysis results, and the scope of anticipated construction work, BCI does not recommend additional soil assessment or special soil management. However, a site Health and Safety Plan (HASP) and LCP should be prepared for the project that include measures to control worker exposure to elevated levels of nickel and lead in soil. At a minimum, BCI recommends the LCP should include the following work practices:

- Keep airborne dust on site to a minimum using water.
- Prevent soil ingestion by not eating, smoking, drinking near work operations.
- Avoid runoff of dust suppression water.
- Wash hands and face before eating, drinking, smoking, or using bathroom.
- Store food and water so it will not be in contact with site soil.
- Read, review and sign the HASP.

If conditions are identified during construction that differ from the conditions identified during this investigation, BCI should be contacted to perform additional assessment as necessary.

## 8 LIMITATIONS

BCI performed these services in accordance with generally accepted environmental engineering principles and practices currently used in Northern California. We do not warranty our services. Our scope does not include evaluation of hazardous materials or a determination of their potential presence on site, other than as specified herein. This report is not a comprehensive site characterization and shall not be so construed. We base the findings presented in this report on limited soil sampling and laboratory analyses. This report has been prepared for Wood Rodgers. Others who use the data presented, or rely on the findings, conclusions and recommendations presented herein do so at their own risk and should determine the adequacy of the information for their own purposes. BCI makes no claim of the appropriateness for such use and is not responsible for the results of such uses.

# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

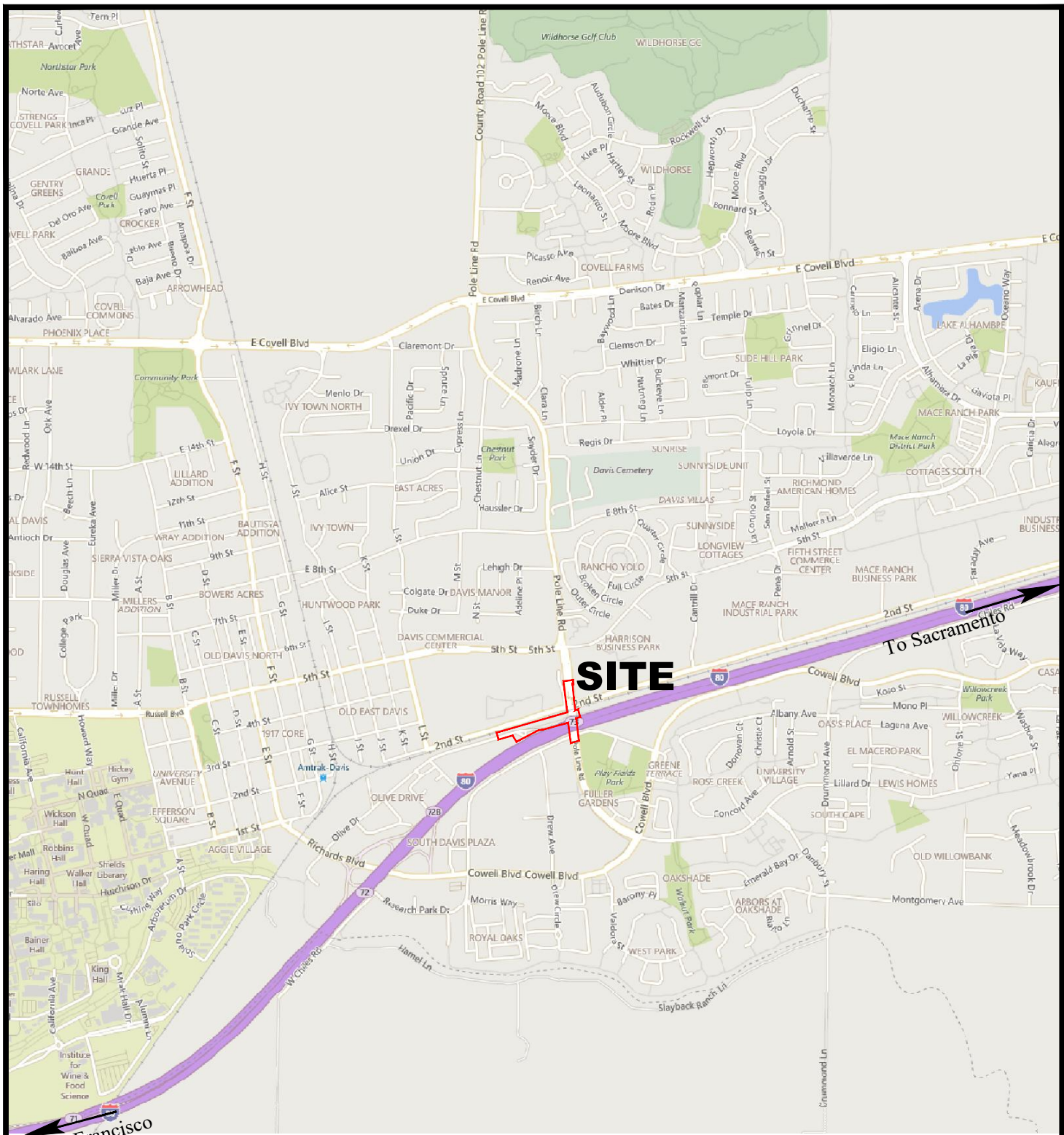
Davis, California

### FIGURES

Vicinity Map  
Soil Boring Locations







**SITE**



SCALE 1" = 1000'

12/2/2018 3534x Flight Pole Line Ramp Structure Connection.dwg

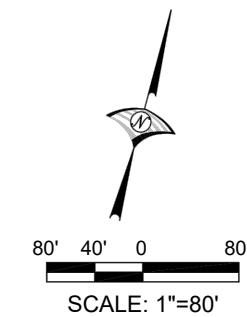
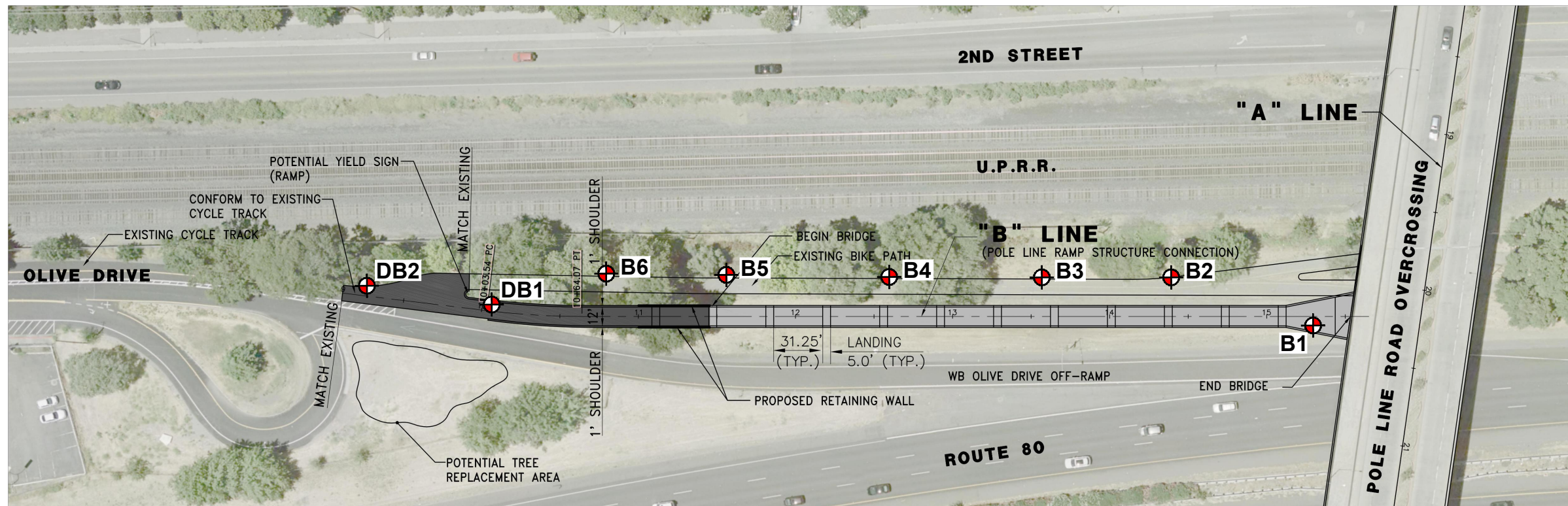


2491 Boatman Avenue  
 West Sacramento, CA 95691  
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 www.blackburnconsulting.com

**VICINITY MAP**  
 Pole Line Ramp Structure Connection  
 Davis, California

File No. 3534.x  
 December 2018  
 Figure 1

12/3/2018 3534x Fig2 Pole Line Ramp Structure Connection.dwg



### LEGEND

**B1** Approximate Boring Location

Source: Preliminary Layout, 1"=40' by Wood Rodgers, dated April 2018.



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## SITE PLAN

### Pole Line Ramp Structure Connection Davis, California

File No. 3534.x
December 2018
Figure 2

# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

Davis, California

### APPENDIX A

Soil Boring Logs



# BORING LOG

**Boring No: DB1**



2491 Boatman Ave  
West Sacramento, CA 95691  
(916) 375-8706

Project No.: 3534.x	Sheet of
Project Name: Pole Line Ramp Structure Connection	
Project Location: Davis, CA	
Logged By: LDM	Date: 11/6/2018

Drilling Contractor:	Lic. No.
Driller:	Helper:
Drill Rig:	Method: Hand Auger
Ground Elevation:	Depth:
Hammer Type:	

Sampler Type	Blow Counts	% Rec.	# Tubes	Pocket Pen (tsf)	Depth in (ft)	Sample Interval & No	Soil Class
					0.5		
					1		
					1.5		
					2		
					2.5		
					3		
					3.5		
					4		
					4.5		
					5		
					5.5		
					6		
					6.5		
					7		
					7.5		
					8		
					8.5		
					9		
					9.5		
					10		
					10.5		
					11		
					11.5		
					12		
					12.5		
					13		
					13.5		
					14		
					14.5		
					15		

Description	Ground Water Elevation Data	
	Date	
	Time	
		No Groundwater

Lean CLAY with GRAVEL; (CL); med stiff; grayish brown; slightly moist; fine to med coarse GRAVEL

Root

-----

SILT; (ML); med stiff; grayish brown; moist; slightly cemented


Moderately cemented

-----

EOB @ 5.5 ft bgs

# BORING LOG

**Boring No: DB2**

	2491 Boatman Ave West Sacramento, CA 95691 (916) 375-8709							Project No.: 3534.x      Sheet    of		
								Project Name: Pole Line Ramp Structure Connection		
							Project Location: Davis, CA			
							Logged By: LDM      Date: 11/6/2018			
							Drilling Contractor: _____ Lic. No. _____			
							Driller: _____ Helper: _____			
							Drill Rig: _____ Method: _____			
							Ground Elevation: _____ Depth: _____			
							Hammer Type: _____			
							Ground Water Elevation Data			
Sampler Type	Blow Counts	% Rec.	# Tubes	Pocket Pen (tsf)	Depth in (ft)	Sample Interval & No	Soil Class	Description	Date	No groundwater
									Time	
					0.5					
					1					
					1.5					
					2					
					2.5					
					3					
					3.5					
					4					
					4.5					
					5					
					5.5					
					6					
					6.5					
					7					
					7.5					
					8					
					8.5					
					9					
					9.5					
					10					
					10.5					
					11					
					11.5					
					12					
					12.5					
					13					
					13.5					
					14					
					14.5					
					15					
					15.5					

# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

Davis, California

### APPENDIX B

Complete Analytical Tables



Pole Line Ramp Structure Connection Project Analytical Results

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Location	Sample ID:	Sample Depth (ft):	Title 22 Metals (mg/kg)																	
			EPA Method 6010B																EPA Method 7470/7471	
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	WET Lead mg/l	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury	
Adjacent to Bike Path	DB1-A	2.0	ND	6.7	190	ND	ND	92	23	48	39	ND	180	ND	ND	ND	81	83	0.15	
	DB1-B	6.0	ND	ND	200	ND	ND	92	24	49	ND	ND	200	ND	ND	ND	89	84	ND	
	DB2-A	2.0	ND	ND	190	ND	ND	98	26	49	ND	ND	210	ND	ND	ND	88	83	0.14	
	DB2-B	6.0	ND	8.2	210	ND	ND	93	24	52	28	ND	190	ND	ND	ND	91	96	ND	
	B1-A	0.5	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	
	B1-B	2.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	99.0	6	NA	NA	NA	NA	NA	NA	NA
	B2-A	0.5	NA	ND	NA	NA	NA	NA	NA	NA	NA	69	2.9	NA	NA	NA	NA	NA	NA	NA
	B2-B	2.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	70	1.9	NA	NA	NA	NA	NA	NA	NA
	B2-C	3.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	60	1.1	NA	NA	NA	NA	NA	NA	NA
	B3-A	0.5	NA	ND	NA	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA	NA	NA
	B3-B	2.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	64	ND	NA	NA	NA	NA	NA	NA	NA
	B3-C	3.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	29	NA	NA	NA	NA	NA	NA	NA	NA
	B4-A	0.5	NA	ND	NA	NA	NA	NA	NA	NA	NA	450	15	NA	NA	NA	NA	NA	NA	NA
	B4-B	2.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA
	B4-C	3.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	32	NA	NA	NA	NA	NA	NA	NA	NA
	B5-A	0.5	NA	ND	NA	NA	NA	NA	NA	NA	NA	84	3	NA	NA	NA	NA	NA	NA	NA
	B5-B	2.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA
	B5-C	3.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	31	NA	NA	NA	NA	NA	NA	NA	NA
B6-A	0.5	NA	ND	NA	NA	NA	NA	NA	NA	NA	96	2.9	NA	NA	NA	NA	NA	NA	NA	
B6-B	2.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	37	NA	NA	NA	NA	NA	NA	NA	NA	
B6-C	3.0	NA	ND	NA	NA	NA	NA	NA	NA	NA	24	NA	NA	NA	NA	NA	NA	NA	NA	
Reporting Limit**			3.00	5.00	1.00	1.00	2.00	2.00	2.00	1.00	3.00	0.1 mg/l	2.00	5.00	2.00	2.00	5.00	1.00	0.100	
EPA Region 9 RSLs	Industrial		470	3.0	220,000	2,300	980	1,800,000*	350	47,000	800	5,800	22,000*	5,800	5,800	12*	5,800	350,000	46	
DTSC-SLs^	Commercial		--	0.36	--	210	7.3	170,000*	--	--	320	--	3,100	--	1,500	--	1,000	--	4.4	
RWQCB ESLs	Commercial/Industrial		470	0.31	220,000	2,200	580	1,800,000	350	47,000	320	5,800	11,000	5,800	5,800	12	5,800	350,000	190	
	Construction Worker Exposure		140	0.98	3,000	42	43	530,000	28	14,000	160	1,800	86	1,700	1,800	3.5	470	110,000	44	

**Notes**  
 - B1-A = Boring Location, first sample collected from boring  
 - mg/kg = milligrams per kilogram  
 - ug/kg = micrograms per kilogram  
 - EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels  
 - NA: Not Analyzed  
 - ND: not detected at or above reporting limit  
 - DTSC-SLs: California Department of Toxic Substance Control Screening Levels  
 - RWQCB ESLs: California Regional Water Quality Control Board, Environmental Screening Levels  
 \* Values are for salts  
 \*\* Reporting Limit may vary depending upon analytical results, see full analytical results report  
 ^ Value indicated is the lower of the cancer and non-cancer endpoints

Pole Line Ramp Structure Connection Project					
TABULATED SOIL SAMPLE ANALYTICAL RESULTS					
Location	Sample ID:	Sample Depth (ft):	TPH (Extractable Petroleum Hydrocarbons) (mg/kg)		
			EPA Method 8015C		
			C6-C12 (GRO)	C13-C28 (DRO)	C29-C40 (MORO)
Adjacent to Bike Path	DB1-A	2.0	ND	ND	ND
	DB1-B	6.0	ND	ND	ND
	DB2-A	2.0	ND	ND	ND
	DB2-B	6.0	ND	ND	ND
	B1-A	0.5	ND	ND	ND
	B1-B	2.0	ND	ND	ND
	B2-A	0.5	ND	10	140
	B2-B	2.0	ND	ND	31
	B2-C	3.0	ND	ND	80
	B3-A	0.5	ND	13	140
	B3-B	2.0	ND	17	130
	B3-C	3.0	ND	ND	86
	B4-A	0.5	ND	170	2600
	B4-B	2.0	ND	ND	ND
	B4-C	3.0	ND	ND	37
	B5-A	0.5	ND	15	310
	B5-B	2.0	ND	ND	ND
	B5-C	3.0	ND	ND	ND
	B6-A	0.5	ND	15	180
	B6-B	2.0	ND	ND	ND
B6-C	3.0	ND	ND	22	
Reporting Limit**			10.0	10.0	10.0
EPA Region 9 RSLs	Industrial		420	420	420
DTSC-SLs^	Commercial		--	--	--
RWQCB ESLs	Commercial/Industrial		3,900	1,100	140,000
	Construction Worker Exposure		2,800	880	32,000

**Notes**

- B1-A = Boring Location, first sample collected from boring
- mg/kg = milligrams per kilogram
- ug/kg = micrograms per kilogram
- EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels
- NA: Not Analyzed
- ND: not detected at or above reporting limit
- DTSC-SLs: California Department of Toxic Substance Control Screening Levels
- RWQCB ESLs: California Regional Water Quality Control Board, Environmental Screening Levels
- \* Values are for salts
- \*\* Reporting Limit may vary depending upon analytical results, see full analytical results report
- + RSL is dependent on aromatic/aliphatic component concentrations and ranges from 420 mg/kg (aromatic low) to 3,500,000
- ^ Value indicated is the lower of the cancer and non-cancer endpoints



Pole Line Ramp Structure Connection Project  
TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Location	Sample ID:	Sample Depth (ft):	Semi-Volatile Organic Compounds (SVOCs) (µg/kg)																								
			EPA Method 8270C																								
			Carbazole	Aniline	Phenol	2,4-Dinitrotoluene	Pentachlorophenol	Pyrene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	2-Chlorophenol	Benzo (g,h,i) perylene	Benzo (a) pyrene	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl)ether	Bis(2-ethylhexyl)phthalate	4-Bromophenyl phenyl ether	Butyl benzyl phthalate	4-Chloroaniline	1,4-Dichlorobenzene	2-Chloronaphthalene	
Adjacent to Bike Path	DB1-A	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DB1-B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DB2-A	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DB2-B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B1-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B1-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B2-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B2-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B2-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B3-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B3-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B3-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B4-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B4-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B4-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B5-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B5-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B5-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
B6-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
B6-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
B6-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
<b>Reporting Limit**</b>			3000.0	3000.0	10000.0	3000.0	10000.0	3000.0	3000.0	3000.0	3000.0	3000.0	10000.0	10000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	2000.0	3000.0
EPA Region 9 RSLs	Industrial		--	400,000	25,000,000,000	7,400	4,000	23,000,000	--	230,000,000	21,000	21,000	210,000	5,800,000	--	2,100	--	--	1,000	--	160,000	--	1,200,000	11,000	11,000	--	
DTSC-SLs^	Commercial		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RWQCB ESLs	Commercial/Industrial		--	--	350,000	11.0	4.0	23,000	--	230,000	2.9	2.9	29.0	5,800	--	0.29	--	--	0.53	16.0	160	--	--	--	13.0	--	

Notes  
 - B1-A = Boring Location, first sample collected from boring  
 - mg/kg = milligrams per kilogram  
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 - EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels  
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 \* Values are for salts  
 \*\* Reporting Limit may vary depending upon analytical results, see full analytical results report  
 ^ Value indicated is the lower of the cancer and non-cancer endpoints

**Pole Line Ramp Structure Connection Project  
TABULATED SOIL SAMPLE ANALYTICAL RESULTS**

Location	Sample ID:	Sample Depth (ft):	Semi-Volatile Organic Compounds (SVOCs) (µg/kg)																							
			EPA Method 8270C																							
			4-Chlorophenyl phenyl ether	Chrysene	Dibenz (a,h) anthracene	Dibenzofuran	Di-n-butyl phthalate	1,2-Dichlorobenzene	1,3-Dichlorobenzene	N-Nitrosodi-n-propylamine	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol	Dimethyl phthalate	4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2,6-Dinitrotoluene	1,2,4-Trichlorobenzene	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachlorothane	Indeno (1,2,3-cd) pyrene
Adjacent to Bike Path	DB1-A	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	DB1-B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DB2-A	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DB2-B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B1-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B1-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B2-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B2-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B2-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B3-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B3-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B3-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B4-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B4-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B4-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B5-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B5-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	B5-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B6-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
B6-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
B6-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
<b>Reporting Limit**</b>			3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	10000.0	3000.0	10000.0	3000.0	10000.0	10000.0	10000.0	3000.0	3000.0	3000.0	3000.0	15000.0	3000.0	10000.0	3000.0	3000.0
<b>EPA Region 9 RSLs</b>	<b>Industrial</b>	--	2,100,000	2,100	1,000,000	--	9,300,000	--	330	2,500,000	660,000,000	16,000,000	--	--	1,600,000	1,500	110,000	8,200,000	30,000,000	30,000,000	960	5,300	7,500	8,000	21,000	
<b>DTSC-SLs^</b>	<b>Commercial</b>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>RWQCB ESLs</b>	<b>Commercial/Industrial</b>	--	260	0.29	--	--	11,000	--	--	3,500	660,000	23,000	--	--	2,300	--	110	--	30,000	30,000	1.5	42.0	--	57.0	2.9	

**Notes**  
- B1-A = Boring Location, first sample collected from boring  
- mg/kg = milligrams per kilogram  
- ug/kg = micrograms per kilogram  
- EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels  
- NA: Not Analyzed  
- ND: not detected at or above reporting limit  
- DTSC-SLs: California Department of Toxic Substance Control Screening Levels  
- RWQCB ESLs: California Regional Water Quality Control Board, Environmental Screening Levels  
\* Values are for salts  
\*\* Reporting Limit may vary depending upon analytical results, see full analytical results report  
^ Value indicated is the lower of the cancer and non-cancer endpoints

**Pole Line Ramp Structure Connection Project  
TABULATED SOIL SAMPLE ANALYTICAL RESULTS**

Location	Sample ID:	Sample Depth (ft):	Semi-Volatile Organic Compounds (SVOCs) (µg/kg)																						
			EPA Method 8270C																						
			Isophorone	4-Chloro-3-methylphenol	2-Methylphenol	4-Methylphenol	Naphthalene	2-Nitroaniline	3-Nitroaniline	4-Nitroaniline	Nitrobenzene	2-Nitrophenol	N-Nitrosodimethylamine	1-Methylnaphthalene	2-Methylnaphthalene	N-Nitrosodiphenylamine	2,3,5,6-Tetrachlorophenol	2,3,4,6-Tetrachlorophenol	Phenanthrene	Azobenzene	2,4,5-Trichlorophenol	Pyridine	2,4,6-Trichlorophenol	4-Nitrophenol	Acenaphthene
Adjacent to Bike Path	DB1-A	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	DB1-B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	DB2-A	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	DB2-B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B1-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B1-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B2-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B2-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B2-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B3-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B3-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B3-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B4-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B4-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B4-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B5-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B5-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B5-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	B6-A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
B6-B	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
B6-C	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
<b>Reporting Limit**</b>			3000.0	10000.0	10000.0	10000.0	3000.0	3000.0	3000.0	3000.0	10000.0	10000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	3000.0	10000.0	3000.0	10000.0	10000.0	3000.0	
<b>EPA Region 9 RSLs</b>	<b>Industrial</b>		2,400,000	--	--	--	17,000	8,000,000	--	110,000	22,000	--	34.0	73,000	3,000,000	470,000	--	25,000,000	--	26,000	82,000,000	--	1,200,000	--	45,000,000
<b>DTSC-SLs^</b>	<b>Commercial</b>		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21,000	--	--	
<b>RWQCB ESLs</b>	<b>Commercial/Industrial</b>		--	--	--	--	14.0	--	--	--	--	--	--	--	3,000	--	--	--	--	--	120,000	--	47.0	--	45,000

**Notes**  
- B1-A = Boring Location, first sample collected from boring  
- mg/kg = milligrams per kilogram  
- ug/kg = micrograms per kilogram  
- EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels  
- NA: Not Analyzed  
- ND: not detected at or above reporting limit  
- DTSC-SLs: California Department of Toxic Substance Control Screening Levels  
- RWQCB ESLs: California Regional Water Quality Control Board, Environmental Screening Levels  
\* Values are for salts  
\*\* Reporting Limit may vary depending upon analytical results, see full analytical results report  
^ Value indicated is the lower of the cancer and non-cancer endpoints

Table 4

Summary of Analytical Results - Pole Line Ramp Structure Connection Project

Location	Sample ID:	Sample Depth (ft):	Title 22 Metals (mg/kg)											TPH (Extractable Petroleum Hydrocarbons) (mg/kg)		
			EPA Method 6010B											EPA Method 7470/747	EPA Method 8015C	
			Arsenic	Barium	Chromium	Cobalt	Copper	WET Lead mg/l	Lead	Nickel	Vanadium	Zinc	Mercury	C13-C28 (DRO)	C29-C40 (MORO)	
Adjacent to Bike Path	DB1-A	2.0	6.7	190	92	23	48	ND	39	180	81	83	0.15	ND	ND	
	DB1-B	6.0	ND	200	92	24	49	ND	ND	200	89	84	ND	ND	ND	
	DB2-A	2.0	ND	190	98	26	49	ND	ND	210	88	83	0.14	ND	ND	
	DB2-B	6.0	8.2	210	93	24	52	ND	28	190	91	96	ND	ND	ND	
	B1-A	0.5	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	ND	
	B1-B	2.0	ND	NA	NA	NA	NA	6	99.0	NA	NA	NA	NA	ND	ND	
	B2-A	0.5	ND	NA	NA	NA	NA	2.9	69	NA	NA	NA	NA	10	140	
	B2-B	2.0	ND	NA	NA	NA	NA	1.9	70	NA	NA	NA	NA	ND	31	
	B2-C	3.0	ND	NA	NA	NA	NA	1.1	60	NA	NA	NA	NA	ND	80	
	B3-A	0.5	ND	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	13	140	
	B3-B	2.0	ND	NA	NA	NA	NA	ND	64	NA	NA	NA	NA	17	130	
	B3-C	3.0	ND	NA	NA	NA	NA	NA	29	NA	NA	NA	NA	ND	86	
	B4-A	0.5	ND	NA	NA	NA	NA	15	450	NA	NA	NA	NA	170	2600	
	B4-B	2.0	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	ND	
	B4-C	3.0	ND	NA	NA	NA	NA	NA	32	NA	NA	NA	NA	ND	37	
	B5-A	0.5	ND	NA	NA	NA	NA	3	84	NA	NA	NA	NA	15	310	
	B5-B	2.0	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	ND	
	B5-C	3.0	ND	NA	NA	NA	NA	NA	31	NA	NA	NA	NA	ND	ND	
	B6-A	0.5	ND	NA	NA	NA	NA	2.9	96	NA	NA	NA	NA	15	180	
	B6-B	2.0	ND	NA	NA	NA	NA	NA	37	NA	NA	NA	NA	ND	ND	
B6-C	3.0	ND	NA	NA	NA	NA	NA	24	NA	NA	NA	NA	ND	22		
Reporting Limit**			5.00	1.00	2.00	2.00	1.00	0.1 mg/l	3.00	2.00	5.00	1.00	5.00	10.0	10.0	
EPA Region 9 RSLs	Industrial		3.0	220,000	1,800,000*	350	47,000	5,800	800	22,000*	5,800	350,000	5,800	420+	420+	
DTSC-SLs^	Commercial		0.36	--	170,000*	--	--	--	320	3,100	1,000	--	--	--	--	
RWQCB ESLs	Commercial/Industrial		0.31	220,000	1,800,000	350	47,000		320	11,000	5,800	350,000	5,800	1,100	140,000	
	Construction Worker Exposure		0.98	3,000	530,000	28	14,000		160	86	470	110,000	1,800	880	32,000	

Notes

- B1-A = Boring Location, first sample collected from boring
- mg/kg = milligrams per kilogram
- ug/kg = micrograms per kilogram
- EPA Region 9 RSLs: US Environmental Protection Agency, Region 9, Regional Screening Levels
- NA: Not Analyzed
- ND: not detected at or above reporting limit
- DTSC-SLs: California Department of Toxic Substance Control Screening Levels
- RWQCB ESLs: California Regional Water Quality Control Board, Environmental Screening Levels
- \* Values are for salts
- \*\* Reporting Limit may vary depending upon analytical results, see full analytical results report
- + RSL is dependent on aromatic/aliphatic component concentrations and ranges from 420 mg/kg (aromatic low) to 3,500,000 mg/kg (aliphatic-high)
- ^ Value indicated is the lower of the cancer and non-cancer endpoints

# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

Davis, California

### APPENDIX C

Laboratory Analytical Reports





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

14 November 2018

Laura Long  
Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento, CA -  
RE: Pole Line Ramp

Enclosed are the results of analyses for samples received by the laboratory on 11/07/18 09:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kris Kubota  
Project Manager Assistant



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

Blackburn Consulting-West Sac.  
 2491 Boatman Ave.  
 West Sacramento CA, -

Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

**Reported:**  
 11/14/18 09:25

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-A	T183338-01	Soil	11/05/18 10:25	11/07/18 09:45
B1-B	T183338-02	Soil	11/05/18 11:05	11/07/18 09:45
B2-A	T183338-03	Soil	11/05/18 11:40	11/07/18 09:45
B2-B	T183338-04	Soil	11/05/18 11:50	11/07/18 09:45
B2-C	T183338-05	Soil	11/05/18 12:00	11/07/18 09:45
B3-A	T183338-06	Soil	11/05/18 12:30	11/07/18 09:45
B3-B	T183338-07	Soil	11/05/18 12:35	11/07/18 09:45
B3-C	T183338-08	Soil	11/05/18 13:00	11/07/18 09:45
B4-A	T183338-09	Soil	11/05/18 13:10	11/07/18 09:45
B4-B	T183338-10	Soil	11/05/18 13:20	11/07/18 09:45
B4-C	T183338-11	Soil	11/05/18 13:35	11/07/18 09:45
B5-A	T183338-12	Soil	11/05/18 13:50	11/07/18 09:45
B5-B	T183338-13	Soil	11/05/18 14:05	11/07/18 09:45
B5-C	T183338-14	Soil	11/05/18 14:20	11/07/18 09:45
B6-A	T183338-15	Soil	11/06/18 07:10	11/07/18 09:45
B6-B	T183338-16	Soil	11/06/18 07:15	11/07/18 09:45
B6-C	T183338-17	Soil	11/06/18 07:25	11/07/18 09:45
DB1-A	T183338-18	Soil	11/06/18 07:45	11/07/18 09:45
DB1-B	T183338-19	Soil	11/06/18 08:10	11/07/18 09:45
DB2-A	T183338-20	Soil	11/06/18 09:05	11/07/18 09:45
DB2-B	T183338-21	Soil	11/06/18 09:20	11/07/18 09:45

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.*

Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**DETECTIONS SUMMARY**

**Sample ID:** B1-A **Laboratory ID:** T183338-01

No Results Detected

**Sample ID:** B1-B **Laboratory ID:** T183338-02

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Lead	99	3.0		mg/kg	EPA 6010b	

**Sample ID:** B2-A **Laboratory ID:** T183338-03

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	10	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	140	10		mg/kg	EPA 8015B	
Lead	69	3.0		mg/kg	EPA 6010b	

**Sample ID:** B2-B **Laboratory ID:** T183338-04

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	31	10		mg/kg	EPA 8015B	
Lead	70	3.0		mg/kg	EPA 6010b	

**Sample ID:** B2-C **Laboratory ID:** T183338-05

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	80	10		mg/kg	EPA 8015B	
Lead	60	3.0		mg/kg	EPA 6010b	

SunStar Laboratories, Inc.



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Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**Sample ID:** B3-A **Laboratory ID:** T183338-06

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	13	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	140	10	mg/kg	EPA 8015B	
Lead	16	3.0	mg/kg	EPA 6010b	

**Sample ID:** B3-B **Laboratory ID:** T183338-07

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	17	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	130	10	mg/kg	EPA 8015B	
Lead	64	3.0	mg/kg	EPA 6010b	
pH	6.8	0.1	pH Units	EPA 9045B	

**Sample ID:** B3-C **Laboratory ID:** T183338-08

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C29-C40 (MORO)	86	10	mg/kg	EPA 8015B	
Lead	29	3.0	mg/kg	EPA 6010b	

**Sample ID:** B4-A **Laboratory ID:** T183338-09

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
C13-C28 (DRO)	170	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	2600	10	mg/kg	EPA 8015B	
Lead	250	3.0	mg/kg	EPA 6010b	

**Sample ID:** B4-B **Laboratory ID:** T183338-10

No Results Detected

SunStar Laboratories, Inc.



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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**Sample ID:** B4-C

**Laboratory ID:** T183338-11

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Lead	32	3.0		mg/kg	EPA 6010b	

**Sample ID:** B5-A

**Laboratory ID:** T183338-12

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	15	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	310	10		mg/kg	EPA 8015B	
Lead	84	3.0		mg/kg	EPA 6010b	

**Sample ID:** B5-B

**Laboratory ID:** T183338-13

No Results Detected

**Sample ID:** B5-C

**Laboratory ID:** T183338-14

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Lead	31	3.0		mg/kg	EPA 6010b	

**Sample ID:** B6-A

**Laboratory ID:** T183338-15

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C13-C28 (DRO)	15	10		mg/kg	EPA 8015B	
C29-C40 (MORO)	180	10		mg/kg	EPA 8015B	
Lead	96	3.0		mg/kg	EPA 6010b	

**Sample ID:** B6-B

**Laboratory ID:** T183338-16

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Lead	37	3.0		mg/kg	EPA 6010b	

SunStar Laboratories, Inc.



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Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**Sample ID:** B6-C **Laboratory ID:** T183338-17

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	22	10		mg/kg	EPA 8015B	
Lead	24	3.0		mg/kg	EPA 6010b	

**Sample ID:** DB1-A **Laboratory ID:** T183338-18

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Arsenic	6.7	5.0		mg/kg	EPA 6010b	
Barium	190	1.0		mg/kg	EPA 6010b	
Chromium	92	2.0		mg/kg	EPA 6010b	
Cobalt	23	2.0		mg/kg	EPA 6010b	
Copper	48	1.0		mg/kg	EPA 6010b	
Lead	39	3.0		mg/kg	EPA 6010b	
Nickel	180	2.0		mg/kg	EPA 6010b	
Vanadium	81	5.0		mg/kg	EPA 6010b	
Zinc	83	1.0		mg/kg	EPA 6010b	
Mercury	0.15	0.10		mg/kg	EPA 7471A Soil	

**Sample ID:** DB1-B **Laboratory ID:** T183338-19

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	200	1.0		mg/kg	EPA 6010b	
Chromium	92	2.0		mg/kg	EPA 6010b	
Cobalt	24	2.0		mg/kg	EPA 6010b	
Copper	49	1.0		mg/kg	EPA 6010b	
Nickel	200	2.0		mg/kg	EPA 6010b	
Vanadium	89	5.0		mg/kg	EPA 6010b	
Zinc	84	1.0		mg/kg	EPA 6010b	

**Sample ID:** DB2-A **Laboratory ID:** T183338-20

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	190	1.0		mg/kg	EPA 6010b	
Chromium	98	2.0		mg/kg	EPA 6010b	
Cobalt	26	2.0		mg/kg	EPA 6010b	

SunStar Laboratories, Inc.



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Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

Sample ID: DB2-A

Laboratory ID: T183338-20

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Copper	49	1.0		mg/kg	EPA 6010b	
Nickel	210	2.0		mg/kg	EPA 6010b	
Vanadium	88	5.0		mg/kg	EPA 6010b	
Zinc	83	1.0		mg/kg	EPA 6010b	
Mercury	0.14	0.10		mg/kg	EPA 7471A Soil	

Sample ID: DB2-B

Laboratory ID: T183338-21

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Arsenic	8.2	5.0		mg/kg	EPA 6010b	
Barium	210	1.0		mg/kg	EPA 6010b	
Chromium	93	2.0		mg/kg	EPA 6010b	
Cobalt	24	2.0		mg/kg	EPA 6010b	
Copper	52	1.0		mg/kg	EPA 6010b	
Lead	28	3.0		mg/kg	EPA 6010b	
Nickel	190	2.0		mg/kg	EPA 6010b	
Vanadium	91	5.0		mg/kg	EPA 6010b	
Zinc	96	1.0		mg/kg	EPA 6010b	
pH	7.2	0.1		pH Units	EPA 9045B	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B1-A**  
**T183338-01 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		100 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
Lead	ND	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	

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Blackburn Consulting-West Sac.  
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West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B1-A**  
**T183338-01 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant



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**B1-A**  
**T183338-01 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	1000	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		68.5 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		88.5 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		66.9 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		77.2 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		90.4 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		114 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**B1-B**  
**T183338-02 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		107 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>99</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	

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2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B1-B**  
**T183338-02 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	

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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B1-B**  
**T183338-02 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	1000	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		72.0 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		81.9 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		78.2 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		88.2 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		91.7 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		94.5 %	29.1-130		"	"	"	"	

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West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B2-A**  
**T183338-03 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
<b>C13-C28 (DRO)</b>	<b>10</b>	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>140</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		109 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>69</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Phenol	ND	10000	"	"	"	"	"	"	R-07
Aniline	ND	3000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	10000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	3000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	10000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthene	ND	3000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	3000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	10000	"	"	"	"	"	"	R-07
Pyrene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	3000	"	"	"	"	"	"	R-07
Anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	10000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	3000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	3000	"	"	"	"	"	"	R-07

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Kris Kubota, Project Manager Assistant

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2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B2-A**  
**T183338-03 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	3000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	3000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Chrysene	ND	3000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	3000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	3000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	3000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	10000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	10000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	3000	"	"	"	"	"	"	R-07
Fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Fluorene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	10000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	3000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	3000	"	"	"	"	"	"	R-07
Isophorone	ND	3000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	10000	"	"	"	"	"	"	R-07

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Kris Kubota, Project Manager Assistant



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**B2-A**  
**T183338-03 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	10000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	10000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	3000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
Phenanthrene	ND	3000	"	"	"	"	"	"	R-07
Azobenzene	ND	3000	"	"	"	"	"	"	R-07
Pyridine	ND	3000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		73.5 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		85.2 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		78.8 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		95.5 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		86.3 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		106 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

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West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B2-B**  
**T183338-04 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>31</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		104 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>70</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Phenol	ND	10000	"	"	"	"	"	"	R-07
Aniline	ND	3000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	10000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	3000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthene	ND	3000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	3000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	10000	"	"	"	"	"	"	R-07
Pyrene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	3000	"	"	"	"	"	"	R-07
Anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	10000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	3000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	3000	"	"	"	"	"	"	R-07

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Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
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**B2-B**  
**T183338-04 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	3000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	3000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Chrysene	ND	3000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	3000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	3000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	3000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	10000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	10000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	3000	"	"	"	"	"	"	R-07
Fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Fluorene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	10000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	3000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	3000	"	"	"	"	"	"	R-07
Isophorone	ND	3000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	10000	"	"	"	"	"	"	R-07

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**B2-B**  
**T183338-04 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	10000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	10000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	3000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
Phenanthrene	ND	3000	"	"	"	"	"	"	R-07
Azobenzene	ND	3000	"	"	"	"	"	"	R-07
Pyridine	ND	3000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		81.6 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		89.3 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		76.5 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		96.3 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		82.1 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		91.6 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant



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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**B2-C**  
**T183338-05 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>80</b>	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		108 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>60</b>	3.0	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B3-A**  
**T183338-06 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
<b>C13-C28 (DRO)</b>	<b>13</b>	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>140</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		65.2 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>16</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Phenol	ND	10000	"	"	"	"	"	"	R-07
Aniline	ND	3000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	10000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	3000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthene	ND	3000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	3000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	10000	"	"	"	"	"	"	R-07
Pyrene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	3000	"	"	"	"	"	"	R-07
Anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	10000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	3000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	3000	"	"	"	"	"	"	R-07

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West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B3-A**  
**T183338-06 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	3000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	3000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Chrysene	ND	3000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	3000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	3000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	3000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	10000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	10000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	3000	"	"	"	"	"	"	R-07
Fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Fluorene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	10000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	3000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	3000	"	"	"	"	"	"	R-07
Isophorone	ND	3000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	10000	"	"	"	"	"	"	R-07

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**B3-A**  
**T183338-06 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	10000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	10000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	3000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
Phenanthrene	ND	3000	"	"	"	"	"	"	R-07
Azobenzene	ND	3000	"	"	"	"	"	"	R-07
Pyridine	ND	3000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		65.2 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		80.1 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		74.8 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		84.4 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		88.2 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		86.0 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B3-B**  
**T183338-07 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
<b>C13-C28 (DRO)</b>	<b>17</b>	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>130</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		127 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>64</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Phenol	ND	10000	"	"	"	"	"	"	R-07
Aniline	ND	3000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	10000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	3000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthene	ND	3000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	3000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	10000	"	"	"	"	"	"	R-07
Pyrene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	3000	"	"	"	"	"	"	R-07
Anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	10000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	3000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	3000	"	"	"	"	"	"	R-07

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Kris Kubota, Project Manager Assistant

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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B3-B**  
**T183338-07 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	3000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	3000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Chrysene	ND	3000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	3000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	3000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	3000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	10000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	10000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	3000	"	"	"	"	"	"	R-07
Fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Fluorene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	10000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	3000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	3000	"	"	"	"	"	"	R-07
Isophorone	ND	3000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	10000	"	"	"	"	"	"	R-07

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**B3-B**  
**T183338-07 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	10000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	10000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	3000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
Phenanthrene	ND	3000	"	"	"	"	"	"	R-07
Azobenzene	ND	3000	"	"	"	"	"	"	R-07
Pyridine	ND	3000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		76.2 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		86.8 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		74.7 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		89.2 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		86.7 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		95.6 %	29.1-130		"	"	"	"	

**Conventional Chemistry Parameters by APHA/EPA/ASTM Methods**

<b>pH</b>	<b>6.8</b>	0.1	pH Units	1	8110714	11/07/18	11/07/18	EPA 9045B	
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**B3-C**  
**T183338-08 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>86</b>	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		114 %		65-135	"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>29</b>	3.0	"	"	"	"	"	"	

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**B4-A**  
**T183338-09 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
<b>C13-C28 (DRO)</b>	<b>170</b>	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>2600</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		110 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>250</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	15000	ug/kg	50	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Aniline	ND	15000	"	"	"	"	"	"	R-07
Phenol	ND	50000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	50000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	15000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	50000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	15000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	15000	"	"	"	"	"	"	R-07
Acenaphthene	ND	15000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	50000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	15000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	50000	"	"	"	"	"	"	R-07
Pyrene	ND	15000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	15000	"	"	"	"	"	"	R-07
Anthracene	ND	15000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	15000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	15000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	15000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	50000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	15000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	15000	"	"	"	"	"	"	R-07

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 West Sacramento CA, -

Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
 11/14/18 09:25

**B4-A**  
**T183338-09 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	15000	ug/kg	50	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	15000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	15000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	15000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	15000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	15000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	15000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	15000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	15000	"	"	"	"	"	"	R-07
Chrysene	ND	15000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	15000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	15000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	15000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	15000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	50000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	15000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	50000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	15000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	50000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	50000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	50000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	15000	"	"	"	"	"	"	R-07
Fluoranthene	ND	15000	"	"	"	"	"	"	R-07
Fluorene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	75000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	50000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	15000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	15000	"	"	"	"	"	"	R-07
Isophorone	ND	15000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	50000	"	"	"	"	"	"	R-07

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**B4-A**  
**T183338-09 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	50000	ug/kg	50	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	15000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	15000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	50000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	50000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	15000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	15000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	15000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	15000	"	"	"	"	"	"	R-07
Phenanthrene	ND	15000	"	"	"	"	"	"	R-07
Azobenzene	ND	15000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	50000	"	"	"	"	"	"	R-07
Pyridine	ND	15000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	50000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		85.0 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		85.5 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		78.5 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		89.5 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		84.5 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		88.5 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B4-B**  
**T183338-10 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		97.9 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
Lead	ND	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B4-B**  
**T183338-10 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B4-B**  
**T183338-10 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	1000	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		49.1 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		57.9 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		49.2 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		63.9 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		87.4 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		91.0 %	29.1-130		"	"	"	"	

SunStar Laboratories, Inc.



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**B4-C**  
**T183338-11 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		116 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>32</b>	3.0	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant



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**B5-A**  
**T183338-12 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
<b>C13-C28 (DRO)</b>	<b>15</b>	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>310</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		118 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>84</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Phenol	ND	10000	"	"	"	"	"	"	R-07
Aniline	ND	3000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	10000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	3000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthene	ND	3000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	3000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	10000	"	"	"	"	"	"	R-07
Pyrene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	3000	"	"	"	"	"	"	R-07
Anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	10000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	3000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	3000	"	"	"	"	"	"	R-07

SunStar Laboratories, Inc.

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Kris Kubota, Project Manager Assistant



Blackburn Consulting-West Sac.  
 2491 Boatman Ave.  
 West Sacramento CA, -

Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
 11/14/18 09:25

**B5-A**  
**T183338-12 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	3000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	3000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Chrysene	ND	3000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	3000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	3000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	3000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	10000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	10000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	3000	"	"	"	"	"	"	R-07
Fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Fluorene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	10000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	3000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	3000	"	"	"	"	"	"	R-07
Isophorone	ND	3000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	10000	"	"	"	"	"	"	R-07

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Kris Kubota, Project Manager Assistant



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**B5-A**  
**T183338-12 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	10000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	10000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	3000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
Phenanthrene	ND	3000	"	"	"	"	"	"	R-07
Azobenzene	ND	3000	"	"	"	"	"	"	R-07
Pyridine	ND	3000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		64.0 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		67.7 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		65.3 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		75.2 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		70.1 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		66.6 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B5-B**  
**T183338-13 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		113 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
Lead	ND	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant

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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B5-B**  
**T183338-13 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	

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**B5-B**  
**T183338-13 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	1000	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		56.1 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		67.3 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		59.4 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		77.6 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		86.3 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		88.1 %	29.1-130		"	"	"	"	

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**B5-C**  
**T183338-14 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		107 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>31</b>	3.0	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant

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West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B6-A**  
**T183338-15 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
<b>C13-C28 (DRO)</b>	<b>15</b>	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>180</b>	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		116 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>96</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Phenol	ND	10000	"	"	"	"	"	"	R-07
Aniline	ND	3000	"	"	"	"	"	"	R-07
2-Chlorophenol	ND	10000	"	"	"	"	"	"	R-07
1,4-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodi-n-propylamine	ND	3000	"	"	"	"	"	"	R-07
1,2,4-Trichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
4-Chloro-3-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
1-Methylnaphthalene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthene	ND	3000	"	"	"	"	"	"	R-07
4-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrotoluene	ND	3000	"	"	"	"	"	"	R-07
Pentachlorophenol	ND	10000	"	"	"	"	"	"	R-07
Pyrene	ND	3000	"	"	"	"	"	"	R-07
Acenaphthylene	ND	3000	"	"	"	"	"	"	R-07
Anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (a) anthracene	ND	3000	"	"	"	"	"	"	R-07
Benzo (b) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (k) fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Benzo (g,h,i) perylene	ND	10000	"	"	"	"	"	"	R-07
Benzo (a) pyrene	ND	3000	"	"	"	"	"	"	R-07
Benzyl alcohol	ND	3000	"	"	"	"	"	"	R-07

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Kris Kubota, Project Manager Assistant

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Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B6-A**  
**T183338-15 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	3000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Bis(2-chloroethyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-chloroisopropyl)ether	ND	3000	"	"	"	"	"	"	R-07
Bis(2-ethylhexyl)phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Bromophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Butyl benzyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4-Chloroaniline	ND	3000	"	"	"	"	"	"	R-07
2-Chloronaphthalene	ND	3000	"	"	"	"	"	"	R-07
4-Chlorophenyl phenyl ether	ND	3000	"	"	"	"	"	"	R-07
Chrysene	ND	3000	"	"	"	"	"	"	R-07
Dibenz (a,h) anthracene	ND	3000	"	"	"	"	"	"	R-07
Dibenzofuran	ND	3000	"	"	"	"	"	"	R-07
Di-n-butyl phthalate	ND	3000	"	"	"	"	"	"	R-07
1,2-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
1,3-Dichlorobenzene	ND	3000	"	"	"	"	"	"	R-07
2,4-Dichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Diethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
2,4-Dimethylphenol	ND	10000	"	"	"	"	"	"	R-07
Dimethyl phthalate	ND	3000	"	"	"	"	"	"	R-07
4,6-Dinitro-2-methylphenol	ND	10000	"	"	"	"	"	"	R-07
2,4-Dinitrophenol	ND	10000	"	"	"	"	"	"	R-07
2,6-Dinitrotoluene	ND	10000	"	"	"	"	"	"	R-07
Di-n-octyl phthalate	ND	3000	"	"	"	"	"	"	R-07
Fluoranthene	ND	3000	"	"	"	"	"	"	R-07
Fluorene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorobenzene	ND	15000	"	"	"	"	"	"	R-07
Hexachlorobutadiene	ND	3000	"	"	"	"	"	"	R-07
Hexachlorocyclopentadiene	ND	10000	"	"	"	"	"	"	R-07
Hexachloroethane	ND	3000	"	"	"	"	"	"	R-07
Indeno (1,2,3-cd) pyrene	ND	3000	"	"	"	"	"	"	R-07
Isophorone	ND	3000	"	"	"	"	"	"	R-07
2-Methylphenol	ND	10000	"	"	"	"	"	"	R-07

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Kris Kubota, Project Manager Assistant





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**B6-A**  
**T183338-15 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	10000	ug/kg	10	8110715	11/07/18	11/08/18	EPA 8270C	R-07
Naphthalene	ND	3000	"	"	"	"	"	"	R-07
2-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
3-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
4-Nitroaniline	ND	3000	"	"	"	"	"	"	R-07
Nitrobenzene	ND	10000	"	"	"	"	"	"	R-07
2-Nitrophenol	ND	10000	"	"	"	"	"	"	R-07
N-Nitrosodimethylamine	ND	3000	"	"	"	"	"	"	R-07
N-Nitrosodiphenylamine	ND	3000	"	"	"	"	"	"	R-07
2,3,5,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
2,3,4,6-Tetrachlorophenol	ND	3000	"	"	"	"	"	"	R-07
Phenanthrene	ND	3000	"	"	"	"	"	"	R-07
Azobenzene	ND	3000	"	"	"	"	"	"	R-07
Pyridine	ND	3000	"	"	"	"	"	"	R-07
2,4,5-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
2,4,6-Trichlorophenol	ND	10000	"	"	"	"	"	"	R-07
Surrogate: 2-Fluorophenol		56.1 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		67.0 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		58.8 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		78.7 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		75.3 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		75.4 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**B6-B**  
**T183338-16 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		93.2 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>37</b>	3.0	"	"	"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270C**

Carbazole	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Phenol	ND	1000	"	"	"	"	"	"	
Aniline	ND	300	"	"	"	"	"	"	
2-Chlorophenol	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	300	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	300	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	300	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	1000	"	"	"	"	"	"	
1-Methylnaphthalene	ND	300	"	"	"	"	"	"	
2-Methylnaphthalene	ND	300	"	"	"	"	"	"	
Acenaphthene	ND	300	"	"	"	"	"	"	
4-Nitrophenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	300	"	"	"	"	"	"	
Pentachlorophenol	ND	1000	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Benzyl alcohol	ND	300	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant

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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/14/18 09:25

**B6-B**  
**T183338-16 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bis(2-chloroethoxy)methane	ND	300	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Bis(2-chloroethyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	300	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	300	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	300	"	"	"	"	"	"	
4-Chloroaniline	ND	300	"	"	"	"	"	"	
2-Chloronaphthalene	ND	300	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Dibenzofuran	ND	300	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	300	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	300	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	300	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	1000	"	"	"	"	"	"	
Diethyl phthalate	ND	300	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1000	"	"	"	"	"	"	
Dimethyl phthalate	ND	300	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	1000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	1000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Hexachlorobenzene	ND	1500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	300	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1000	"	"	"	"	"	"	
Hexachloroethane	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Isophorone	ND	300	"	"	"	"	"	"	
2-Methylphenol	ND	1000	"	"	"	"	"	"	

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**B6-B**  
**T183338-16 (Soil)**

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

**Semivolatile Organic Compounds by EPA Method 8270C**

4-Methylphenol	ND	1000	ug/kg	1	8110715	11/07/18	11/08/18	EPA 8270C	
Naphthalene	ND	300	"	"	"	"	"	"	
2-Nitroaniline	ND	300	"	"	"	"	"	"	
3-Nitroaniline	ND	300	"	"	"	"	"	"	
4-Nitroaniline	ND	300	"	"	"	"	"	"	
Nitrobenzene	ND	1000	"	"	"	"	"	"	
2-Nitrophenol	ND	1000	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	300	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	300	"	"	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Azobenzene	ND	300	"	"	"	"	"	"	
Pyridine	ND	300	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	1000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	1000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		58.8 %	15-121		"	"	"	"	
Surrogate: Phenol-d6		69.7 %	24-113		"	"	"	"	
Surrogate: Nitrobenzene-d5		58.7 %	21.3-119		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		71.2 %	32.4-102		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		81.0 %	18.1-105		"	"	"	"	
Surrogate: Terphenyl-d14		92.8 %	29.1-130		"	"	"	"	

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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**B6-C**  
**T183338-17 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>22</b>	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		115 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Arsenic	ND	5.0	mg/kg	1	8110803	11/08/18	11/08/18	EPA 6010b	
<b>Lead</b>	<b>24</b>	3.0	"	"	"	"	"	"	

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Kris Kubota, Project Manager Assistant



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**DB1-A**  
**T183338-18 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		104 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	8110821	11/08/18	11/09/18	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
<b>Arsenic</b>	<b>6.7</b>	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>190</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>92</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>23</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>48</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>39</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>180</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>81</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>83</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	<b>0.15</b>	0.10	mg/kg	1	8110719	11/07/18	11/08/18	EPA 7471A Soil	
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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**DB1-A**  
**T183338-18 (Soil)**

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

**Volatile Organic Compounds by EPA Method 8260B**

**M-02**

Benzene	ND	4.9	ug/kg	1	8110722	11/07/18	11/08/18	EPA 8260B	
Toluene	ND	4.9	"	"	"	"	"	"	
Ethylbenzene	ND	4.9	"	"	"	"	"	"	
m,p-Xylene	ND	9.9	"	"	"	"	"	"	
o-Xylene	ND	4.9	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	20	"	"	"	"	"	"	
Tert-butyl alcohol	ND	49	"	"	"	"	"	"	
Di-isopropyl ether	ND	20	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	20	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>96.4 %</i>	<i>83.2-113</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>91.8 %</i>	<i>82.9-116</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>		<i>120 %</i>	<i>80.4-132</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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**DB1-B**  
**T183338-19 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		112 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	8110821	11/08/18	11/09/18	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>200</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>92</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>24</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>49</b>	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>200</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>89</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>84</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8110719	11/07/18	11/08/18	EPA 7471A Soil	
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Kris Kubota, Project Manager Assistant



Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**DB1-B**  
**T183338-19 (Soil)**

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

**Volatile Organic Compounds by EPA Method 8260B**

**M-02**

Benzene	ND	5.0	ug/kg	1	8110722	11/07/18	11/12/18	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	20	"	"	"	"	"	"	
Tert-butyl alcohol	ND	50	"	"	"	"	"	"	
Di-isopropyl ether	ND	20	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	20	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>91.0 %</i>	<i>83.2-113</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>92.4 %</i>	<i>82.9-116</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>		<i>114 %</i>	<i>80.4-132</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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**DB2-A**  
**T183338-20 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110721	11/07/18	11/09/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		110 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	8110821	11/08/18	11/09/18	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>190</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>98</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>26</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>49</b>	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>210</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>88</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>83</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	0.14	0.10	mg/kg	1	8110719	11/07/18	11/08/18	EPA 7471A Soil	
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Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**DB2-A**  
**T183338-20 (Soil)**

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

**Volatile Organic Compounds by EPA Method 8260B**

**M-02**

Benzene	ND	5.0	ug/kg	1	8110722	11/07/18	11/12/18	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	20	"	"	"	"	"	"	
Tert-butyl alcohol	ND	50	"	"	"	"	"	"	
Di-isopropyl ether	ND	20	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	20	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		88.4 %	83.2-113		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		85.4 %	82.9-116		"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		126 %	80.4-132		"	"	"	"	

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Kris Kubota, Project Manager Assistant

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Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**DB2-B**  
**T183338-21 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8110723	11/07/18	11/08/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		<i>103 %</i>	<i>65-135</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	8110821	11/08/18	11/09/18	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
<b>Arsenic</b>	<b>8.2</b>	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>210</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>93</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>24</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>52</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>28</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>190</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>91</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>96</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8110719	11/07/18	11/08/18	EPA 7471A Soil	
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**DB2-B**  
**T183338-21 (Soil)**

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

**Volatile Organic Compounds by EPA Method 8260B**

**M-02**

Benzene	ND	5.0	ug/kg	1	8110722	11/07/18	11/13/18	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	20	"	"	"	"	"	"	
Tert-butyl alcohol	ND	50	"	"	"	"	"	"	
Di-isopropyl ether	ND	20	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	20	"	"	"	"	"	"	
Surrogate: Toluene-d8		89.6 %	83.2-113		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.8 %	82.9-116		"	"	"	"	
Surrogate: Dibromofluoromethane		116 %	80.4-132		"	"	"	"	

**Conventional Chemistry Parameters by APHA/EPA/ASTM Methods**

<b>pH</b>	<b>7.2</b>	0.1	pH Units	1	8110714	11/07/18	11/07/18	EPA 9045B	
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**Extractable Petroleum Hydrocarbons by 8015B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110721 - EPA 3550B GC**

<b>Blank (8110721-BLK1)</b>		Prepared: 11/07/18 Analyzed: 11/09/18								
C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							

<i>Surrogate: p-Terphenyl</i>	116		"	101		115	65-135			
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<b>LCS (8110721-BS1)</b>		Prepared: 11/07/18 Analyzed: 11/09/18								
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C13-C28 (DRO)	530	10	mg/kg	505		104	75-125			
<i>Surrogate: p-Terphenyl</i>	114		"	101		113	65-135			

<b>Matrix Spike (8110721-MS1)</b>		<b>Source: T183338-01</b>		Prepared: 11/07/18 Analyzed: 11/09/18						
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C13-C28 (DRO)	480	10	mg/kg	495	ND	97.7	75-125			
<i>Surrogate: p-Terphenyl</i>	102		"	99.0		103	65-135			

<b>Matrix Spike Dup (8110721-MSD1)</b>		<b>Source: T183338-01</b>		Prepared: 11/07/18 Analyzed: 11/09/18						
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C13-C28 (DRO)	490	10	mg/kg	505	ND	96.9	75-125	1.17	20	
<i>Surrogate: p-Terphenyl</i>	104		"	101		103	65-135			

**Batch 8110723 - EPA 3550B GC**

<b>Blank (8110723-BLK1)</b>		Prepared & Analyzed: 11/07/18								
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C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
<i>Surrogate: p-Terphenyl</i>	109		"	98.0		111	65-135			

<b>LCS (8110723-BS1)</b>		Prepared & Analyzed: 11/07/18								
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C13-C28 (DRO)	490	10	mg/kg	490		100	75-125			
<i>Surrogate: p-Terphenyl</i>	108		"	98.0		110	65-135			

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**Extractable Petroleum Hydrocarbons by 8015B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110723 - EPA 3550B GC**

**LCS Dup (8110723-BSD1)**

Prepared & Analyzed: 11/07/18

C13-C28 (DRO)	500	10	mg/kg	490		101	75-125	1.06	20	
Surrogate: <i>p</i> -Terphenyl	112		"	98.0		115	65-135			

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**Metals by EPA 6010B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110803 - EPA 3050B**

**Blank (8110803-BLK1)**

Prepared & Analyzed: 11/08/18

Arsenic	ND	5.0	mg/kg							
Lead	ND	3.0	"							

**LCS (8110803-BS1)**

Prepared & Analyzed: 11/08/18

Arsenic	108	5.0	mg/kg	100		108	75-125			
Lead	100	3.0	"	100		100	75-125			

**Matrix Spike (8110803-MS1)**

Source: T183336-01

Prepared & Analyzed: 11/08/18

Arsenic	127	5.0	mg/kg	100	6.44	120	75-125			
Lead	110	3.0	"	100	6.73	103	75-125			

**Matrix Spike Dup (8110803-MSD1)**

Source: T183336-01

Prepared & Analyzed: 11/08/18

Arsenic	126	5.0	mg/kg	100	6.44	120	75-125	0.526	20	
Lead	100	3.0	"	100	6.73	93.6	75-125	9.07	20	

**Batch 8110821 - EPA 3050B**

**Blank (8110821-BLK1)**

Prepared: 11/08/18 Analyzed: 11/09/18

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

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**Metals by EPA 6010B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110821 - EPA 3050B**

**LCS (8110821-BS1)**

Prepared: 11/08/18 Analyzed: 11/09/18

Arsenic	111	5.0	mg/kg	100		111	75-125			
Barium	111	1.0	"	100		111	75-125			
Cadmium	112	2.0	"	100		112	75-125			
Chromium	109	2.0	"	100		109	75-125			
Lead	112	3.0	"	100		112	75-125			

**Matrix Spike (8110821-MS1)**

Source: T183338-18

Prepared: 11/08/18 Analyzed: 11/09/18

Arsenic	116	5.0	mg/kg	99.0	6.71	110	75-125			
Barium	299	1.0	"	99.0	186	114	75-125			
Cadmium	103	2.0	"	99.0	0.290	104	75-125			
Chromium	198	2.0	"	99.0	92.4	107	75-125			
Lead	145	3.0	"	99.0	39.5	106	75-125			

**Matrix Spike Dup (8110821-MSD1)**

Source: T183338-18

Prepared: 11/08/18 Analyzed: 11/09/18

Arsenic	106	5.0	mg/kg	99.0	6.71	101	75-125	8.61	20	
Barium	263	1.0	"	99.0	186	77.2	75-125	12.9	20	
Cadmium	96.3	2.0	"	99.0	0.290	97.0	75-125	6.87	20	
Chromium	177	2.0	"	99.0	92.4	85.4	75-125	11.2	20	
Lead	123	3.0	"	99.0	39.5	84.9	75-125	15.7	20	

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West Sacramento CA, -

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Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

**Cold Vapor Extraction EPA 7470/7471 - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110719 - EPA 7471A Soil**

**Blank (8110719-BLK1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Mercury	ND	0.10	mg/kg							
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**LCS (8110719-BS1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Mercury	0.353	0.10	mg/kg	0.397		88.9	80-120			
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**Matrix Spike (8110719-MS1)**

**Source: T183347-08**

Prepared: 11/07/18 Analyzed: 11/08/18

Mercury	0.352	0.10	mg/kg	0.417	ND	84.4	75-125			
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**Matrix Spike Dup (8110719-MSD1)**

**Source: T183347-08**

Prepared: 11/07/18 Analyzed: 11/08/18

Mercury	0.326	0.10	mg/kg	0.385	ND	84.8	75-125	7.47	20	
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Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110722 - EPA 5030 GCMS**

**Blank (8110722-BLK1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Benzene	ND	5.0	ug/kg							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Tert-amyl methyl ether	ND	20	"							
Tert-butyl alcohol	ND	50	"							
Di-isopropyl ether	ND	20	"							
Ethyl tert-butyl ether	ND	20	"							
Methyl tert-butyl ether	ND	20	"							
Surrogate: Toluene-d8	39.1		"	40.0		97.8	83.2-113			
Surrogate: 4-Bromofluorobenzene	43.7		"	40.0		109	82.9-116			
Surrogate: Dibromofluoromethane	37.2		"	40.0		93.0	80.4-132			

**LCS (8110722-BS1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Chlorobenzene	32.3	5.0	ug/kg	40.0		80.8	65.2-124			
1,1-Dichloroethene	30.8	5.0	"	40.0		77.0	60.9-131			
Trichloroethene	31.0	5.0	"	40.0		77.5	62.1-126			
Benzene	29.1	5.0	"	40.0		72.7	65.3-127			
Toluene	29.9	5.0	"	40.0		74.8	64.3-122			
Surrogate: Toluene-d8	38.3		"	40.0		95.6	83.2-113			
Surrogate: 4-Bromofluorobenzene	42.2		"	40.0		105	82.9-116			
Surrogate: Dibromofluoromethane	40.1		"	40.0		100	80.4-132			

**LCS Dup (8110722-BSD1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Chlorobenzene	39.5	5.0	ug/kg	39.8		99.1	65.2-124	19.9	20	
1,1-Dichloroethene	34.3	5.0	"	39.8		86.1	60.9-131	10.8	20	
Trichloroethene	37.0	5.0	"	39.8		92.8	62.1-126	17.6	20	
Benzene	34.7	5.0	"	39.8		87.1	65.3-127	17.6	20	
Toluene	35.6	5.0	"	39.8		89.4	64.3-122	17.4	20	
Surrogate: Toluene-d8	38.2		"	39.8		95.9	83.2-113			
Surrogate: 4-Bromofluorobenzene	42.5		"	39.8		107	82.9-116			
Surrogate: Dibromofluoromethane	39.5		"	39.8		99.0	80.4-132			

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Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
 11/14/18 09:25

**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110715 - EPA 3550 ECD/GCMS**

**Blank (8110715-BLK1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Carbazole	ND	300	ug/kg
Aniline	ND	300	"
Phenol	ND	1000	"
2-Chlorophenol	ND	1000	"
1,4-Dichlorobenzene	ND	300	"
N-Nitrosodi-n-propylamine	ND	300	"
1,2,4-Trichlorobenzene	ND	300	"
4-Chloro-3-methylphenol	ND	1000	"
1-Methylnaphthalene	ND	300	"
2-Methylnaphthalene	ND	300	"
Acenaphthene	ND	300	"
4-Nitrophenol	ND	1000	"
2,4-Dinitrotoluene	ND	300	"
Pentachlorophenol	ND	1000	"
Pyrene	ND	300	"
Acenaphthylene	ND	300	"
Anthracene	ND	300	"
Benzo (a) anthracene	ND	300	"
Benzo (b) fluoranthene	ND	300	"
Benzo (k) fluoranthene	ND	300	"
Benzo (g,h,i) perylene	ND	1000	"
Benzo (a) pyrene	ND	300	"
Benzyl alcohol	ND	300	"
Bis(2-chloroethoxy)methane	ND	300	"
Bis(2-chloroethyl)ether	ND	300	"
Bis(2-chloroisopropyl)ether	ND	300	"
Bis(2-ethylhexyl)phthalate	ND	300	"
4-Bromophenyl phenyl ether	ND	300	"
Butyl benzyl phthalate	ND	300	"
4-Chloroaniline	ND	300	"
2-Chloronaphthalene	ND	300	"
4-Chlorophenyl phenyl ether	ND	300	"
Chrysene	ND	300	"
Dibenz (a,h) anthracene	ND	300	"
Dibenzofuran	ND	300	"
Di-n-butyl phthalate	ND	300	"

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Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
 11/14/18 09:25

**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110715 - EPA 3550 ECD/GCMS**

**Blank (8110715-BLK1)**

Prepared: 11/07/18 Analyzed: 11/08/18

1,2-Dichlorobenzene	ND	300	ug/kg							
1,3-Dichlorobenzene	ND	300	"							
2,4-Dichlorophenol	ND	1000	"							
Diethyl phthalate	ND	300	"							
2,4-Dimethylphenol	ND	1000	"							
Dimethyl phthalate	ND	300	"							
4,6-Dinitro-2-methylphenol	ND	1000	"							
2,4-Dinitrophenol	ND	1000	"							
2,6-Dinitrotoluene	ND	1000	"							
Di-n-octyl phthalate	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Hexachlorobenzene	ND	1500	"							
Hexachlorobutadiene	ND	300	"							
Hexachlorocyclopentadiene	ND	1000	"							
Hexachloroethane	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Isophorone	ND	300	"							
2-Methylphenol	ND	1000	"							
4-Methylphenol	ND	1000	"							
Naphthalene	ND	300	"							
2-Nitroaniline	ND	300	"							
3-Nitroaniline	ND	300	"							
4-Nitroaniline	ND	300	"							
Nitrobenzene	ND	1000	"							
2-Nitrophenol	ND	1000	"							
N-Nitrosodimethylamine	ND	300	"							
N-Nitrosodiphenylamine	ND	300	"							
2,3,5,6-Tetrachlorophenol	ND	300	"							
2,3,4,6-Tetrachlorophenol	ND	300	"							
Phenanthrene	ND	300	"							
Azobenzene	ND	300	"							
Pyridine	ND	300	"							
2,4,5-Trichlorophenol	ND	1000	"							
2,4,6-Trichlorophenol	ND	1000	"							

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Project: Pole Line Ramp  
 Project Number: 3534.x  
 Project Manager: Laura Long

Reported:  
 11/14/18 09:25

**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110715 - EPA 3550 ECD/GCMS**

**Blank (8110715-BLK1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Surrogate: 2-Fluorophenol	1740		ug/kg	3260		53.3	15-121			
Surrogate: Phenol-d6	2040		"	3260		62.5	24-113			
Surrogate: Nitrobenzene-d5	1780		"	3260		54.8	21.3-119			
Surrogate: 2-Fluorobiphenyl	2000		"	3260		61.5	32.4-102			
Surrogate: 2,4,6-Tribromophenol	2210		"	3260		67.7	18.1-105			
Surrogate: Terphenyl-d14	3150		"	3260		96.6	29.1-130			

**LCS (8110715-BS1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Phenol	2640	1000	ug/kg	3320		79.5	34-114			
2-Chlorophenol	2490	1000	"	3320		74.9	34-114			
1,4-Dichlorobenzene	2370	300	"	3320		71.4	34-114			
N-Nitrosodi-n-propylamine	3470	300	"	3320		105	30-110			
1,2,4-Trichlorobenzene	2480	300	"	3320		74.5	39-119			
4-Chloro-3-methylphenol	3110	1000	"	3320		93.7	50-130			
Acenaphthene	2810	300	"	3320		84.6	34-114			
Pentachlorophenol	3310	1000	"	3320		99.6	50-130			
Pyrene	3710	300	"	3320		112	33.7-123			
Surrogate: 2-Fluorophenol	2330		"	3320		70.1	15-121			
Surrogate: Phenol-d6	2850		"	3320		85.7	24-113			
Surrogate: Nitrobenzene-d5	2430		"	3320		73.2	21.3-119			
Surrogate: 2-Fluorobiphenyl	2710		"	3320		81.5	32.4-102			
Surrogate: 2,4,6-Tribromophenol	3070		"	3320		92.4	18.1-105			
Surrogate: Terphenyl-d14	3640		"	3320		109	29.1-130			

**LCS Dup (8110715-BSD1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Phenol	2500	1000	ug/kg	3300		75.9	34-114	5.31	42	
2-Chlorophenol	2400	1000	"	3300		72.7	34-114	3.72	40	
1,4-Dichlorobenzene	2320	300	"	3300		70.3	34-114	2.30	28	
N-Nitrosodi-n-propylamine	3380	300	"	3300		102	30-110	2.85	38	
1,2,4-Trichlorobenzene	2360	300	"	3300		71.6	39-119	4.64	28	
4-Chloro-3-methylphenol	2990	1000	"	3300		90.6	50-130	4.02	42	
Acenaphthene	2700	300	"	3300		81.8	34-114	4.09	31	
Pentachlorophenol	3350	1000	"	3300		102	50-130	1.32	50	
Pyrene	3700	300	"	3300		112	33.7-123	0.305	31	
Surrogate: 2-Fluorophenol	2220		"	3300		67.2	15-121			
Surrogate: Phenol-d6	2710		"	3300		82.1	24-113			

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**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110715 - EPA 3550 ECD/GCMS**

**LCS Dup (8110715-BSD1)**

Prepared: 11/07/18 Analyzed: 11/08/18

Surrogate: Nitrobenzene-d5	2280		ug/kg	3300		69.0	21.3-119			
Surrogate: 2-Fluorobiphenyl	2550		"	3300		77.2	32.4-102			
Surrogate: 2,4,6-Tribromophenol	2840		"	3300		86.1	18.1-105			
Surrogate: Terphenyl-d14	3590		"	3300		109	29.1-130			

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**Conventional Chemistry Parameters by APHA/EPA/ASTM Methods - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8110714 - General Preparation**

<b>Duplicate (8110714-DUP1)</b>	<b>Source: T183338-07</b>		<b>Prepared &amp; Analyzed: 11/07/18</b>							
pH	6.81	0.1	pH Units		6.81			0.00	20	

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Kris Kubota, Project Manager Assistant



Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/14/18 09:25

### Notes and Definitions

R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.

M-02 Multiple analysis yielded poor internal standard and/or surrogate recoveries due to matrix effect. Results reported are from the most complete recovery of internal standards, however, recoveries were not within the acceptable limits of the method.

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

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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.*

---

Kris Kubota, Project Manager Assistant



Chain of Custody Record

25712 Commercentre Drive, Lake Forest, CA 92630  
949-297-5020

Client: Blackburn Consulting (BCI)  
Address: 2491 Boatman Avenue West Sac, CA  
Phone: 916-375-8706 Fax: \_\_\_\_\_  
Project Manager: Laura Long

Date: 11/6/18 Page: 1 of 2  
Project Name: Pole Line Ramp  
Collector: Lute Morrell Client Project #: 3534X  
Batch #: T183388 EDF #: \_\_\_\_\_

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only +5	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	6010 Total Lead	6010 Total Arsenic	Laboratory ID #	Comments/Preservative	Total # of containers				
B1-A	11/5/18	10:25	Soil	Jar				X				X					4		2				
B1-B		11:05										X					02	(None)	2				
B2-A		11:40						X				X					02		2				
B2-B		11:50						X				X					04		2				
B2-C		12:00						X				X					05		2				
B3-A		12:30						X				X					06		2				
B3-B		12:35						X				X					07		2				
B3-C		13:00						X				X					08		2				
B4-A		13:10						X				X					09		2				
B4-B		13:20						X				X					10		2				
B4-C		13:35						X				X					11		2				
B5-A		13:50						X				X							2				
B5-B		14:05						X				X							2				
B5-C		14:20						X				X							2				
Relinquished by: (signature) <u>Lute Morrell</u>			Received by: (signature) <u>DoD Morrell</u>			Date / Time <u>11/6/18 11:42</u>			Date / Time <u>11/6/18 11:42</u>			Total # of containers <u>20</u>			Chain of Custody seals <u>XXXXXX</u>			Seals intact? <u>XXXXXX</u>			Received good condition/cold <u>XXXXXX</u>		
Relinquished by: (signature) <u>LS</u>			Received by: (signature) <u>Laura Long</u>			Date / Time <u>11-7-18 0945</u>			Date / Time <u>11/7/18 0945</u>			Turn around time: <u>STD</u>			Notes: <u>All "C" samples will be held and tested for SVOC after results for SVOC of "A" and "B" samples are received. "C" samples will be tested for TPH, g, m, o, and Pb, As</u>								

Sample disposal instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

COC 170439



25712 Commercentre Drive, Lake Forest, CA 92630  
949-297-5020

Chain of Custody Record

Client: Blackburn Consulting (BCI)  
Address: 2491 Boatman Avenue West Sac, CA  
Phone: 916-375-8706 Fax: \_\_\_\_\_  
Project Manager: Laura Long

Date: 11/6/18 Page: 2 of 2  
Project Name: Pole Line Ramp  
Collector: Luke Morrell Client Project #: 3534.X  
Batch #: T183338 EDF #: \_\_\_\_\_

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only +5	8270 SVOL	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	6010 Total Lead	6010 Total Arsenic	pH(9045B)	Laboratory ID #	Comments/Preservative	Total # of containers
B6-A	11/6/18	07:10	Soil	Jar														15		2
B6-B		07:15																16		2
B6-C		07:25																17		2
DB1-A		07:45																17		2
DB1-B		08:10																18		2
DB2-A		09:05																19		2
DB2-B		09:20																20		2
Reinquired by: (signature) <u>Luke Morrell</u>				Date / Time	11/6 11:40	Received by: (signature) <u>DO'Donnell</u>				Date / Time	11/6 11:40	Total # of containers		14	Chain of Custody seals		Y/N/NA	Y/N/NA	Notes	
Reinquired by: (signature) <u>[Signature]</u>				Date / Time	11-7-18 0945	Received by: (signature) <u>[Signature]</u>				Date / Time	11-7-18 0945	Received good condition/cold		3.1	Turn around time:		STD	4.4		

Sample disposal instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

COC 170440



## SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #:           T183338            
 Client Name:           BLACKBURN           Project:           POLE LINE RAMP            
 Delivered by:    Client    SunStar Courier    GSO    FedEx    Other  
 If Courier, Received by: \_\_\_\_\_ Date/Time Courier Received: \_\_\_\_\_  
 Lab Received by:           BRIAN           Date/Time Lab Received:           11-7-18 0945            
 Total number of coolers received:           2          

Temperature:	Cooler #1	1.9 °C +/- the CF (1.2°C) = 3.1	°C corrected temperature
Temperature:	Cooler #2	3.2 °C +/- the CF (1.2°C) = 4.4	°C corrected temperature
Temperature:	Cooler #3	°C +/- the CF (1.2°C) =	°C corrected temperature

**Temperature criteria = ≤ 6°C (no frozen containers)**                      Within criteria?    Yes    No

**If NO:**  
 Samples received on ice?                       Yes                       No → Complete Non-Conformance Sheet  
 If on ice, samples received same day collected?                       Yes → Acceptable                       No → Complete Non-Conformance Sheet

Custody seals intact on cooler/sample                       Yes    No\*    N/A  
 Sample containers intact                       Yes    No\*  
 Sample labels match Chain of Custody IDs                       Yes    No\*  
 Total number of containers received match COC                       Yes    No\*  
 Proper containers received for analyses requested on COC                       Yes    No\*  
 Proper preservative indicated on COC/containers for analyses requested                       Yes    No\*    N/A  
 Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times                       Yes    No\*

\* Complete Non-Conformance Receiving Sheet if checked                      Cooler/Sample Review - Initials and date:           BC 11-7-18          

**Comments:**  
 \_\_\_\_\_  
 \_\_\_\_\_

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

**Report To:**

Blackburn Consulting-West Sac.

Laura Long

2491 Boatman Ave.

West Sacramento, CA -

Date Due: 11/14/18 17:00 (5 day TAT)

Received By: Brian Charon

Date Received: 11/07/18 09:45

Logged In By: Brian Charon

Date Logged In: 11/07/18 10:27

Samples Received at: 3.1°C

Custody Seals Yes Received On Ice Yes

Containers Intact Yes

COC/Labels Agree Yes

Preservation Confin No

Analysis	Due	TAT	Expires	Comments
<b>T183338-01 B1-A [Soil] Sampled 11/05/18 10:25 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 10:25	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 10:25	
8270C	11/14/18 15:00	5	11/19/18 10:25	
<b>T183338-02 B1-B [Soil] Sampled 11/05/18 11:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:05	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:05	
8270C	11/14/18 15:00	5	11/19/18 11:05	
<b>T183338-03 B2-A [Soil] Sampled 11/05/18 11:40 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:40	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:40	
8270C	11/14/18 15:00	5	11/19/18 11:40	
<b>T183338-04 B2-B [Soil] Sampled 11/05/18 11:50 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:50	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:50	
8270C	11/14/18 15:00	5	11/19/18 11:50	
<b>T183338-05 B2-C [Soil] Sampled 11/05/18 12:00 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:00	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:00	

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-06 B3-A [Soil] Sampled 11/05/18 12:30 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:30	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:30	
8270C	11/14/18 15:00	5	11/19/18 12:30	
<b>T183338-07 B3-B [Soil] Sampled 11/05/18 12:35 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:35	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:35	
8270C	11/14/18 15:00	5	11/19/18 12:35	
pH soil 9045	11/14/18 15:00	5	11/19/18 12:35	
<b>T183338-08 B3-C [Soil] Sampled 11/05/18 13:00 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:00	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:00	
<b>T183338-09 B4-A [Soil] Sampled 11/05/18 13:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:10	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:10	
8270C	11/14/18 15:00	5	11/19/18 13:10	
<b>T183338-10 B4-B [Soil] Sampled 11/05/18 13:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:20	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:20	
8270C	11/14/18 15:00	5	11/19/18 13:20	
<b>T183338-11 B4-C [Soil] Sampled 11/05/18 13:35 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:35	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:35	
<b>T183338-12 B5-A [Soil] Sampled 11/05/18 13:50 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:50	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:50	
8270C	11/14/18 15:00	5	11/19/18 13:50	

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-13 B5-B [Soil] Sampled 11/05/18 14:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 14:05	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 14:05	
8270C	11/14/18 15:00	5	11/19/18 14:05	
<b>T183338-14 B5-C [Soil] Sampled 11/05/18 14:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 14:20	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 14:20	
<b>T183338-15 B6-A [Soil] Sampled 11/06/18 07:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:10	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:10	
8270C	11/14/18 15:00	5	11/20/18 07:10	
<b>T183338-16 B6-B [Soil] Sampled 11/06/18 07:15 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:15	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:15	
8270C	11/14/18 15:00	5	11/20/18 07:15	
<b>T183338-17 B6-C [Soil] Sampled 11/06/18 07:25 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:25	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:25	
<b>T183338-18 DB1-A [Soil] Sampled 11/06/18 07:45 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 07:45	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:45	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 07:45	+5
<b>T183338-19 DB1-B [Soil] Sampled 11/06/18 08:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 08:10	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 08:10	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 08:10	+5
<b>T183338-20 DB2-A [Soil] Sampled 11/06/18 09:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 09:05	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 09:05	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 09:05	+5

**WORK ORDER**

**T183338**

**Client:** Blackburn Consulting-West Sac.  
**Project:** Pole Line Ramp

**Project Manager:** Kris Kubota  
**Project Number:** 3534.x

Analysis	Due	TAT	Expires	Comments
<b>T183338-21 DB2-B [Soil] Sampled 11/06/18 09:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 09:20	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 09:20	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 09:20	+5
pH soil 9045	11/14/18 15:00	5	11/20/18 09:20	

**Analysis groups included in this work order**

*6010 Title 22*

subgroup 6010B T22      7470/71 Hg





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

26 November 2018

Laura Long  
Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento, CA -  
RE: Pole Line Ramp

Enclosed are the results of analyses for samples received by the laboratory on 11/07/18 09:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mike Jaroudi For Kris Kubota  
Project Manager Assistant



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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	Reported: 11/26/18 09:01
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-B	T183338-02	Soil	11/05/18 11:05	11/07/18 09:45
B2-A	T183338-03	Soil	11/05/18 11:40	11/07/18 09:45
B2-B	T183338-04	Soil	11/05/18 11:50	11/07/18 09:45
B2-C	T183338-05	Soil	11/05/18 12:00	11/07/18 09:45
B3-B	T183338-07	Soil	11/05/18 12:35	11/07/18 09:45
B4-A	T183338-09	Soil	11/05/18 13:10	11/07/18 09:45
B5-A	T183338-12	Soil	11/05/18 13:50	11/07/18 09:45
B6-A	T183338-15	Soil	11/06/18 07:10	11/07/18 09:45

SunStar Laboratories, Inc.

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Mike Jaroudi For Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/26/18 09:01

**DETECTIONS SUMMARY**

Sample ID:	B1-B	Laboratory ID:	T183338-02			
Analyte	Result	Reporting Limit	Units	Method	Notes	
Lead	6.0	0.10	mg/l	STLC Waste Extraction T		
Sample ID:	B2-A	Laboratory ID:	T183338-03			
Analyte	Result	Reporting Limit	Units	Method	Notes	
Lead	2.9	0.10	mg/l	STLC Waste Extraction T		
Sample ID:	B2-B	Laboratory ID:	T183338-04			
Analyte	Result	Reporting Limit	Units	Method	Notes	
Lead	1.9	0.10	mg/l	STLC Waste Extraction T		
Sample ID:	B2-C	Laboratory ID:	T183338-05			
Analyte	Result	Reporting Limit	Units	Method	Notes	
Lead	1.1	0.10	mg/l	STLC Waste Extraction T		
Sample ID:	B3-B	Laboratory ID:	T183338-07			
No Results Detected						
Sample ID:	B4-A	Laboratory ID:	T183338-09			
Analyte	Result	Reporting Limit	Units	Method	Notes	
Lead	15	0.10	mg/l	STLC Waste Extraction T		

SunStar Laboratories, Inc.



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Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/26/18 09:01

**Sample ID:** B5-A

**Laboratory ID:** T183338-12

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Lead	3.0	0.10		mg/l	STLC Waste Extraction T	

**Sample ID:** B6-A

**Laboratory ID:** T183338-15

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Lead	2.9	0.10		mg/l	STLC Waste Extraction T	

SunStar Laboratories, Inc.



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Mike Jaroudi For Kris Kubota, Project Manager Assistant



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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	Reported: 11/26/18 09:01
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**B1-B**  
**T183338-02 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	6.0	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

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.*

Mike Jaroudi For Kris Kubota, Project Manager Assistant



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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	<b>Reported:</b> 11/26/18 09:01
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**B2-A**  
**T183338-03 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	2.9	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

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.*

Mike Jaroudi For Kris Kubota, Project Manager Assistant



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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	<b>Reported:</b> 11/26/18 09:01
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**B2-B**  
**T183338-04 (Soil)**

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

**SunStar Laboratories, Inc.**

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	1.9	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

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.*

Mike Jaroudi For Kris Kubota, Project Manager Assistant



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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	<b>Reported:</b> 11/26/18 09:01
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**B2-C**  
**T183338-05 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	1.1	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

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.*

Mike Jaroudi For Kris Kubota, Project Manager Assistant





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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	Reported: 11/26/18 09:01
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**B3-B**  
**T183338-07 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	ND	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

SunStar Laboratories, Inc.

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Mike Jaroudi For Kris Kubota, Project Manager Assistant



25712 Commercentre Drive  
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 949.297.5020 Phone  
 949.297.5027 Fax

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	<b>Reported:</b> 11/26/18 09:01
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**B4-A**  
**T183338-09 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	15	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

SunStar Laboratories, Inc.

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Mike Jaroudi For Kris Kubota, Project Manager Assistant



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

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	<b>Reported:</b> 11/26/18 09:01
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**B5-A**  
**T183338-12 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	3.0	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

SunStar Laboratories, Inc.

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Mike Jaroudi For Kris Kubota, Project Manager Assistant



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 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Blackburn Consulting-West Sac. 2491 Boatman Ave. West Sacramento CA, -	Project: Pole Line Ramp Project Number: 3534.x Project Manager: Laura Long	<b>Reported:</b> 11/26/18 09:01
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**B6-A**  
**T183338-15 (Soil)**

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

**STLC Metals by 6000/7000 Series Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	2.9	0.10	mg/l	1	8111505	11/15/18	11/19/18	STLC Waste Extraction Test	

SunStar Laboratories, Inc.

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Mike Jaroudi For Kris Kubota, Project Manager Assistant

Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

Reported:  
11/26/18 09:01

**STLC 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
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**Batch 8111505 - STLC Metals**

**Blank (8111505-BLK1)**

Prepared: 11/15/18 Analyzed: 11/19/18

Selenium	ND	0.10	mg/l							
Lead	ND	0.10	"							

**LCS (8111505-BS1)**

Prepared: 11/15/18 Analyzed: 11/19/18

Selenium	8.28	0.10	mg/l	10.0		82.8	75-125			
Lead	8.58	0.10	"	10.0		85.8	75-125			

**Matrix Spike (8111505-MS1)**

Source: T183331-01

Prepared: 11/15/18 Analyzed: 11/19/18

Selenium	9.24	0.10	mg/l	10.0	0.646	85.9	75-125			
Lead	9.28	0.10	"	10.0	ND	92.8	75-125			

**Matrix Spike Dup (8111505-MSD1)**

Source: T183331-01

Prepared: 11/15/18 Analyzed: 11/19/18

Selenium	8.90	0.10	mg/l	10.0	0.646	82.5	75-125	3.73	30	
Lead	7.92	0.10	"	10.0	ND	79.2	75-125	15.8	30	

SunStar Laboratories, Inc.



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Blackburn Consulting-West Sac.  
2491 Boatman Ave.  
West Sacramento CA, -

Project: Pole Line Ramp  
Project Number: 3534.x  
Project Manager: Laura Long

**Reported:**  
11/26/18 09:01

### 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

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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.*

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Mike Jaroudi For Kris Kubota, Project Manager Assistant



Chain of Custody Record

25712 Commercentre Drive, Lake Forest, CA 92630  
949-297-5020

Client: Blackburn Consulting (BCI)  
Address: 2491 Boatman Avenue West Sac, CA  
Phone: 916-375-8706 Fax: \_\_\_\_\_  
Project Manager: Laura Long

Date: 11/6/18 Page: 1 of 2  
Project Name: Pole Line Ramp  
Collector: Lute Morrell Client Project #: 3534X  
Batch #: T183388 EDF #: \_\_\_\_\_

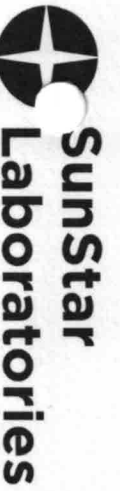
Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only +5	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	6010 Total Lead	6010 Total Arsenic	Laboratory ID #	Comments/Preservative	Total # of containers
B1-A	11/5/18	10:25	Soil	Jar				X				X					01		2
B1-B		11:05						X				X					02	(None)	2
B2-A		11:40						X				X					03		2
B2-B		11:50						X				X					04		2
B2-C		12:00						X				X					05		2
B3-A		12:30						X				X					06		2
B3-B		12:35						X				X					07		2
B3-C		13:00						X				X					08		2
B4-A		13:10						X				X					09		2
B4-B		13:20						X				X					10		2
B4-C		13:35						X				X					11		2
B5-A		13:50						X				X					12		2
B5-B		14:05						X				X					13		2
B5-C		14:20						X				X					14		2
Relinquished by: (signature) <u>Lute Morrell</u>			Received by: (signature) <u>DoD Morrell</u>			Date / Time <u>11/6/18 11:42</u>			Date / Time <u>11/6/18 11:42</u>			Total # of containers <u>20</u>							
Relinquished by: (signature) _____			Received by: (signature) _____			Date / Time <u>0945</u>			Date / Time <u>11/7/18 0945</u>			Chain of Custody seals <u>XXXXXX</u>							
Relinquished by: (signature) _____			Received by: (signature) _____			Date / Time <u>11-7-18</u>			Date / Time _____			Received good condition/cold _____							

Notes: All "C" samples will be held and tested for SVOC after results for SVOC of "A" and "B" samples are received. "C" samples will be tested for TPH, g, m, o, d and Pb, As

Sample disposal instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

Turn around time: STD

COC 170439



25712 Commercentre Drive, Lake Forest, CA 92630  
949-297-5020

Chain of Custody Record

Client: Blackburn Consulting (BCI)  
Address: 2491 Boatman Avenue West Sac, CA  
Phone: 916-375-8706 Fax: \_\_\_\_\_  
Project Manager: Laura Long

Date: 11/6/18 Page: 2 of 2  
Project Name: Pole Line Ramp  
Collector: Luke Morrell Client Project #: 3534.X  
Batch #: T183338 EDF #: \_\_\_\_\_

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only +5	8270 SVOL	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals	6010 Total Lead	6010 Total Arsenic	pH(9045B)	Laboratory ID #	Comments/Preservative	Total # of containers
B6-A	11/6/18	07:10	Soil	Jar														15		2
B6-B		07:15																16		2
B6-C		07:25																17		2
DB1-A		07:45																17		2
DB1-B		08:10																18		2
DB2-A		09:05																19		2
DB2-B		09:20																20		2
Reinquired by: (signature) <u>Luke Morrell</u>				Date / Time	Received by: (signature) <u>DO'Donnell</u>				Date / Time	Chain of Custody seals				Total # of containers	Notes					
Reinquired by: (signature) _____				11/6 11:40	Received by: (signature) _____				11/6 11:40	Seals intact Y/N/NA				14						
Reinquired by: (signature) _____				11-7-18 0945	Received by: (signature) _____				11-7-18 0945	Received good condition/cold				3.1						
Reinquired by: (signature) _____				Date / Time	Received by: (signature) _____				Date / Time	Turn around time: <u>STD</u>				4.4						

Sample disposal instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

COC 170440





**SAMPLE RECEIVING REVIEW SHEET**

Batch/Work Order #:       T183338      

Client Name:       BLACKBURN      

Project:       POLE LINE RAMP      

Delivered by:  Client  SunStar Courier  GSO  FedEx  Other

If Courier, Received by: \_\_\_\_\_

Date/Time Courier Received: \_\_\_\_\_

Lab Received by:       BRIAN      

Date/Time Lab Received:       11-7-18 0945      

Total number of coolers received:       2      

Temperature: Cooler #1   1.9   °C +/- the CF (1.2°C) =   3.1   °C corrected temperature

Temperature: Cooler #2   3.2   °C +/- the CF (1.2°C) =   4.4   °C corrected temperature

Temperature: Cooler #3 \_\_\_\_\_ °C +/- the CF (1.2°C) = \_\_\_\_\_ °C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers) Within criteria?  Yes  No

**If NO:**

Samples received on ice?  Yes

No → Complete Non-Conformance Sheet

If on ice, samples received same day collected?  Yes → Acceptable

No → Complete Non-Conformance Sheet

Custody seals intact on cooler/sample  Yes  No\*  N/A

Sample containers intact  Yes  No\*

Sample labels match Chain of Custody IDs  Yes  No\*

Total number of containers received match COC  Yes  No\*

Proper containers received for analyses requested on COC  Yes  No\*

Proper preservative indicated on COC/containers for analyses requested  Yes  No\*  N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times  Yes  No\*

\* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date:       BC 11-7-18      

**Comments:**

## Kris Kubota

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**From:** Kris Kubota [kris@sunstarlabs.com]  
**Sent:** Thursday, November 15, 2018 8:25 AM  
**To:** 'Laura Long'  
**Cc:** 'Luke Morrell'; 'Bill Hannell'  
**Subject:** RE: Additional Testing  
**Attachments:** T183338\_WKO\_02.pdf; image002.png; image003.png

Hi Laura,

Thanks for speaking with me earlier. I've updated the work order to include the additional STLC testing for the samples listed below. As I mentioned, because of the Thanksgiving holiday, results on a standard 5-day TAT will be available by 11/26. Please see attached work order for confirmation.

Thank you so much!

### **Shipping Alert:**

*Please note that SunStar Laboratories will be observing the Thanksgiving Holidays on Thursday and Friday, November 22<sup>nd</sup> and 23<sup>rd</sup>. In addition, GSO will not have scheduled service on Thursday, November 22<sup>nd</sup>. If you have any short hold samples arriving near or during these days, please contact your Project Manager in advance to ensure all holding times are met for your samples. SunStar will be available on Saturday, November 24<sup>th</sup> if needed to receive samples. Please let your Project Manager know if you will ship or deliver samples on this day.*

*We appreciate your business and hope that you have a wonderful and safe holiday!*

**Kris Kubota**  
**Project Manager/Regional Account Manager**



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25712 Commercentre Dr., Lake Forest, CA 92630  
Office: (949) 297-5020 | Fax: (949) 297-5027  
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

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**From:** Laura Long [mailto:laural@blackburnconsulting.com]  
**Sent:** Thursday, November 15, 2018 7:06 AM  
**To:** kris@sunstarlabs.com  
**Cc:** Luke Morrell; Bill Hannell  
**Subject:** Additional Testing

Hi Kris,

We will need additional testing on the samples that had total lead concentrations greater than 50 mg/kg. Please run STLC WET- Citric for Lead on the following:

T183338-02, -03, -04, -05, -07, -09, -12, -15

Same PO for this project. Please send results to [laural@blackburnconsulting.com](mailto:laural@blackburnconsulting.com).

Let me know if you have any questions. Thank you!

**Laura Long**

Environmental Project Manager

**Blackburn Consulting**

2491 Boatman Ave | West Sacramento, CA 95691

P 916.375.8706 | M 530.219.4891

[laural@blackburnconsulting.com](mailto:laural@blackburnconsulting.com) | [www.blackburnconsulting.com](http://www.blackburnconsulting.com)



**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

**Report To:**

Blackburn Consulting-West Sac.

Laura Long

2491 Boatman Ave.

West Sacramento, CA -

Date Due: 11/14/18 17:00 (5 day TAT)

Received By: Brian Charon

Date Received: 11/07/18 09:45

Logged In By: Brian Charon

Date Logged In: 11/07/18 10:27

Samples Received at: 3.1°C

Custody Seals Yes Received On Ice Yes

Containers Intact Yes

COC/Labels Agree Yes

Preservation Confir No

Analysis	Due	TAT	Expires	Comments
<b>T183338-01 B1-A [Soil] Sampled 11/05/18 10:25 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 10:25	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 10:25	
8270C	11/14/18 15:00	5	11/19/18 10:25	
<b>T183338-02 B1-B [Soil] Sampled 11/05/18 11:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:05	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:05	
8270C	11/14/18 15:00	5	11/19/18 11:05	
<b>T183338-03 B2-A [Soil] Sampled 11/05/18 11:40 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:40	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:40	
8270C	11/14/18 15:00	5	11/19/18 11:40	
<b>T183338-04 B2-B [Soil] Sampled 11/05/18 11:50 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:50	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:50	
8270C	11/14/18 15:00	5	11/19/18 11:50	
<b>T183338-05 B2-C [Soil] Sampled 11/05/18 12:00 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:00	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:00	

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-06 B3-A [Soil] Sampled 11/05/18 12:30 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:30	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:30	
8270C	11/14/18 15:00	5	11/19/18 12:30	
<b>T183338-07 B3-B [Soil] Sampled 11/05/18 12:35 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:35	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:35	
8270C	11/14/18 15:00	5	11/19/18 12:35	
pH soil 9045	11/14/18 15:00	5	11/19/18 12:35	
<b>T183338-08 B3-C [Soil] Sampled 11/05/18 13:00 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:00	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:00	
<b>T183338-09 B4-A [Soil] Sampled 11/05/18 13:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:10	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:10	
8270C	11/14/18 15:00	5	11/19/18 13:10	
<b>T183338-10 B4-B [Soil] Sampled 11/05/18 13:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:20	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:20	
8270C	11/14/18 15:00	5	11/19/18 13:20	
<b>T183338-11 B4-C [Soil] Sampled 11/05/18 13:35 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:35	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:35	
<b>T183338-12 B5-A [Soil] Sampled 11/05/18 13:50 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:50	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:50	
8270C	11/14/18 15:00	5	11/19/18 13:50	

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-13 B5-B [Soil] Sampled 11/05/18 14:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 14:05	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 14:05	
8270C	11/14/18 15:00	5	11/19/18 14:05	
<b>T183338-14 B5-C [Soil] Sampled 11/05/18 14:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 14:20	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 14:20	
<b>T183338-15 B6-A [Soil] Sampled 11/06/18 07:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:10	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:10	
8270C	11/14/18 15:00	5	11/20/18 07:10	
<b>T183338-16 B6-B [Soil] Sampled 11/06/18 07:15 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:15	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:15	
8270C	11/14/18 15:00	5	11/20/18 07:15	
<b>T183338-17 B6-C [Soil] Sampled 11/06/18 07:25 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:25	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:25	
<b>T183338-18 DB1-A [Soil] Sampled 11/06/18 07:45 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 07:45	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:45	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 07:45	+5
<b>T183338-19 DB1-B [Soil] Sampled 11/06/18 08:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 08:10	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 08:10	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 08:10	+5
<b>T183338-20 DB2-A [Soil] Sampled 11/06/18 09:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 09:05	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 09:05	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 09:05	+5

**WORK ORDER**

**T183338**

**Client:** Blackburn Consulting-West Sac.  
**Project:** Pole Line Ramp

**Project Manager:** Kris Kubota  
**Project Number:** 3534.x

Analysis	Due	TAT	Expires	Comments
<b>T183338-21 DB2-B [Soil] Sampled 11/06/18 09:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	05/05/19 09:20	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 09:20	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 09:20	+5
pH soil 9045	11/14/18 15:00	5	11/20/18 09:20	

**Analysis groups included in this work order**

*6010 Title 22*

subgroup 6010B T22      7470/71 Hg

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

**Report To:**

Blackburn Consulting-West Sac.

Laura Long

2491 Boatman Ave.

West Sacramento, CA -

Date Due: 11/14/18 17:00 (5 day TAT)

Received By: Brian Charon

Date Received: 11/07/18 09:45

Logged In By: Brian Charon

Date Logged In: 11/07/18 10:27

Samples Received at: **3.1°C**

Custody Seals Yes Received On Ice Yes

Containers Intact Yes

COC/Labels Agree Yes

Preservation Confir No

Analysis	Due	TAT	Expires	Comments
<b>T183338-01 B1-A [Soil] Sampled 11/05/18 10:25 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 10:25	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 10:25	
8270C	11/14/18 15:00	5	11/19/18 10:25	
<b>T183338-02 B1-B [Soil] Sampled 11/05/18 11:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:05	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:05	
8270C	11/14/18 15:00	5	11/19/18 11:05	
STLC Pb	11/26/18 15:00	5	05/04/19 11:05	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 11:05	
<b>T183338-03 B2-A [Soil] Sampled 11/05/18 11:40 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:40	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:40	
8270C	11/14/18 15:00	5	11/19/18 11:40	
STLC Pb	11/26/18 15:00	5	05/04/19 11:40	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 11:40	
<b>T183338-04 B2-B [Soil] Sampled 11/05/18 11:50 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 11:50	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 11:50	
8270C	11/14/18 15:00	5	11/19/18 11:50	
STLC Pb	11/26/18 15:00	5	05/04/19 11:50	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 11:50	



**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**  
**Project: Pole Line Ramp**

**Project Manager: Kris Kubota**  
**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-05 B2-C [Soil] Sampled 11/05/18 12:00 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:00	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:00	
STLC Pb	11/26/18 15:00	5	05/04/19 12:00	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 12:00	
<b>T183338-06 B3-A [Soil] Sampled 11/05/18 12:30 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:30	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:30	
8270C	11/14/18 15:00	5	11/19/18 12:30	
<b>T183338-07 B3-B [Soil] Sampled 11/05/18 12:35 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 12:35	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 12:35	
8270C	11/14/18 15:00	5	11/19/18 12:35	
pH soil 9045	11/14/18 15:00	5	11/19/18 12:35	
STLC Pb	11/26/18 15:00	5	05/04/19 12:35	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 12:35	
<b>T183338-08 B3-C [Soil] Sampled 11/05/18 13:00 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:00	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:00	
<b>T183338-09 B4-A [Soil] Sampled 11/05/18 13:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:10	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:10	
8270C	11/14/18 15:00	5	11/19/18 13:10	
STLC Pb	11/26/18 15:00	5	05/04/19 13:10	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 13:10	
<b>T183338-10 B4-B [Soil] Sampled 11/05/18 13:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:20	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:20	
8270C	11/14/18 15:00	5	11/19/18 13:20	

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-11 B4-C [Soil] Sampled 11/05/18 13:35 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:35	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:35	
<b>T183338-12 B5-A [Soil] Sampled 11/05/18 13:50 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 13:50	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 13:50	
8270C	11/14/18 15:00	5	11/19/18 13:50	
STLC Pb	11/26/18 15:00	5	05/04/19 13:50	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/19/18 13:50	
<b>T183338-13 B5-B [Soil] Sampled 11/05/18 14:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 14:05	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 14:05	
8270C	11/14/18 15:00	5	11/19/18 14:05	
<b>T183338-14 B5-C [Soil] Sampled 11/05/18 14:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/04/19 14:20	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/19/18 14:20	
<b>T183338-15 B6-A [Soil] Sampled 11/06/18 07:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:10	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:10	
8270C	11/14/18 15:00	5	11/20/18 07:10	
STLC Pb	11/26/18 15:00	5	05/05/19 07:10	
STLC Leaching Procedure Metals	11/26/18 15:00	5	11/20/18 07:10	
<b>T183338-16 B6-B [Soil] Sampled 11/06/18 07:15 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:15	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:15	
8270C	11/14/18 15:00	5	11/20/18 07:15	
<b>T183338-17 B6-C [Soil] Sampled 11/06/18 07:25 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Individual Metals	11/14/18 15:00	5	05/05/19 07:25	As,Pb only
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:25	

**WORK ORDER**

**T183338**

**Client: Blackburn Consulting-West Sac.**

**Project Manager: Kris Kubota**

**Project: Pole Line Ramp**

**Project Number: 3534.x**

Analysis	Due	TAT	Expires	Comments
<b>T183338-18 DB1-A [Soil] Sampled 11/06/18 07:45 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	11/11/18 07:45	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 07:45	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 07:45	
<b>T183338-19 DB1-B [Soil] Sampled 11/06/18 08:10 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	11/11/18 08:10	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 08:10	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 08:10	
<b>T183338-20 DB2-A [Soil] Sampled 11/06/18 09:05 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	11/11/18 09:05	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 09:05	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 09:05	
<b>T183338-21 DB2-B [Soil] Sampled 11/06/18 09:20 (GMT-08:00) Pacific Time (US &amp;</b>				
6010 Title 22	11/14/18 15:00	5	11/11/18 09:20	
8015 Carbon Chain	11/14/18 15:00	5	11/20/18 09:20	
8260 BTEX/OXY	11/14/18 15:00	5	11/20/18 09:20	
pH soil 9045	11/14/18 15:00	5	11/20/18 09:20	

**Analysis groups included in this work order**

*6010 Title 22*

subgroup 6010B T22      7470/71 Hg

# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

Davis, California

### APPENDIX D

ProUCL 5.0 Statistical Analysis Calculations



**UCL Statistics for Uncensored Full Data Sets**

**User Selected Options**

Date/Time of Computation ProUCL 5.111/28/2018 9:40:50 AM  
 From File ADL Statistics Pole Line.xls  
 Full Precision OFF  
 Confidence Coefficient 95%  
 Number of Bootstrap Operations 2000

**ADL Combined Depths**

**General Statistics**

Total Number of Observations	20	Number of Distinct Observations	16
		Number of Missing Observations	1
Minimum	3	Mean	39.65
Maximum	99	Median	31.5
SD	31.92	Std. Error of Mean	7.139
Coefficient of Variation	0.805	Skewness	0.511

**Normal GOF Test**

Shapiro Wilk Test Statistic	0.905	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.905	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.158	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.192	Data appear Normal at 5% Significance Level	

Data appear Approximate Normal at 5% Significance Level

**Assuming Normal Distribution**

<b>95% Normal UCL</b>		<b>95% UCLs (Adjusted for Skewness)</b>	
95% Student's-t UCL	51.99	95% Adjusted-CLT UCL (Chen-1995)	52.26
		95% Modified-t UCL (Johnson-1978)	52.13

**Gamma GOF Test**

A-D Test Statistic	0.88	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.767	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.184	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.199	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

**Gamma Statistics**

k hat (MLE)	1.048	k star (bias corrected MLE)	0.924
Theta hat (MLE)	37.84	Theta star (bias corrected MLE)	42.91
nu hat (MLE)	41.91	nu star (bias corrected)	36.96
MLE Mean (bias corrected)	39.65	MLE Sd (bias corrected)	41.25
		Approximate Chi Square Value (0.05)	24.04
Adjusted Level of Significance	0.038	Adjusted Chi Square Value	23.22

**Assuming Gamma Distribution**

95% Approximate Gamma UCL (use when n>=50)	60.95	95% Adjusted Gamma UCL (use when n<50)	63.11
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**Lognormal GOF Test**

Shapiro Wilk Test Statistic	0.821	Shapiro Wilk Lognormal GOF Test	
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	A	B	C	D	E	F	G	H	I	J	K	L
53			5% Shapiro Wilk Critical Value			0.905		Data Not Lognormal at 5% Significance Level				
54			Lilliefors Test Statistic			0.214		Lilliefors Lognormal GOF Test				
55			5% Lilliefors Critical Value			0.192		Data Not Lognormal at 5% Significance Level				
56			Data Not Lognormal at 5% Significance Level									
57												
58			Lognormal Statistics									
59			Minimum of Logged Data			1.099		Mean of logged Data			3.132	
60			Maximum of Logged Data			4.595		SD of logged Data			1.296	
61												
62			Assuming Lognormal Distribution									
63			95% H-UCL			133.1		90% Chebyshev (MVUE) UCL			99.85	
64			95% Chebyshev (MVUE) UCL			122.6		97.5% Chebyshev (MVUE) UCL			154.3	
65			99% Chebyshev (MVUE) UCL			216.4						
66												
67			Nonparametric Distribution Free UCL Statistics									
68			Data appear to follow a Discernible Distribution at 5% Significance Level									
69												
70			Nonparametric Distribution Free UCLs									
71			95% CLT UCL			51.39		95% Jackknife UCL			51.99	
72			95% Standard Bootstrap UCL			50.89		95% Bootstrap-t UCL			53.49	
73			95% Hall's Bootstrap UCL			51.78		95% Percentile Bootstrap UCL			51.45	
74			95% BCA Bootstrap UCL			51.45						
75			90% Chebyshev(Mean, Sd) UCL			61.07		95% Chebyshev(Mean, Sd) UCL			70.77	
76			97.5% Chebyshev(Mean, Sd) UCL			84.23		99% Chebyshev(Mean, Sd) UCL			110.7	
77												
78			Suggested UCL to Use									
79			95% Student's-t UCL			51.99		combined				
80												
81			When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test									
82			When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL									
83												
84			Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
85			Recommendations are based upon data size, data distribution, and skewness.									
86			These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).									
87			However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									
88												

**UCL Statistics for Uncensored Full Data Sets**

**User Selected Options**

Date/Time of Computation ProUCL 5.111/28/2018 9:49:48 AM  
 From File ADL Statistics Poie Line.xls  
 Full Precision OFF  
 Confidence Coefficient 95%  
 Number of Bootstrap Operations 2000

**ADL 24-30**

**General Statistics**

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	24	Mean	34
Maximum	60	Median	30
SD	13.04	Std. Error of Mean	5.323
Coefficient of Variation	0.383	Skewness	2.193

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.**

**For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).**

**Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

Shapiro Wilk Test Statistic	0.703	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.394	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.325	Data Not Normal at 5% Significance Level	

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

<b>95% Normal UCL</b>		<b>95% UCLs (Adjusted for Skewness)</b>	
95% Student's-t UCL	44.73	95% Adjusted-CLT UCL (Chen-1995)	47.85
		95% Modified-t UCL (Johnson-1978)	45.52

**Gamma GOF Test**

A-D Test Statistic	0.799	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.698	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.37	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.332	Data Not Gamma Distributed at 5% Significance Level	

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

k hat (MLE)	10.63	k star (bias corrected MLE)	5.428
Theta hat (MLE)	3.197	Theta star (bias corrected MLE)	6.264
nu hat (MLE)	127.6	nu star (bias corrected)	65.14
MLE Mean (bias corrected)	34	MLE Sd (bias corrected)	14.59
		Approximate Chi Square Value (0.05)	47.57
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	42.2

	A	B	C	D	E	F	G	H	I	J	K	L
53	<b>Assuming Gamma Distribution</b>											
54	95% Approximate Gamma UCL (use when n>=50)		46.56		95% Adjusted Gamma UCL (use when n<50)		52.48					
55												
56	<b>Lognormal GOF Test</b>											
57	Shapiro Wilk Test Statistic		0.792		Shapiro Wilk Lognormal GOF Test							
58	5% Shapiro Wilk Critical Value		0.788		Data appear Lognormal at 5% Significance Level							
59	Lilliefors Test Statistic		0.349		Lilliefors Lognormal GOF Test							
60	5% Lilliefors Critical Value		0.325		Data Not Lognormal at 5% Significance Level							
61	Data appear Approximate Lognormal at 5% Significance Level											
62												
63	<b>Lognormal Statistics</b>											
64	Minimum of Logged Data		3.178		Mean of logged Data		3.479					
65	Maximum of Logged Data		4.094		SD of logged Data		0.318					
66												
67	<b>Assuming Lognormal Distribution</b>											
68	95% H-UCL		47		90% Chebyshev (MVUE) UCL		46.96					
69	95% Chebyshev (MVUE) UCL		52.92		97.5% Chebyshev (MVUE) UCL		61.19					
70	99% Chebyshev (MVUE) UCL		77.44									
71												
72	<b>Nonparametric Distribution Free UCL Statistics</b>											
73	Data appear to follow a Discernible Distribution at 5% Significance Level											
74												
75	<b>Nonparametric Distribution Free UCLs</b>											
76	95% CLT UCL		42.76		95% Jackknife UCL		44.73					
77	95% Standard Bootstrap UCL		41.76		95% Bootstrap-t UCL		68.35					
78	95% Hall's Bootstrap UCL		87.7		95% Percentile Bootstrap UCL		44					
79	95% BCA Bootstrap UCL		45.17									
80	90% Chebyshev(Mean, Sd) UCL		49.97		95% Chebyshev(Mean, Sd) UCL		57.2					
81	97.5% Chebyshev(Mean, Sd) UCL		67.24		99% Chebyshev(Mean, Sd) UCL		86.96					
82												
83	<b>Suggested UCL to Use</b>											
84	95% Student's-t UCL		44.73		or 95% Modified-t UCL		45.52					
85	or 95% H-UCL		47									
86	24-30"											
87	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
88	Recommendations are based upon data size, data distribution, and skewness.											
89	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
90	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
91												
92	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.											
93	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.											
94	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.											
95	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.											
96												



UCL Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation ProUCL 5.111/28/2018 9:49:18 AM  
 From File ADL Statistics Pole Line.xls  
 Full Precision OFF  
 Confidence Coefficient 95%  
 Number of Bootstrap Operations 2000

ADL 12-18

General Statistics

Total Number of Observations	7	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3	Mean	45
Maximum	99	Median	39
SD	35.43	Std. Error of Mean	13.39
Coefficient of Variation	0.787	Skewness	0.163

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.935	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.803	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.168	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.304	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL

95% UCLs (Adjusted for Skewness)

95% Student's-t UCL	71.02	95% Adjusted-CLT UCL (Chen-1995)	67.91
		95% Modified-t UCL (Johnson-1978)	71.16

Gamma GOF Test

A-D Test Statistic	0.608	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.728	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.278	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.32	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.972	k star (bias corrected MLE)	0.65
Theta hat (MLE)	46.31	Theta star (bias corrected MLE)	69.18
nu hat (MLE)	13.6	nu star (bias corrected)	9.107
MLE Mean (bias corrected)	45	MLE Sd (bias corrected)	55.79
		Approximate Chi Square Value (0.05)	3.392
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	2.428

	A	B	C	D	E	F	G	H	I	J	K	L
53	<b>Assuming Gamma Distribution</b>											
54	95% Approximate Gamma UCL (use when n>=50))					120.8				95% Adjusted Gamma UCL (use when n<50)		168.8
55												
56	<b>Lognormal GOF Test</b>											
57		Shapiro Wilk Test Statistic				0.782				Shapiro Wilk Lognormal GOF Test		
58		5% Shapiro Wilk Critical Value				0.803				Data Not Lognormal at 5% Significance Level		
59		Lilliefors Test Statistic				0.321				Lilliefors Lognormal GOF Test		
60		5% Lilliefors Critical Value				0.304				Data Not Lognormal at 5% Significance Level		
61	<b>Data Not Lognormal at 5% Significance Level</b>											
62												
63	<b>Lognormal Statistics</b>											
64		Minimum of Logged Data				1.099				Mean of logged Data		3.211
65		Maximum of Logged Data				4.595				SD of logged Data		1.482
66												
67	<b>Assuming Lognormal Distribution</b>											
68		95%.H-UCL				1656				90% Chebyshev (MVUE) UCL		153.6
69		95% Chebyshev (MVUE) UCL				196.9				97.5% Chebyshev (MVUE) UCL		256.9
70		99% Chebyshev (MVUE) UCL				374.9						
71												
72	<b>Nonparametric Distribution Free UCL Statistics</b>											
73	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
74												
75	<b>Nonparametric Distribution Free UCLs</b>											
76		95% CLT UCL				67.02				95% Jackknife UCL		71.02
77		95% Standard Bootstrap UCL				64.99				95% Bootstrap-t UCL		69.35
78		95% Hall's Bootstrap UCL				67.04				95% Percentile Bootstrap UCL		64.71
79		95% BCA Bootstrap UCL				64						
80		90% Chebyshev(Mean, Sd) UCL				85.17				95% Chebyshev(Mean, Sd) UCL		103.4
81		97.5% Chebyshev(Mean, Sd) UCL				128.6				99% Chebyshev(Mean, Sd) UCL		178.2
82												
83	<b>Suggested UCL to Use</b>											
84		95% Student's-t UCL				71.02						
85	<b>12-18</b>											
86	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
87	Recommendations are based upon data size, data distribution, and skewness.											
88	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
89	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
90												

**UCL Statistics for Uncensored Full Data Sets**

**User Selected Options**

Date/Time of Computation ProUCL 5.111/28/2018 10:01:04 AM  
 From File ADL Statistics Pole Line.xls  
 Full Precision OFF  
 Confidence Coefficient 95%  
 Number of Bootstrap Operations 2000

ADL 0-6

**General Statistics**

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	3	Mean	53.6
Maximum	96	Median	69
SD	41.63	Std. Error of Mean	18.62
Coefficient of Variation	0.777	Skewness	-0.432

**Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1**

**Normal GOF Test**

Shapiro Wilk Test Statistic	0.882	<b>Shapiro Wilk GOF Test</b>
5% Shapiro Wilk Critical Value	0.762	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.244	<b>Lilliefors GOF Test</b>
5% Lilliefors Critical Value	0.343	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

**Assuming Normal Distribution**

<b>95% Normal UCL</b>		<b>95% UCLs (Adjusted for Skewness)</b>	
95% Student's-t UCL	93.29	95% Adjusted-CLT UCL (Chen-1995)	80.39
		95% Modified-t UCL (Johnson-1978)	92.69

**Gamma GOF Test**

A-D Test Statistic	0.486	<b>Anderson-Darling Gamma GOF Test</b>
5% A-D Critical Value	0.691	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.324	<b>Kolmogorov-Smirnov Gamma GOF Test</b>
5% K-S Critical Value	0.364	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

k hat (MLE)	1.025	k star (bias corrected MLE)	0.543
Theta hat (MLE)	52.29	Theta star (bias corrected MLE)	98.64
nu hat (MLE)	10.25	nu star (bias corrected)	5.434
MLE Mean (bias corrected)	53.6	MLE Sd (bias corrected)	72.71
		Approximate Chi Square Value (0.05)	1.358
Adjusted Level of Significance	0.0086	Adjusted Chi Square Value	0.658

	A	B	C	D	E	F	G	H	I	J	K	L
53	<b>Assuming Gamma Distribution</b>											
54	95% Approximate Gamma UCL (use when n>=50))		214.5		95% Adjusted Gamma UCL (use when n<50)		442.5					
55												
56	<b>Lognormal GOF Test</b>											
57	Shapiro Wilk Test Statistic		0.83		Shapiro Wilk Lognormal GOF Test							
58	5% Shapiro Wilk Critical Value		0.762		Data appear Lognormal at 5% Significance Level							
59	Lilliefors Test Statistic		0.308		Lilliefors Lognormal GOF Test							
60	5% Lilliefors Critical Value		0.343		Data appear Lognormal at 5% Significance Level							
61	Data appear Lognormal at 5% Significance Level											
62												
63	<b>Lognormal Statistics</b>											
64	Minimum of Logged Data		1.099		Mean of logged Data		3.42					
65	Maximum of Logged Data		4.564		SD of logged Data		1.483					
66												
67	<b>Assuming Lognormal Distribution</b>											
68	95% H-UCL		17080		90% Chebyshev (MVUE) UCL		186.4					
69	95% Chebyshev (MVUE) UCL		240.6		97.5% Chebyshev (MVUE) UCL		315.9					
70	99% Chebyshev (MVUE) UCL		463.7									
71												
72	<b>Nonparametric Distribution Free UCL Statistics</b>											
73	Data appear to follow a Discernible Distribution at 5% Significance Level											
74												
75	<b>Nonparametric Distribution Free UCLs</b>											
76	95% CLT UCL		84.23		95% Jackknife UCL		93.29					
77	95% Standard Bootstrap UCL		81.2		95% Bootstrap-t UCL		87.83					
78	95% Hall's Bootstrap UCL		70.31		95% Percentile Bootstrap UCL		82.8					
79	95% BCA Bootstrap UCL		77.6									
80	90% Chebyshev(Mean, Sd) UCL		109.5		95% Chebyshev(Mean, Sd) UCL		134.8					
81	97.5% Chebyshev(Mean, Sd) UCL		169.9		99% Chebyshev(Mean, Sd) UCL		238.9					
82												
83	<b>Suggested UCL to Use</b>											
84	95% Student's-t UCL		93.29		(0-6)							
85												
86	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
87	Recommendations are based upon data size, data distribution, and skewness.											
88	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
89	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
90												
91	Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be											
92	reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.											
93												

	A	B	C	D	E	F	G	H	I	J	K	L
1	Outlier Tests for Selected Uncensored Variables											
2	User Selected Options											
3	Date/Time of Computation	ProUCL 5.111/28/2018 9:39:43 AM										
4		From File	ADL Statistics Pole Line.xls									
5		Full Precision	OFF									
6												
7												
8	Dixon's Outlier Test for ADL Combined Depths											
9												
10	Number of Observations = 21											
11	10% critical value: 0.391											
12	5% critical value: 0.44											
13	1% critical value: 0.524											
14												
15	1. Observation Value 450 is a Potential Outlier (Upper Tail)											
16												
17	Test Statistic: 0.792											
18												
19	For 10% significance level, 450 is an outlier.											
20	For 5% significance level, 450 is an outlier.											
21	For 1% significance level, 450 is an outlier.											
22												
23	2. Observation Value 3 is a Potential Outlier (Lower Tail)											
24												
25	Test Statistic: 0.000											
26												
27	For 10% significance level, 3 is not an outlier.											
28	For 5% significance level, 3 is not an outlier.											
29	For 1% significance level, 3 is not an outlier.											
30												

**UCL Statistics for Uncensored Full Data Sets**

**User Selected Options**

Date/Time of Computation ProUCL 5.111/28/2018 9:42:14 AM  
 From File ADL Statistics Pole Line.xls  
 Full Precision OFF  
 Confidence Coefficient 95%  
 Number of Bootstrap Operations 2000

ADL 0-6

**General Statistics**

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	3	Mean	119.7
Maximum	450	Median	76.5
SD	166.1	Std. Error of Mean	67.79
Coefficient of Variation	1.388	Skewness	2.172

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

**Normal GQF Test**

Shapiro Wilk Test Statistic	0.703	<b>Shapiro Wilk GOF Test</b>
5% Shapiro Wilk Critical Value	0.788	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.39	<b>Lilliefors GOF Test</b>
5% Lilliefors Critical Value	0.325	Data Not Normal at 5% Significance Level

**Data Not Normal at 5% Significance Level**

**Assuming Normal Distribution**

<b>95% Normal UCL</b>		<b>95% UCLs (Adjusted for Skewness)</b>	
95% Student's-t UCL	256.3	95% Adjusted-CLT UCL (Chen-1995)	295.4
		95% Modified-t UCL (Johnson-1978)	266.3

**Gamma GOF Test**

A-D Test Statistic	0.297	<b>Anderson-Darling Gamma GOF Test</b>
5% A-D Critical Value	0.726	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.236	<b>Kolmogorov-Smirnov Gamma GOF Test</b>
5% K-S Critical Value	0.345	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics**

k hat (MLE)	0.664	k star (bias corrected MLE)	0.443
Theta hat (MLE)	180.1	Theta star (bias corrected MLE)	270
nu hat (MLE)	7.972	nu star (bias corrected)	5.319
MLE Mean (bias corrected)	119.7	MLE Sd (bias corrected)	179.7
		Approximate Chi Square Value (0.05)	1.303
Adjusted Level of Significance	0.0122	Adjusted Chi Square Value	0.719

	A	B	C	D	E	F	G	H	I	J	K	L
53	<b>Assuming Gamma Distribution</b>											
54	95% Approximate Gamma UCL (use when n>=50)		488.7		95% Adjusted Gamma UCL (use when n<50)		885.8					
55												
56	<b>Lognormal GOF Test</b>											
57	Shapiro Wilk Test Statistic		0.944		Shapiro Wilk Lognormal GOF Test							
58	5% Shapiro Wilk Critical Value		0.788		Data appear Lognormal at 5% Significance Level							
59	Lilliefors Test Statistic		0.251		Lilliefors Lognormal GOF Test							
60	5% Lilliefors Critical Value		0.325		Data appear Lognormal at 5% Significance Level							
61	<b>Data appear Lognormal at 5% Significance Level</b>											
62												
63	<b>Lognormal Statistics</b>											
64	Minimum of Logged Data		1.099		Mean of logged Data		3.868					
65	Maximum of Logged Data		6.109		SD of logged Data		1.722					
66												
67	<b>Assuming Lognormal Distribution</b>											
68	95% H-UCL		36276		90% Chebyshev (MVUE) UCL		410.1					
69	95% Chebyshev (MVUE) UCL		532.4		97.5% Chebyshev (MVUE) UCL		702.2					
70	99% Chebyshev (MVUE) UCL		1036									
71												
72	<b>Nonparametric Distribution Free UCL Statistics</b>											
73	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
74												
75	<b>Nonparametric Distribution Free UCLs</b>											
76	95% CLT UCL		231.2		95% Jackknife UCL		256.3					
77	95% Standard Bootstrap UCL		220.4		95% Bootstrap-t UCL		531.7					
78	95% Hall's Bootstrap UCL		767.7		95% Percentile Bootstrap UCL		242.2					
79	95% BCA Bootstrap UCL		259.7									
80	90% Chebyshev(Mean, Sd) UCL		323		95% Chebyshev(Mean, Sd) UCL		415.2					
81	97.5% Chebyshev(Mean, Sd) UCL		543		99% Chebyshev(Mean, Sd) UCL		794.2					
82												
83	<b>Suggested UCL to Use</b>											
84	95% Adjusted Gamma UCL		885.8									
85												
86	<b>Recommended UCL exceeds the maximum observation</b>											
87												
88	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
89	Recommendations are based upon data size, data distribution, and skewness.											
90	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
91	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
92												

Ordinary Least Squares Linear Regression Output Sheet

User Selected Options

Date/Time of Computation	ProUCL 5.111/28/2018 9:50:59 AM
From File	ADL Statistics Pole Line.xls
Full Precision	OFF
Display Limits	False
Display Regression Diagnostics	False
Display Regression Tables	True
Title For Y vs X Plots	Classical Regression
Confidence Level for Regression Line	0.95
Display Confidence Band	True
Display Prediction Band	True

Dependant Variable (Y-Data) Soluble Y

Number Reported (Y values) 8

Independent Variable (x-data) Total Lead

Number Reported (x-values) 8

Regression Estimates and Inference Table

Parameter	Estimates	Std. Error	T-values	p-values
intercept	-0.143	0.742	-0.193	0.853
Total Lead	0.0342	0.00423	8.081	1.9234E-4

OLS ANOVA Table

Source of Variation	SS	DOF	MS	F-Value	P-Value
Regression	143.9	1	143.9	65.31	0.0002
Error	13.22	6	2.204		
Total	157.2	7			

R Square 0.916

Adjusted R Square 0.902

Sqrt(MSE) = Scale 1.485

Regression Table

Obs	Y Vector	Yhat	Residuals	Res/Scale
1	1.1	1.91	-0.81	-0.546
2	0	2.047	-2.047	-1.379
3	2.9	2.218	0.682	0.459
4	1.9	2.252	-0.352	-0.237
5	3	2.731	0.269	0.181
6	2.9	3.142	-0.242	-0.163
7	6	3.245	2.755	1.856
8	15	15.26	-0.255	-0.172



# PHASE II SITE ASSESSMENT

## Pole Line Ramp Structure Connection Project

Davis, California

### APPENDIX E

Photo Report





Photo 1: West boundary of project.

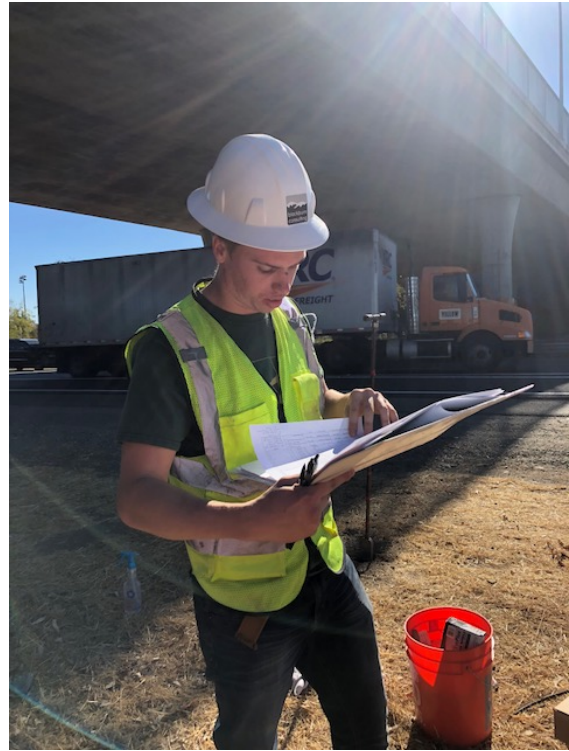


Photo 3: Sample location near pole Line Road overcrossing.



Photo 2: Sample location at Pole Line Road overcrossing.



Photo 4: View of existing bike path looking west.



Photo 5: View of existing bike path looking east.



Photo 6: View of bike path looking east.