Site Investigation Report of Findings

EPA Grant ID No. BF-96931601

Blue Lake Business Park
Blue Lake, California

Prepared for:

The City of Blue Lake, and
Humboldt County Administrative Offices,
Economic Development Team

SHN Consulting Engineers & Geologists, Inc.
812 W. Wabash Avenue
Eureka, CA 95501-2138
707-441-8855

December 2013
013066

Reference: 013066

Site Investigation Report of Findings

Blue Lake Business Park
Blue Lake, California
EPA Grant ID No. BF-96931601

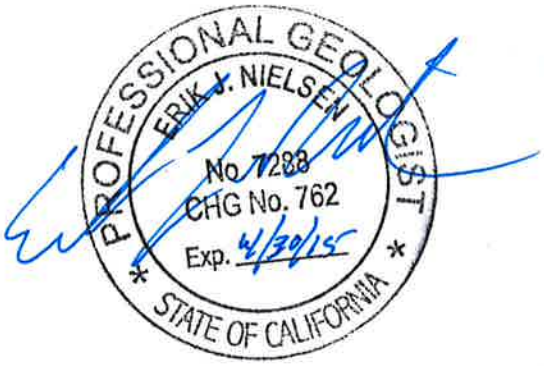
Prepared for:

The City of Blue Lake, and
Humboldt County Administrative Offices,
Economic Development Team

Prepared by:

Consulting Engineers & Geologists, Inc.
812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

December 2013



QA/QC: MKF____

\\Eureka\projects\2013\013066-BL-brownfield\PUBS\rpts\20131211-SIROF.doc

Executive Summary

Site investigation activities were conducted at the Blue Lake Business Park in Blue Lake, California, to assess subsurface conditions that may have been impacted by current and/or historical operations at the former mill site. SHN Consulting Engineers & Geologists, Inc. (SHN) implemented the approved Sampling and Analysis Plan (SAP) in September and October 2013, to determine the presence or absence, and relative concentrations (if present) of hazardous or regulated materials in shallow soils and groundwater. The assessor's parcels which were investigated include 025-201-002, 025-201-009, and 025-201-019, and portions of 312-161-015 and 312-161-018.

Twenty test pits and five soil borings were completed on the project parcels to collect soil samples at varying depths for chemical analysis. Each soil boring was then converted to a temporary well point to facilitate the collection of groundwater samples from the project area for chemical analysis. A total of forty-six soil samples and five groundwater samples were collected during site investigation activities. Each sample was submitted for laboratory analysis of petroleum hydrocarbons (diesel and motor oil) and metals (arsenic, cadmium, chromium, nickel, lead, and zinc). Additional testing completed on select soil and groundwater samples included volatile organic compounds, semi-volatile organic compounds, and dioxin and furans.

Only one soil sample collected from a soil boring location at a depth of 12 feet below ground surface exceeded SAP screening levels for diesel and motor oil. All other constituents of concern tested for in soil and groundwater samples were either below laboratory method detection limits or contained concentrations below screening levels proposed in the SAP (excluding arsenic). Arsenic levels identified in study area soils exceeded SAP screening levels, but were within the range for naturally occurring background arsenic concentrations in this area.

Observed levels of potential constituents of concern at this site show that the risk to human health and the environment is very low, and no ash was observed in subsurface soils during site investigation activities. It is recommended that, during future development activities, project personnel are familiar with site history and potential conditions that may be encountered. It may be necessary for development of a soil and groundwater contingency management plan to protect workers from possible exposure during future construction activities if conditions change noticeably.

Table of Contents

List of Illustrations

Abbreviations and Acronyms

"<"	denotes a value that is "less than" the method reporting limit
"-"	not analyzed
mg/kg	milligrams per kilogram
mg/L	milligrams per Liter
pg/L	picograms per liter
ug/L	micrograms per Liter
APN	assessor's parcel number
BGS	below ground surface
City, the	Blue Lake, California
EPA	United States Environmental Protection Agency
ESA	environmental site assessment
ESL	environmental screening level
FD	field duplicate
MSD	matrix-spike duplicates
NA	not analyzed
ND	not detected
NC	not calculated
NCL	North Coast Laboratories, Ltd.
TP-#	test pit-number
OVA	organic vapor analyzer
QA/QC	quality assurance/quality control
REC	recognized environmental conditions
RPD	relative percent difference
SAP	Sampling and Analysis Plan
SHN	SHN Consulting Engineers & Geologists, Inc.
STLC	soluble threshold limit concentration
SVOCs	semi-volatile organic compounds
TEQ	toxic equivalent
TP-#	test pit number
TPHD	total petroleum hydrocarbons as diesel
TPHMO	total petroleum hydrocarbons as motor oil
VOCs	volatile organic compounds
WET	waste extraction test
WHO	World Health Organization
WP-#	well point-number

1.0 Introduction

This report presents the results of site investigation activities conducted at the Blue Lake Business Park site, located in Blue Lake, California (Figure 1). The purpose of the site investigation was to assess subsurface conditions at the location of a proposed Business Park site (Figures 1 and 2). The assessor's parcels which were investigated include 025-201-002, 025-201-009, and 025-201-019, and portions of 312-161-015 and 312-161-018. SHN Consulting Engineers & Geologists, Inc. (SHN) completed site investigation activities and prepared this report on behalf of the City of Blue Lake (the City) and the Humboldt County Administrative Offices, Economic Development Team.

1.1 Background

The following operational site history is based on a review of aerial photos performed for the Phase I Environmental Site Assessment (ESA; SHN, 2011). In 1941, the subject parcels appear to be farmland, with a farmhouse situated on the eastern side of the business park, and adjacent to Hatchery Road. In the 1948 aerial photograph, the McIntosh Lumber Mill is located in the southeastern area of the business park and appears to be operational. Sometime between 1959 and 1966, the mill was reconstructed in the north central portion of the business park area.

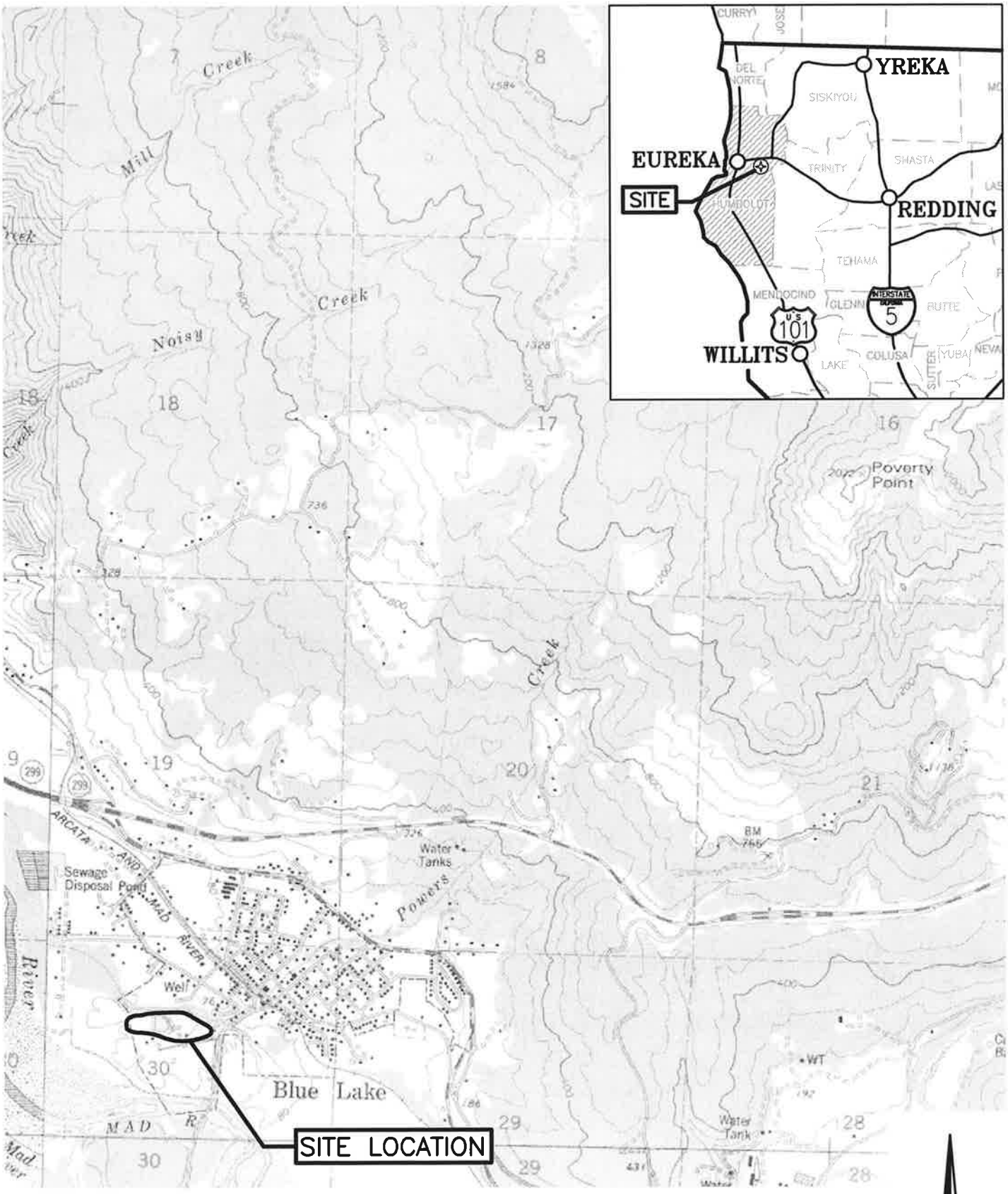
Around 1979, the mill was shut down and various facilities were removed. Mill facilities included a sawmill, planer mill, truck shop, a log pond, log and lumber storage, and teepee burners. Reportedly, the mill did not use wood treatment chemicals, and there was no dip tank or spray system (SHN, 2011).

Currently, the business park includes the City corporation yard, a power plant, a carbon generating facility, wood working facilities, a brewing company, and light industry and businesses with rental space available for non-retail use (SHN, 2011).

1.2 Recognized Environmental Conditions

Based upon information gathered during the Phase I ESA, certain parcels required additional investigation to determine if the soil or groundwater beneath the parcel has been impacted by current and/or historical operations. A summary of recognized environmental conditions (RECs) identified in the Phase I ESA included:

- **REC 1:** The City corporation yard's southern parcel (assessor's parcel number [APN] 025-201-009) included the former mill truck shop, which is now the public works maintenance shop. Additionally, fueling historically occurred, and still occurs in the southeast portion of the corporation yard.
- **REC 2:** The City corporation yard's northern parcel (APN 025-201-019) is currently used for storage of equipment and materials, but historically included a truck shop.
- **REC 3:** The parcel located northwest of the corporation yard (APN 025-201-002) is where the City currently dumps green waste, soil and gravel, and construction debris. The debris piles had evidence of painted wood, creosote-treated wood, asphalt and concrete pieces, and pieces of scrap metal. Furthermore, the Phase I ESA indicated that the former log pond was situated on a portion of this parcel. The log pond was filled with rock, soil, asphalt, woody debris, and ash from the former teepee burner.
- **REC 4:** The parcel situated west of the corporation yard and Monda Way (APN 025-201-006) included the former log pond. The log pond was filled with rock, soil, asphalt, woody debris, and ash from the former teepee burner. This parcel was investigated in March 2013, and no significant constituents of concern were identified (SHN, April 2013).



SOURCE: BLUE LAKE USGS
7.5 MINUTE QUADRANGLE

1"=2000'±

Consulting Engineers & Geologists, Inc.	City of Blue Lake Blue Lake Business Park Blue Lake, California		Site Location Map Phase II ESA SHN 013066
	May 2013	013066-SITE-LCTN	Figure 1

\\Zing\projects\2013\013066-BL-brownfield\Dwgs , SAVED: 5/15/2013 10:33 AM CNEWELL, PLOTTED: 10/31/2013 4:43 PM, NATHAN DOWNEY

EXPLANATION

— — SOUTHERN BOUNDARY OF INVESTIGATION AREA (PARCELS 312-161-018 & -015

N

0 100

1"=100'

NOTE: ALL LOCATIONS ARE APPROXIMATE

SHN Consulting Engineers & Geologists, Inc.

City of Blue Lake Blue Lake Business Park Blue Lake, California		Site Plan Phase II ESA SHN 013066
May 2013	013066-SITE	Figure 2

- **REC 5:** Parcels situated south of Powers Creek and north of Taylor Way (APNs 312-161-015 and -018) also included the former log pond. The log pond was filled with rock, soil, asphalt, woody debris, and ash from the former teepee burner. Also, SHN did notice a large concrete structure on the northern portion of the parcel, which was the former log dump.

1.3 Objective

The objective of the work, as outlined in the approved Sampling and Analysis Plan (SAP; SHN, August 2013), was to determine the presence or absence, and relative concentrations (if present) of hazardous or regulated materials in shallow soils at the site, and characterize shallow groundwater quality.

1.4 Scope of Work

The scope of work presented in this section was intended to meet the objectives defined above. All work was conducted in general accordance with the SAP and the site Health and Safety Plan developed for this project (SHN, May 2013).

The scope of work was defined as:

- Project implementation, including subcontractor coordination and permit acquisition;
- agency coordination and Underground Service Alert notification;
- excavation of four test pits per parcel (20 total test pits);
- installation of five temporary well points;
- collection of soil samples from test pits and temporary well point soil borings;
- collection of groundwater samples from temporary well points; and
- preparation of this report of findings for site investigation activities.

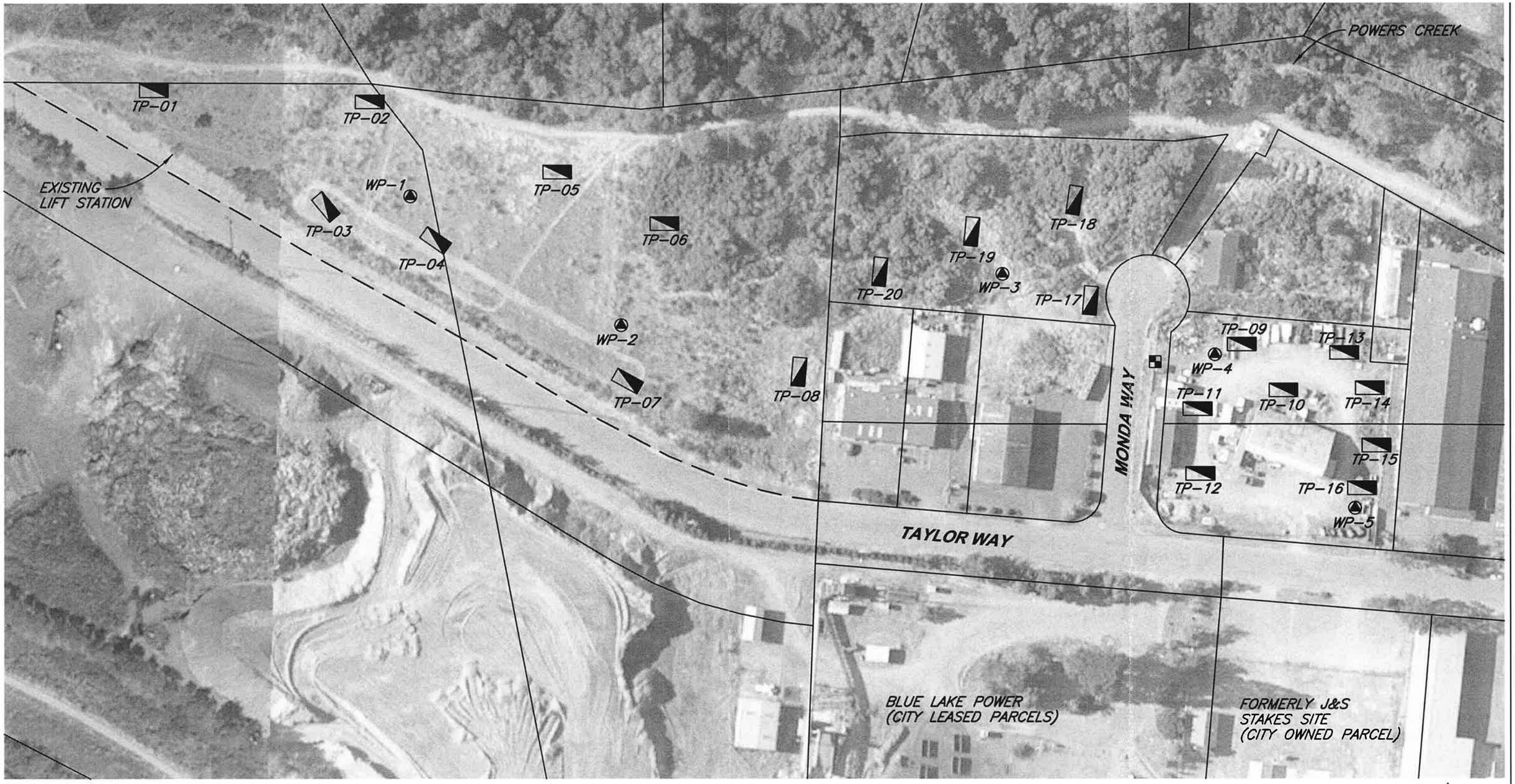
2.0 Site Investigation Activities

2.1 Test Pit Excavation

Twenty test pits were completed within the five project parcels (see Figure 3) to observe shallow soils and collect soil samples (TP-1 to TP-20). Test pits were excavated using a backhoe to a depth of approximately four to ten feet below ground surface (BGS). Soil was sampled from each test pit sidewall at two depth intervals focusing on material that appeared to provide evidence of previous working surfaces or below-clean fill imported after mill closure. Samples were collected from the backhoe bucket when test pit excavation depth exceeded four feet BGS.

Stainless steel trowels were used to collect soil samples for placement in laboratory supplied containers in accordance with methods described in the SAP. Soil samples were then placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory. Soil samples were analyzed for the constituents described in the "Laboratory Analysis" section of this report.

A description of each test pit and sample characteristics was completed in the field for lithologic description. In addition, an organic vapor analyzer (OVA) was used to measure the volatile organic compounds in each sample collected in the field. Test pit excavation field notes are included in Appendix A and test pit excavation logs are included in Appendix B.



EXPLANATION

- — — SOUTHERN BOUNDARY OF INVESTIGATION AREA (PARCELS 312-161-018 & -015
- WP-2 SOIL BORING/TEMPORARY WELL POINT LOCATION AND DESIGNATION
- TP-10 TEST PIT LOCATION AND DESIGNATION
- FORMER SUPPLY WELL (STATUS UNKNOWN)

N

0 100

1"=100'

NOTE: ALL LOCATIONS ARE APPROXIMATE

SHN Consulting Engineers & Geologists, Inc.	City of Blue Lake Blue Lake Business Park Blue Lake, California	Investigation Locations Phase II ESA SHN 013066
	November 2013 / 013066-INVEST-LCTN	Figure 3

2.2 Soil Borings

One soil boring was installed on each parcel using a direct push drill rig to characterize deeper soil and identify shallow groundwater depth (WP-1 to WP-5). One soil sample was collected from each boring at the soil/groundwater interface for laboratory analysis. One additional sample was collected from well point soil boring WP-3 at a depth of 12 feet BGS.

Soil samples were collected using the Geoprobe® Dual Tube sampling system. Each boring was continuously cored in four-foot sections using a hollow, steel sampler lined with 1.25-inch Inside Diameter plastic tubes. Following retrieval of the sampler, the plastic tube was removed and the core was visually inspected for lithologic interpretation and identification of possible areas of contamination. In addition to visual inspection of the cored material, soil samples were screened in the field using an OVA.

Soil samples were removed from the core tubes and placed in laboratory supplied containers in accordance with methods described in the SAP. Soil samples were then placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory. Soil samples were analyzed for the constituents described in the "Laboratory Analysis" section. Soil boring field notes are included in Appendix A and soil boring logs are included in Appendix B.

2.3 Temporary Well Point Installation

Upon reaching the desired depth, ranging from 24 to 28 feet BGS, a temporary well point was installed in each borehole for the collection of a groundwater sample. The temporary well points consisted of ¾-inch diameter Schedule 40 polyvinyl chloride well casing and 10 feet of well screen.

Prior to sampling at each temporary well point, each well point was measured for depth-to-water and total well depth, and checked for the presence of light non-aqueous phase liquid (none was observed). Each well point was measured for electrical conductivity, pH, and temperature during purging activities using portable instrumentation.

The well points were purged and sampled using a peristaltic pump and new disposable tubing. The groundwater samples were decanted directly into laboratory-supplied sample containers and labeled with location, date and time of collection, and analysis requested. Each sample was then placed in an iced cooler, and transported under chain-of-custody documentation to a State of California-certified analytical laboratory. Groundwater samples were analyzed for constituents described in the "Laboratory Analysis" section.

Following the collection of soil and groundwater samples at each boring location, the well casing was removed and the boreholes were backfilled with bentonite chips and capped to match the existing surface conditions. Field notes for temporary well point groundwater sampling are included in Appendix A and well construction diagrams are contained in the boring logs provided in Appendix B.

2.4 Laboratory Analysis

Soil and groundwater samples were analyzed for the following constituents:

- total petroleum hydrocarbons as diesel (TPHD) and as motor oil (TPHMO), using U.S. Environmental Protection Agency (EPA) Method 8015B with silica gel cleanup; and

- metals-arsenic, cadmium, chromium, nickel, lead, and zinc, using EPA Method 6010B (soil) or 200.8 Rev 5.4 (groundwater).

In addition, based on field observations, select soil and/or groundwater samples were analyzed for:

- dioxin and furans by EPA Method 1613,
- volatile organic compounds (VOCs) by EPA Method 8260B, and
- semi-volatile organic compounds (SVOCs) by EPA Method 8270C-SIM.

All soil and groundwater samples collected during this investigation were submitted to North Coast Laboratories, Ltd. (NCL), a state-certified analytical laboratory. NCL performed analyses for TPHD, TPHMO, metals, and VOCs. Dioxin/furan analyses were subcontracted to Test America and SVOC analysis to Calscience Laboratories.

2.5 Equipment Decontamination Procedures

All boring equipment was cleaned prior to being taken onsite. All direct-push equipment and small equipment that required onsite cleaning was cleaned using the triple wash system. All non-disposable downhole water sampling equipment was cleaned prior to being taken onsite and between sampling locations using the triple wash system. The equipment was first washed in a water solution containing Liquinox® cleaner and followed by two distilled water rinses.

2.6 Investigation Derived Materials Handling

Following soil sampling at each test pit, the soil was placed back into the test pit and compacted with the backhoe bucket. The small volume of soil from the soil borings was spread onsite. Purge water generated from the temporary well point sampling and equipment decontamination water was transported to SHN's purge water storage tank in Eureka, California, for temporary storage and characterization. The water will be discharged, under permit, to the City of Eureka wastewater collection system.

3.0 Results of the Site Investigation

This section presents the results of the soil and groundwater samples collected and observations of subsurface characteristics during the site investigation. Complete laboratory analytical reports are included in Appendix C.

3.1 Soil Analytical Results

Laboratory analytical results from soil samples collected during September and October 2013 site investigation activities are presented in Tables 1 and 2. Analytical results from select samples tested for soluble metals are presented in Table 3.

Table 1
Soil Analytical Results: Petroleum Hydrocarbons, September and October 2013
Blue Lake Business Park, Blue Lake, California
(in mg/kg)[1]

Sample Location	Depth (feet BGS)[2]	TPHMO[3]	TPHD[3]	Sample Location	Depth (feet BGS)	TPHMO	TPHD
WP-1	15.0	<10[4]	<1.0	WP-4	15.5	<10	<1.0
WP-2	18.0	<10	<1.0	WP-5	12.0	<10	<1.0
WP-3	12.0	**2,800**	**1,600**	WP-6	12.0	<10	<1.0
WP-3	19.0	<10	<1.0				
TP-01	1.5	<10	<1.0	TP-11	1.0	**22**[5]	**5.7**[6]
TP-01	3.0	<10	<1.0	TP-11	3.0	**110**	<1.0
TP-02	1.0	**47**	**4.4**[6]	TP-12	1.0	**490**	**19**[6]
TP-02	3.0	<10	<1.0	TP-12	3.0	<10	<1.0
TP-03	1.0	<10	<1.0	TP-13	1.0	**160**	**7.4**[6]
TP-03	3.0	<10	<1.0	TP-13	3.0	<10	<1.0
TP-04	1.0	<10	**1.1**[6]	TP-14	1.0	**23**	**1.1**[6]
TP-04	3.75	<10	<1.0	TP-14	3.0	<10	<1.0
TP-05	1.0	<10	<1.0	TP-14	3.0 (FD)[7]	<10	<1.0
TP-05	3.0	<10	<1.0	TP-15	1.0	**1,300**	**36**[6]
TP-06	1.5	**39**	**15**[6]	TP-15	3.0	**22**	<1.0
TP-06	1.5 (FD)	**40**	**7.7**	TP-16	1.0	**120**	**4.1**[10]
TP-06	3.5	**82**	**15**[6]	TP-16	3.0	<10	<1.0
TP-07	1.5	<10	<1.0	TP-17	1.0	**27**	**1.3**[6]
TP-07	3.5	<10	<1.0	TP-17	3.0	<10	<1.0
TP-08	1.5	**18**	<1.0	TP-18	8.0	**110**	**5.4**[6]
TP-08	3.0	<10	<1.0	TP-18	10.0	**28**	<1.0
TP-09	1.0	<10	<1.0	TP-19	4.5	**20**	**1.0**[6]
TP-09	3.0	<10	<1.0	TP-19	6.0	**32**	<1.0
TP-10	1.0	**1,000**	**19**[6]	TP-20	1.0	<10	<1.0
TP-10	3.0	<10	<1.0	TP-20	1.0 (FD)	<10	<1.0
TP-10	3.0 (FD)	<10	<1.0	TP-20	3.0	<10	<1.0
Soil screening levels[8]		**2,500**	**83**	**Soil screening levels**		**2,500**	**83**

1. mg/kg: milligrams per kilogram
2. BGS: below ground surface
3. Total petroleum hydrocarbons as motor oil (TPHMO) and as diesel (TPHD) analyzed in general accordance with EPA Method No. 8015B. Samples containing material were passed through a silica gel column.
4. <: "less than" the stated method reporting limit
5. The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range.
6. The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.
7. FD: field duplicate collected in the field
8. Soil screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

One soil sample collected during site investigation activities from test pit TP-09 at a depth of one-foot below grade was additionally analyzed for VOCs and SVOCS. The results showed that all VOCs were below laboratory detection limits, and the SVOCs identified included naphthalene and phenanthrene, at concentrations of 0.029 milligrams per kilogram (mg/kg) and 0.024 mg/kg, respectively.

Table 2
Soil Analytical Results: Metals[1], September and October 2013
Blue Lake Business Park, Blue Lake, California
(in mg/kg)[2]

Sample Location	Depth (feet BGS)[3]	Arsenic	Cadmium	Chromium	Lead	Nickel	Zinc
WP-1	15.0	3.7	<1.0[4]	38	4.7	49	40
WP-2	18.0	3.0	<1.0	47	5.9	51	48
WP-3	12.0	3.0	<1.0	36	16	49	49
WP-3	19.0	2.3	<1.0	59	5.5	57	47
WP-4	15.5	4.7	<1.0	39	5.3	49	46
WP-5	12.0	3.9	<1.0	41	5.8	50	47
WP-6	12.0(FD)[5]	4.3	<1.0	40	6.3	52	48
TP-01	1.5	5.0	<1.0[5]	52	6.8	61	51
TP-01	3.0	4.2	<1.0	47	5.5	58	51
TP-02	1.0	4.3	<1.0	45	5.2	40	42
TP-02	3.0	4.6	<1.0	49	5.7	56	51
TP-03	1.0	3.7	<1.0	54	5.9	63	50
TP-03	3.0	4.3	<1.0	63	5.6	76	54
TP-04	1.0	3.0	<1.0	41	4.3	40	41
TP-04	3.75	3.5	<1.0	47	5.6	56	47
TP-05	1.0	3.1	<1.0	35	4.9	38	45
TP-05	3.0	3.7	<1.0	50	5.9	60	48
TP-06	1.5	3.5	<1.0	38	6.3	38	42
TP-06	1.5 (FD)	3.3	<1.0	35	4.7	36	38
TP-06	3.5	2.9	<1.0	35	5.7	37	42
TP-07	1.5	3.4	<1.0	44	5.3	49	46
TP-07	3.5	4.7	<1.0	71	6.2	78	55
TP-08	1.5	5.0	<1.0	53	9.0	5.8	61
TP-08	3.0	4.3	<1.0	56	5.7	56	50
TP-09	1.0	5.1	<1.0	48	6.0	58	50
TP-09	3.0	6.0	<1.0	54	9.4	64	59
TP-10	1.0	4.1	<1.0	43	14	49	73
TP-10	3.0	3.8	<1.0	47	6.1	62	51
TP-10	3.0 (FD)	5.0	<1.0	50	6.7	61	50
TP-11	1.0	3.8	<1.0	56	5.9	52	46
TP-11	3.0	5.2	<1.0	54	7.2	64	57
TP-12	1.0	3.4	<1.0	34	19	33	42
TP-12	3.0	4.7	<1.0	46	6.1	55	50
TP-13	1.0	4.5	<1.0	63	23	64	89
TP-13	3.0	5.1	<1.0	59	6.6	63	54
TP-14	1.0	5.2	<1.0	93	22	93	78
TP-14	3.0	6.1	<1.0	61	6.8	79	56
TP-14	3.0 (FD)	5.7	<1.0	65	7.5	75	55
TP-15	1.0	4.8	<1.0	46	93	61	110
TP-15	3.0	3.7	<1.0	43	8.9	52	61
TP-16	1.0	5.7	<1.0	46	15	46	54
TP-16	3.0	4.9	<1.0	40	5.6	47	50
TP-17	1.0	4.1	<1.0	45	8.0	51	52

Table 2
Soil Analytical Results: Metals[1], September and October 2013
Blue Lake Business Park, Blue Lake, California
(in mg/kg)[2]

Sample Location	Depth (feet BGS)[3]	Arsenic	Cadmium	Chromium	Lead	Nickel	Zinc
TP-17	3.0	**4.3**	<1.0	**46**	**5.9**	**59**	**46**
TP-18	8.0	**5.7**	<1.0	**52**	**20**	**59**	**68**
TP-18	10.0	**6.1**	<1.0	**57**	**8.6**	**62**	**53**
TP-19	4.5	**4.5**	<1.0	**54**	**15**	**62**	**71**
TP-19	6.0	**3.9**	<1.0	**48**	**11**	**49**	**61**
TP-20	1.0	**5.0**	<1.0	**52**	**5.4**	**59**	**48**
TP-20	1.0 (FD)	**3.9**	<1.0	**46**	**5.3**	**57**	**48**
TP-20	3.0	**5.0**	<1.0	**41**	**6.0**	**52**	**46**
Soil screening levels[6]		**1.5**	**7.4**	**1,400**	**750**	**150**	**600**

1. Metals analyzed in general accordance with EPA Method No. 6010B
2. mg/kg: milligrams per kilogram
3. BGS: below ground surface
4. <: "less than" the stated method reporting limit
5. FD: field duplicate collected in the field
6. Soil screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

Soil samples with constituents above applicable waste standards for total metal concentrations were additionally subjected to leachability testing. Five soil samples collected during the site investigation were analyzed by waste extraction test (WET) using deionized water for either chromium and lead for comparison to soluble threshold limit concentrations (STLCs).

Table 3
Soil Analytical Results: Soluble Metals, September and October 2013
Blue Lake Business Park, Blue Lake, California

Sample Location	Depth (feet BGS)[1]	Total Chromium[2] (mg/kg)[3]	STLC Chromium[4] (mg/L)[5]	Total Lead[2] (mg/kg)	STLC Lead[4] (mg/L)
WP-3	12.0	**36**	<0.200[6]	**16**	--[7]
TP-03	3.0	**63**	<0.200	**5.6**	--
TP-07	3.5	**71**	<0.200	**6.2**	--
TP-14	1.0	**93**	<0.200	**22**	--
TP-15	1.0	**46**	--	**93**	**4.1**
Soil screening levels[8]		**50[9]**	**5.0**	**50[9]**	**5.0**

1. BGS: below ground surface
2. Total metals analyzed using EPA Method No. 6010B
3. mg/kg: milligrams per kilogram
4. STLC: soluble threshold limit concentration, extracted as described in Title 22, CCR 66261.126 Appendix II (CAM WET), analyzed using EPA Method No. 6010B
5. mg/L: milligrams per liter
6. < : "less than" the stated method reporting limit
7. -- : not analyzed
8. Soil screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)
9. STLC extraction required if total metal concentration is greater than or equal to the stated limit

3.2 Groundwater Analytical Results

Laboratory analytical results from groundwater samples collected during September 2013 site investigation activities are presented in Tables 4 and 5. Dioxin results from the groundwater sample collected from well point location WP-3 are presented in Table 6.

Table 4
Well Point-Groundwater Analytical Results, September 26, 2013
Blue Lake Business Park, Blue Lake, California
(in ug/L)[1]

Sample ID	TPHMO[2]	TPHD[2]	TPHG[3]	VOCs[3]	SVOCs[4]
WP-1	<170[5]	<50	NA[6]	NA	NA
WP-2	<170	<50	NA	NA	NA
WP-3	<170	<50	<50	ND[7]	ND
WP-4	<170	<50	NA	NA	NA
WP-5	<170	<50	NA	NA	NA
WP-6 (FD)[8]	<170	<50	NA	NA	NA
Screening levels[9]	**170**	**100**	**100**	**Varies**	**Varies**

1. ug/L: micrograms per liter
2. Total petroleum hydrocarbons as motor oil (TPHMO) and as diesel (TPHD) analyzed in general accordance with EPA Method No. 3511/8015B. Samples containing material were passed through a silica gel column.
3. Total petroleum hydrocarbons as gasoline (TPHG) and volatile organic compounds (VOCs) analyzed in general accordance with EPA Method No. 8260B Modified. See the laboratory report for a full list of constituents and reporting limits.
4. Semi-volatile organic compounds (SVOCs) analyzed in general accordance with EPA Method No. 8270C SIM. See the laboratory report for a full list of constituents and reporting limits.
5. < : "less than" the stated method reporting limit
6. NA: not analyzed
7. ND: not detected
8. FD: field duplicate collected in the field
9. Groundwater screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

Table 5
Well Point-Groundwater Analytical Results: Metals[1], September 26, 2013
Blue Lake Business Park, Blue Lake, California
(in ug/L)[2]

Sample ID	Arsenic	Cadmium	Chromium	Lead	Nickel	Zinc
WP-1	<2.0[3]	<1.0	<1.0	<1.0	**5.8**	**7.9**
WP-2	<2.0	<1.0	<1.0	<1.0	<5.0	**8.3**
WP-3	<2.0	<1.0	<1.0	<1.0	<5.0	<5.0
WP-4	<2.0	<1.0	<1.0	<1.0	**5.4**	<5.0
WP-5	<2.0	<1.0	<1.0	<1.0	<5.0	**5.4**
WP-6 (FD)[4]	<2.0	<1.0	<1.0	<1.0	<5.0	<5.0
Screening levels[5]	**5**	**5**	**50**	**15**	**100**	**5,000**

1. Dissolved metals analyzed in general accordance with EPA Method No. 200.8 Rev 5.4
2. ug/L: micrograms per liter
3. < : "less than" the stated method reporting limit
4. FD: field duplicate collected in the field
5. Groundwater screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

One groundwater sample collected during site investigation activities was additionally tested for dioxin and furans. Dioxin and Furan results from the groundwater sample collected from well point WP-3 are presented in Table 6.

Table 6
Well Point-Groundwater Analytical Results: Dioxins and Furans[1], September 26, 2013
Blue Lake Business Park, Blue Lake, California
(in pg/L)[2]

Sample ID	WP-3
2, 3, 7, 8-TCDD	<9.9[3]
2, 3, 7, 8-TCDF	<9.9
1, 2, 3, 7, 8-PeCDD	<50
1, 2, 3, 7, 8-PeCDF	<50
2, 3, 4, 7, 8-PeCDF	**4.5 J[4]**
1, 2, 3, 4, 7, 8-HxCDD	**8.0 J**
1, 2, 3, 6, 7, 8-HxCDD	**9.7 J q[5] B[6]**
1, 2, 3, 7, 8, 9-HxCDD	**9.3 J q**
1, 2, 3, 4, 7, 8-HxCDF	**8.9 J B**
1, 2, 3, 6, 7, 8-HxCDF	**9.0 JB**
1, 2, 3, 7, 8, 9-HxCDF	**8.6 J q B**
2, 3, 4, 6, 7, 8-HxCDF	**11 J B**
1, 2, 3, 4, 6, 7, 8-HpCDD	**15 J B**
1, 2, 3, 4, 6, 7, 8-HpCDF	**11 J q B**
1, 2, 3, 4, 7, 8, 9-HpCDF	**16 J B**
OCDD	**36 J B**
OCDF	**31 J B**
Total TCDD	<9.9
Total TCDF	<9.9
Total PeCDD	<50
Total PeCDF	**4.5 J**
Total HxCDD	**27 J q B**
Total HxCDF	**38 J q B**
Total HpCDD	**15 J B**
Total HpCDF	**27 J q B**
WHO 2005 Total TEQ[7]	**8.3**
Screening level[8]	**30**

1. Dioxins and furans in groundwater samples were analyzed using EPA Method 1613B.
2. pg/L: picograms per liter
3. <: "less than" the stated method reporting limit
4. J: Result is less than the reporting limit, but greater than or equal to the method detection limit and the concentration is an approximate value.
5. q: The isomer is qualified as positively identified, but an estimated quantity because the quantitation is based on theoretical ratio for these samples.
6. B: Compound was found in the blank and samples.
7. WHO: World Health Organization 2005 Total Toxic Equivalent (TEQ): 2,3,7,8-tetrachlorobenzeno-p-dioxin (TCDD) toxic equivalent.
8. Groundwater screening level proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

3.3 Site Geology

Subsurface soils encountered during site investigation activities consisted primarily of fill material comprised of rounded gravels with sand and fines (silt and clay) to a depth of approximately 8 to 10 feet in undeveloped parcels, and 4 to 5 feet BGS in the City corporation yard. Some debris consisting of wood and metal fragments were additionally identified in the excavation test pits completed in the undeveloped parcels.

3.4 Hydrogeology

Depth-to-water encountered in the temporary well points ranged from 17 to 20 feet BGS. Although a survey for depth-to-water elevation was not completed, groundwater flow is assumed to be in a southerly direction, toward the Mad River.

3.5 Quality Control and Data Validation

Nine laboratory reports were submitted by NCL to SHN (See Appendix C) and were validated by SHN staff. A copy of the laboratory report evaluation checklist can be found in the SAP. All laboratory QC batches were checked to ensure that the correct number of samples were analyzed, the holding times were not exceeded, surrogates recoveries were within the stated control limits, and that the laboratory method blank, matrix spikes (MS), matrix-spike duplicates (MSD), laboratory control samples, and laboratory control samples duplicates were all tested and within the acceptable limits.

All soil and groundwater samples were analyzed within the recommended holding times. All samples were received at the analytical laboratory in coolers with ice at temperatures below 6° Celsius.

Duplicate soil samples were collected from TP-06-1.5, TP-10-3.0, TP-14-3.0, TP-20-1.0, and WP-5-12-16. A duplicate groundwater sample was collected from well point location WP-3.

Relative percent differences (RPDs) were calculated for all constituents of concern for each sample with a corresponding sample duplicate. However, RPD was not calculated for samples with results below the method reporting limit. The RPD is used to evaluate the precision of the analytical results and is calculated using the following equation:

$$RPD = \frac{2(S_1 - S_2)}{S_1+S_2} \times 100$$

Where: RPD: Relative Percent Difference
S_1: Sample
S_2: Duplicate

RPDs for soil duplicates are presented in Table 7. No constituents of concern were detected in duplicate groundwater samples.

Table 7
Relative Percent Difference for Soil Field Duplicate Samples
Blue Lake Business Park, Blue Lake, California

Sample Identification	Sample Date	TPHMO[1]	TPHD[1]	Chromium[2]	Lead[2]	Nickel[2]	Zinc[2]
TP-06-1.5 / TP-06A-1.5	10/1/13	2.5%	64.3%	8.2%	29.1%	5.4%	10%
TP-10-3.0 / TP-10A-3.0	10/1/13	NC[3]	NC	6.2%	9.4%	1.6%	2.0%
TP-14-3.0 / TP-14A-3.0	10/1/13	NC	NC	6.3%	9.8%	5.2%	1.8%
TP-20-1.0 / TP-20A-1.0	10/2/13	NC	NC	12.2%	1.9%	3.4%	0%
WP-5@12-16 / WP-6@12-16	9/25/13	NC	NC	2.5%	8.3%	3.9%	2.1%

1. Total petroleum hydrocarbons as motor oil (TPHMO) and as diesel (TPHD), analyzed in general accordance with EPA Method No. 8015B
2. Metals analyzed in general accordance with EPA Method No. 6010B or 200.8 Rev 5.4
NC: not calculated; relative percent difference was not calculated for samples with results below the method reporting limit.

The quality assurance goals for RPDs proposed in the SAP for precision do not apply to field duplicates of soil and are provided for reference only (SAP, August 2013).

RPDs for MS/MSD exceeded quality assurance goals for SVOC analysis with EPA Method No. 8270C in the laboratory analytical report for soil sample TP-09-1.0 (Appendix C). However, the MS/MSD was not a project sample, so the results were accepted.

TPHMO was detected in the equipment blank collected on September 25, 2013, at a concentration of 220 micrograms per liter (ug/L). TPHMO was not detected above laboratory reporting limits in the sample collected following collection of the equipment blank.

RPD for the field duplicate water sample collected from well point WP-5 (WP-6) was not conducted due to all testing results below laboratory method detection limits.

Complete laboratory analytical reports are included in Appendix C.

4.0 Discussion of Findings

The highest concentrations of petroleum hydrocarbons in soil were detected in well point soil boring location WP-3 at a depth of 12 feet BGS. Concentrations of TPHMO and TPHD were identified at 2,800 mg/kg and 1,600 mg/kg, respectively, which exceeded the SAP screening levels. This well point boring location is north of Monda Way, in APN 025-201-006. The test pit soil samples collected from nearby locations on this parcel were either below laboratory method detection limits for TPHD and TPHMO, or contained concentrations below screening levels proposed in the SAP.

No VOCs were detected above laboratory detection limits in the soil sample collected from test pit location TP-09 at a depth of one-foot below grade. SVOCs identified in test pit TP-09 soil sample

included naphthalene and phenanthrene at concentrations well below their respective screening levels of 2.8 mg/kg and 40 mg/kg.

Detections of metals in soil were all below the SAP screening levels (excluding arsenic). Arsenic concentrations identified in site soils are within the range of naturally occurring background levels (Bradford, G.R. et al., 1996). Total metals that exceeded applicable waste standards were additionally tested for leachability with results indicating that the soil is not considered a hazardous waste.

No petroleum hydrocarbons were detected above laboratory detection limits in the groundwater samples collected from well point locations during the site investigation. The groundwater sample collected from well point WP-3 showed no detectable concentrations for VOCs or SVOCs. Results of metals analysis for groundwater samples identified only low levels of nickel and zinc, with all concentrations below SAP screening levels. The analysis of dioxins and furans for the water sample collected form well point WP-3 showed toxic equivalent (TEQ) levels were below the SAP screening level of 30 picograms per liter (pg/L).

Project objectives have been completed for the Blue Lake Business Park with the goal of identifying hazards to protect worker safety during future site development and material handling that included:

1. Determine the presence or absence, and relative concentrations (if present) of hazardous or regulated materials in shallow soils at the site.
2. Characterize shallow groundwater quality.

Observed levels of constituents of concern at this site show that the risk to human health and the environment is very low. One soil sample collected from boring location WP-3 at a depth of 12 feet BGS exceeded SAP screening levels for TPHMO and TPHD. No other soil samples collected from this parcel at shallower depths exceeded SAP screening levels for TPHMO and TPHD. In addition, the groundwater sample collected from well point location WP-3 was non-detect for all petroleum hydrocarbons and VOCs further indicating the constituents of concern are localized and not widespread. No ash was observed in any subsurface soils during site investigation activities.

It is recommended that during future development activities, project personnel are familiar with site history and potential conditions that may be encountered. It may be necessary for development of a soil and groundwater contingency management plan to protect workers from possible exposure during future site construction activities if conditions noticeably change.

5.0 References Cited

Bradford, G.R., A.C. Chang, A.L. Page, D. Bakhtar, J.A. Frampton, H. Wright (March 1996). "Background Concentrations of Trace and Major Elements in California Soils." Riverside:Kearney Foundation of Soil Science Division of Agriculture and Natural Resources, University of California.

SHN Consulting Engineers & Geologists, Inc. (April 2011). "Phase I Environmental Site Assessment, Blue Lake, California." Eureka:SHN.

---. (April 2013). "Subsurface Investigation Report of Findings, Blue Lake Business Park-Monda Way Parcel, Blue Lake, California; APN 025-201-006." Eureka:SHN.

---. (May 2013). "Site Safety Plan, Blue Lake Business Park, Blue Lake California." Eureka:SHN.

---. (July 2013). Site Investigation Work Plan and Sampling and Analysis Plan Revision 2, Blue Lake Business Park, Blue Lake California. Eureka:SHN.

United States Geological Survey (NR). 7.5-Minute Blue Lake Quadrangle. NR:USGS.

Appendix A
Field Notes

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Daily Field Report

Job No. 013066

Page 1 of 1

Project Name: Blue Lake Business Park	Client/Owner: City of Blue Lake	Date: 9/25/13	Day of Week: Wednesday
Client or Owner	Work Area	Mileage	Weather: Sunny
General Location of Work	Project Manager	Field Personnel: B. Howell, R. Rueber	
Subcontractor: Fisch	Subcontractor's Foreman: Rick Bertolino		

Type of Work: Direct Push Borings - Sample Collection

Equipment Present/Used at Work Area: DPT Rig

Regarding

8:30			SHN, Fisch on site
9:00			Site Safety meeting. Topics include site contaminants, appropriate field gear, insects, etc.
9:15			Locate Boring locations, discuss utilities w/ Locator from Utiliquest and City of B.L. employee
9:45			Set up at WP-1. Driller decons all equipment with soap, scrub brush and 2 rinses.
10:50			Finish at WP-1. Driller decons equipment as above.
11:15			Set up at WP-2
12:15			Finish at WP-2. Decon as above
13:15			Set up at WP-3
13:55			Finish at WP-3. Decon as above
14:05			Set up at WP-4. Collect equipment blank.
14:55			Finish at WP-4. Decon as above
15:00			Set up at WP-5
15:30			Sample WP-5 and collect duplicate soil sample. Label duplicates as WP-16
16:15			Finish at WP-5. Clean up and offsite

Copy given to:

Reported By: B. Howell

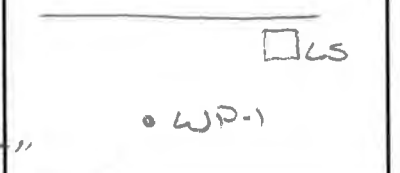
SHN CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash Eureka, CA 95501 707-441-8855 707-441-8877

WELLPOINT LOG

ID: WP-1 PAGE 1 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING 26'
LOCATION Blue Lake T.D. OF WELL 26'
DATE 9-25-13 START 10:00 FINISH 10:50 GROUND ELEV.
DRILLING METHOD Geoprobe TOC ELEV.
DRILLER Fisch LOGGED BY R. Rueber BOREHOLE DIAMETER ~~2.5~~ 2.5"

LOCATION MAP



REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS (CASING TYPE/DIA.)
	0		50	0–4		Fill, gravel, fine, R-SA, w/ sand f-C, Silty, + Clay, moist, med Brown, dense	10 ft PVC 0.010 Well Screen 16-26'
	0		50	4–8		Fill, as above, w/ coarse gravel	
	0		60	8–12	ML / GW/SW	Silt, w/ fine sand, clay + organics dark grey, moist med dense stiff; Sand, f-C, w/ gravel, f-C, trace Silt, dense, dark grey, moist	
	0	X		12–16			
				16		moist to wet @ 16'	
				17		Saturated @ 17'	
			40	18–20			
	0			20		dark brown, w/ Silt	
				21			

COMMENTS
15'-16' @ 10:35

SHN CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash Eureka, CA 95501
707-441-8855
707-441-8877

WELLPOINT LOG

ID: WP-1 PAGE 2 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING
LOCATION Blue Lake T.D. OF WELL
DATE START FINISH GROUND ELEV.
DRILLING METHOD TOC ELEV.
DRILLER Fisch LOGGED BY BOREHOLE DIAMETER ~~12~~ 2.5"

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS CASING TYPE/DIA.
			60	22			
				23			
				24			
			80	25			
				26		Total depth 26'	
				27			
				28			
				29			
				30			

COMMENTS

SHN CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash Eureka, CA 95501
707-441-8855
707-441-8877

WELLPOINT LOG

ID: WP-2 PAGE 1 OF 2

PROJECT NAME Blue Lake Business Park
PROJECT NUMBER 013066
LOCATION Blue Lake
DATE 9/25/13 START _____ FINISH _____
DRILLING METHOD DPT
DRILLER Fisch LOGGED BY B. Howell
SAMPLER TYPE DT-22
T.D. OF BORING 25'
T.D. OF WELL 25'
GROUND ELEV. _____
TOC ELEV. _____
BOREHOLE DIAMETER ~~8~~ 2.5"

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS (CASING TYPE/DIA.)
				0			
				1			
				2		Fill, gravel, f-C, R-SA, w/ Sand, f-C, Silty, dry, med grey, dense	
			70	3			
	0			4		w/ coarse gravel	
				5			
			60	6			
				7			
	0			8			
				9			
			70	10			
				11	ML	Silt, w/ organics, wood, fine Sand, + clay, dark grey, moist, stiff	
	0			12	SW	Sand, f-C, dark grey, moist, w/ gravel, fine to coarse, dense	
				13			
			0	14		No Recovery 12'-16'	
				15			
	0			16		Dry, as above.	
				17			
18'-19' 11:50		X	60	18	SW	Becomes wet @ 19'	
				19			
				20		Sand w/ gravel, f. ne, rounded, dense, dark grey, wet	
				21			

0.010 PVC Well Slotted 15'-25'

COMMENTS

SHN CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash Eureka, CA 95501
707-441-8855
707-441-8877

WELLPOINT LOG

ID: WP-2 PAGE 2 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING 25'
LOCATION Blue Lake T.D. OF WELL 25
DATE _____ START _____ FINISH _____ GROUND ELEV. _____
DRILLING METHOD _____ TOC ELEV. _____
DRILLER Fisch LOGGED BY _____ BOREHOLE DIAMETER 1.5"

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS CASING TYPE/DIA.
				22			
				23		Gravel, F-C, rounded. Sand, F-C,	
				24	GW	Brown, trace Silt, Dense, Saturated	
				25		Total Depth - 25'	
				26			
				27			
				28			
				29			
				30			

COMMENTS

CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash 707-441-8855
Eureka, CA 95501 707-441-8877

WELLPOINT LOG

ID: WP-3 PAGE 1 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING 28'
LOCATION Blue Lake T.D. OF WELL 28'
DATE 9/25 START ____ FINISH ____ GROUND ELEV. ____
DRILLING METHOD Geoprobe TOC ELEV. ____
DRILLER Fisch LOGGED BY ____ BOREHOLE DIAMETER ~~5~~ 2.5"

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS (CASING TYPE/DIA.)
			75	0–4		Fill - Silt, w/ gravel, f-SA, dense, med brown	
	0			4–5			
			50	5–8		w/ large wood pieces	
	10			8–9			
Minimal Recovery 8'-12'				9–12	GM	Core Wood and Fine gravel, R, Loose, med grey, Moist	
	0	X	10	12		Hydrocarbon odor @ 12 ft	
				12–13	SU	12'-13' - Gravelly Sand, dense, dry, med grey, gravel - f-C, Sand - coarse	
	0			13–16	SP	13' - Sand, f-C, w/ Fine gravel, dark grey, dry, dense	
				16–19			
	0			19–20	GM/GW	Gravel, f, R, Sandy, f-C, w/ Silt, med brown, dense Saturated @ 20'	
				20–21			0.010 PVC Screen 18-28 feet

COMMENTS

CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash 707-441-8855
Eureka, CA 95501 707-441-8877

WELLPOINT LOG

ID: WP-3 PAGE 2 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING 28'
LOCATION Blue Lake T.D. OF WELL 28'
DATE 9/25 START ____ FINISH ____ GROUND ELEV. ____
DRILLING METHOD Geoprobe TOC ELEV. ____
DRILLER Fisch LOGGED BY ____ BOREHOLE DIAMETER ~~4~~ 2.5

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS CASING TYPE/DIA.
				22		22-28 - few coarse gravel	
				23			
				24			
				25			
				26			
				27			
				28		Total depth = 28'	
				29			
				30			

COMMENTS

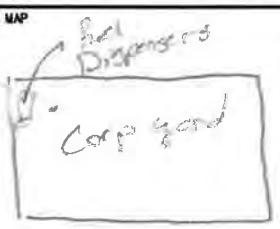
CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash 707-441-8855
Eureka, CA 95501 707-441-8877

WELLPOINT LOG

ID: WP-5 PAGE 1 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING
LOCATION Blue Lake T.D. OF WELL
DATE 9/25 START FINISH GROUND ELEV.
DRILLING METHOD Geoprobe TOC ELEV.
DRILLER Fisch LOGGED BY BOREHOLE DIAMETER 1.5"

LOCATION MAP



REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS CASING TYPE/DIA.
	0		80	0–4	SM	Fill- Silt, w/ gravel, f-c, Angular, dark grey, dense, dry Silt, w/ clay, + gravel, f-c, dark grey, moist, med dense	0.010 PVC Screen 11.5' 21.5'
	0			4–8	SW	Silty Sand, moist, brown, dense Sand, f-c, gravel, f-c, SA-R, dark grey, moist, dense	
	0			8–9	GM	Gravel, f-c, w/ Sand, grey, dry, dense	
	0		20	12–16		Becomes saturated @ 16'	
			20	16–20			

COMMENTS

CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash
Eureka, CA 95501
707-441-8855
707-441-8877

WELLPOINT LOG

ID: WP-5 PAGE 2 OF 2

PROJECT NAME Blue Lake Business Park SAMPLER TYPE DT-22
PROJECT NUMBER 013066 T.D. OF BORING
LOCATION Blue Lake T.D. OF WELL
DATE START FINISH GROUND ELEV.
DRILLING METHOD TOC ELEV.
DRILLER Fisch LOGGED BY BOREHOLE DIAMETER 1.5"

LOCATION MAP

REMARKS	OVA	SAMPLE INTERVAL	% RECOVERY	DEPTH (ft.)	USCS CLASS	LITHOLOGIC DESCRIPTION	WELLPOINT CONSTRUCTION DETAILS CASING TYPE/DIA.
				22 0			
				23			
				24		- Total depth 24'	
				25			
				26			
				27			
				28			
				29			
				30			

COMMENTS

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • info@shn-eureka.com

Soil Sampling Data Sheet

Project Name:	Blue Lake Business Park	Date/Time:	9/25/13
Project No.:	013066	Sampler Name:	Brenda Howell
Location:		Sample Type:	Soil
Sample #:	See Below	Weather	Sunny

	Time	Depth (ft bgs)	Soil Type	Color	Odor	Moisture	Comments
1 WP-1	10:35	15-16	SW	Dark Grey	None	Moist	
2 WP-2	11:50	18-19	SW	Dark Grey	None	Moist	Becomes wet @ 19'
3 WP-3	13:30	12	GM	med Brown	Hydrocarbon	Moist	Minimal recovery from 8'-12'
4 WP-3	13:40	19-20	GM/GW	med Brown	None	wet	Saturated @ 20'
5 WP-4	14:30	15.5-16.5	SW	dark Grey	None	Moist	wet @ 16.5'
6 WP-5	15:30	12-16	GM	Grey	None	Dry	Minimal recovery 12-16 ft Saturated at 16 ft
7							-Duplicate taken from WP-5 12'-16' and labeled WP-6 @ 12-16.
8							
9							
10							

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses

Sampler Signature/Date:

Reviewer Signature/Date:

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1309440

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silicagel Cleanup	CAMS	Dioxins/Furans (Test America)	VOC's	SVOCs (Calscience)
	WP-1 @ 15-16	9/25/13	10:35	S			X	X			
	WP-2 @ 18-19	"	11:50	S							
	WP-3 @ 12		13:30	S							
	WP-3 @ 19-20		13:40	S							
	WP-4 @ 15.5-16.5		14:30	S							
	WP-5 @ 12-16		15:30	S							
	WP-6 @ 12-16		15:30	S							
	Equipment Blank	W	14:05	W							

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 3.0 °C
	Received On Ice? (Y) N
	Samples Intact? (Y) N
	Preserved? Y / N
	Preserved @ NCL?
Water samples were Field Filtered & Preserved, as per Brenda Howell	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature] Brenda Howell	16:22 9/25/13	[signature]	9/25/13 1621

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Daily Field Report

Job No. 013066

Page 1 of 1

Project Name: Blue Lake Business Park	Client/Owner: City of Blue Lake	Date: 9/26/13	Day of Week: Thursday
Client or Owner	Work Area	Mileage	Weather: Sunny
General Location of Work	Project Manager	Field Personnel: B. Howell	
Subcontractor: Fisch	Subcontractor's Foreman: Rick Bertolino		

Type of Work: WP Sampling

Equipment Present/Used at Work Area

Regarding

8:30			SHN, Fisch onsite
8:45			Calibrate pH/EC/Temp meter
9:00			Sample WP-1 w/ peristaltic pump and new disposable tubing. Filtered sample for dissolved metals.
9:20			Set up @ WP2
9:30			Sample WP-2 as above
10:00			Sample WP-3 as above. Take Duplicates of TPHd/mo + CAM 5 Samples. Labeled Dups as WP-6. Took Additional Samples for SVOCs, VOCs, Dioxins.
11:00			Collect field blank w/ peristaltic + new disposable tubing. filter metals sample.
11:10			Sample WP-4 as above
11:35			Sample WP-5 as above
12:15			SHN off site

Copy given to:

Reported By:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • info@shn-eureka.com

Water Sampling Data Sheet

Project Name:	Blue Lake Business Park	Date/Time:	9/26/13
Project No.:	0130066	Sampler Name:	B. Howell
Location:		Sample Type:	Ground Water
Well #:	WP-1	Weather	Sun
Hydrocarbon Thickness/Depth (feet):		Key Needed:	

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
	-	17.3	=		x		=	

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F/°C)	pH	Water Removed (gal)	Comments
				0.0 (?)	13.2	5.82		EC does not seem to be working

Purge Method: ~~Hand Bail~~ Peristaltic

Total Volume Removed: 0.5 gal (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
WP-1	1 250mL Poly		NCL	Diss metals
WP-1	2 40mL Vials		NCL	TPHD/MO

Well Condition:

Remarks: Well recharged to:

Sample time 9:00

At:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • info@shn-eureka.com

Water Sampling Data Sheet

Project Name:	Blue Lake Business Park	Date/Time:	9/26/13
Project No.:	013066	Sampler Name:	
Location:		Sample Type:	Ground Water
Well #:	WP-2	Weather	Sun
Hydrocarbon Thickness/Depth (feet):		Key Needed:	

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
	-	18.6	=		x		=	

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
				145.6	14.8	6.62	~0.5	

Purge Method: ~~Hand Bail~~ Peristaltic

Total Volume Removed: 0.5 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
WP-2	1 250 mL Poly		NCL	Diss. metals
WP-2	2 40 mL VOAs		NCL	TPH D/MO

Well Condition: Sample time 9:30

Remarks: Well recharged to:

At:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • info@shn-eureka.com

Water Sampling Data Sheet

Project Name:	Blue Lake Business Park	Date/Time:	9/26/13
Project No.:	0130606	Sampler Name:	B. Hawell
Location:		Sample Type:	Ground Water
Well #:	WP-3	Weather	Sun
Hydrocarbon Thickness/Depth (feet):		Key Needed:	

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
	-	20.05	=		x		=	

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F) °C	pH	Water Removed (gal)	Comments
				135.0	13.9	6.13	~0.5	

Purge Method: ~~Hand Bail~~ Peristaltic

Total Volume Removed: ~0.5 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
WP-3 + "WP-6"	250 mL Poly		NCL	Diss. Metals
" "	2 60 mL VOAs		NCL	TPHD/MO
WP-3	3 40 mL VOAs		NCL	8260
WP-3	3 1-Liter Ambers			SVOCs/Dioxins/Furans

Well Condition: Sample time 10:00

Remarks: Well recharged to:

At:

Dup = WP-6

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • info@shn-eureka.com

Water Sampling Data Sheet

Project Name:	Blue Lake Business Park	Date/Time:	9/26/13
Project No.:	013066	Sampler Name:	B. Howell
Location:		Sample Type:	Ground Water
Well #:	WP-4	Weather	Sun
Hydrocarbon Thickness/Depth (feet):		Key Needed:	

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
	-	18.4	=		x		=	

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F) °C	pH	Water Removed (gal)	Comments
				143.7	19.9	6.35		

Purge Method: ~~Hand Bail~~ Peristaltic

Total Volume Removed: 7 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
WP-4	250 mL Poly		NCL	Diss metals
WP-4	2 60 mL VOAs		NCL	

Well Condition: Sampled @ 11:10

Remarks: Well recharged to:

At:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • info@shn-eureka.com

Water Sampling Data Sheet

Project Name:	Blue Lake Business Park	Date/Time:	4/26/13
Project No.:	013066	Sampler Name:	B. Howell
Location:		Sample Type:	Ground Water
Well #:	WP-5	Weather	Sun
Hydrocarbon Thickness/Depth (feet):		Key Needed:	

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
	-	17.0	=		x		=	

Time	~~DO (ppm)~~	~~CO_2 (ppm)~~	~~ORP (mV)~~	EC (uS/cm)	Temp ~~(°F)~~ °C	pH	Water Removed (gal)	Comments
				145.8	19.0	6.48		

Purge Method: ~~Hand Bail~~ Peristaltic

Total Volume Removed: 0.5 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses

Well Condition: Sampled @ 11:35

Remarks: Well recharged to:

At:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • shninfo@shn-engr.com

Equipment Calibration Sheet

Name: B. Howell

Project Name: Blue Lake Ind. Park

Reference No.: 013060

Date: 9/26/13

Equipment: ☒ pH & EC ☐ PID ☐ $GTCO_2$ ☐ GTLEL
☐ Turbidity ☐ Other _____

Description of Calibration Procedure and Results:

Calibrated at 4.0, 7.0, & 10.0

DSCF0001.JPG

DSCF0002.JPG

WP-1

DSCF0003.JPG

3 BUCKET

DSCF0004.JPG

RECON

DSCF0005.JPG

WP-2

DSCF0006.JPG

WP-2

DSCF0007.JPG

WP-3

DSCF0008.JPG

DSCF0009.JPG

DSCF0011.JPG

U.G. @ CORP YARD

DSCF0012.JPG

DSCF0013.JPG

WP-4

DSCF0014.JPG

DSCF0015.JPG

SUPPLY WELL

DSCF0016.JPG

UG BY TANKS

DSCF0017.JPG

DSCF0018.JPG

DSCF0019.JPG

DSCF0020.JPG

UG BY TANK

~~4.B~~

FIRST WP-5 - MOVED TO

DUE TO

UG ELECTRIC

9-25-13

013066

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1309455

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/mo W/Silica gel cleanup	CAM 5	Dioxins/Furans (Test America)	SVOCs (Calscience)	VOCs
	WP-1	9/26/13	9:00	GW			X	X			
	WP-2		9:30								
	WP-3		10:00						X	X	X
	WP-4		11:10								
	WP-5		11:35								
	WP-6		10:00								
	Field Blank		11:00								

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
Water Samples were Field Filtered & Preserved as per Brenda Howell.	Temperature 3.8 °C
	Received On Ice? (Y) / N
	Samples Intact? (Y) / N
VOC's = List 6	Preserved? (Y) / N
D/F TEQ WHO 2005	Preserved @ NCL? Y (N) / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Brenda Howell 9/26/13	12:23	[signature] 9/26/13	1223

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Daily Field Report

Job No. 013066

Page 1 of 1

Project Name: Blue Lake Business Park	Client/Owner: City of Blue Lake	Date: 10/1/13	Day of Week: Tues
Client or Owner	Work Area	Mileage	Weather: Sun
General Location of Work	Project Manager: EJN	Field Personnel: B. Howell, E. Nielsen, W. Nickelman	
Subcontractor	Subcontractor's Foreman		

Type of Work: Test pits

Equipment Present/Used at Work Area: Backhoe, Trowels, Bowls

Regarding

8:45			Onsite. City of Blue Lake (backhoe operator), E. Nielsen, and W. Nickerman already onsite
9:00			Site Safety meeting
9:15			Decon equipment using Liquinox and triple wash method
9:25			Sample TP-1 @ 1.5 and 3.0 BGS using clean gloves and equipment. Decon all equipment following sampling.
9:55			Sample TP-2 (1.0 and 3.0 BGS) as at TP-01
10:10			Sample TP-4 (1.0 and 3.75 BGS) as at TP-01
10:30			Sample TP-03 (1.0 and 3.0 BGS) as at TP-01
11:15			Sample TP-05 (1.0 and 3.0 BGS) as at TP-01
11:30			" TP-06 (1.5 and 3.5 BGS) " " ". Collected duplicate at 1.5 BGS - Labeled as TP-06A-1.5
11:50			Sample TP-07 (1.5 and 3.5 BGS) as at TP-01
12:35			" TP-08 (1.5 and 3.0 BGS) " " "
13:25			" TP-10 (1.0 and 3.0 BGS) " " ". Collected duplicate at 3.0 BGS - Labeled as TP-10A-3.0
13:40			Sample TP-09 (1.0 and 3.0 BGS) as at TP-01
13:55			" TP-11 (1.0 and 3.0 BGS) " " "
14:15			" TP-12 (1.0 and 3.0 BGS) " " "
14:30			" TP-13 (1.0 and 3.0 BGS) " " "
14:45			" TP-14 (1.0 and 3.0 BGS) " " "
15:00			" TP-15 (1.0 and 3.0 BGS) " " "
15:10			" TP-16 (1.0 and 3.0 BGS) " " "

Copy given to:

Reported By: B. Howell

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Daily Field Report

Job No. 013066

Page 1 of 1

Project Name: Blue Lake Business Park	Client/Owner: City of Blue Lake	Date: 10/2/13	Day of Week: Wed
Client or Owner	Work Area	Mileage	Weather: Sun
General Location of Work	Project Manager: EJN	Field Personnel: B. Howell, R. Rueber	
Subcontractor	Subcontractor's Foreman		

Type of Work: Test Pits

Equipment Present/Used at Work Area: Backhoe, Trucks

Regarding

10:00			SHN onsite. Hold Site Safety meeting.
10:25			Sample TP-17 (1.0 and 3.0) using clean gloves and trowel.
			Trowel decon'ed w/ Liquinox and triple wash method
11:10			Sample TP-18 (8.0 and 10.0) as at TP-17
11:20			Take equipment blank
11:40			Sampled TP-19 (4.5 and 6.0) as at TP-17
12:15			Sampled TP-20 (1.0 and 3.0) Duplicate taken at 1.0 B/S.
			Labeled TP-20A-1.0
12:35			SHN offsite

Copy given to:

Reported By: B. Howell

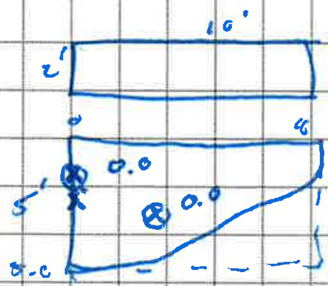
SHN ENGINEERS & GEOLOGISTS

812 W. Wabash Ave.
Eureka, CA 95501-2138
Tel. 707 / 441-8855
Fax: 707 / 441-8877

JOB: 013066 - BLBP
SHEET NO. 1 OF 3
CALCULATED BY: ESN DATE: 10/1/13
CHECKED BY: DATE:
SCALE: 1" = 8'

0800 - Eureka set
0830 - @ BL CY
0855 - TSM/CPS
0900

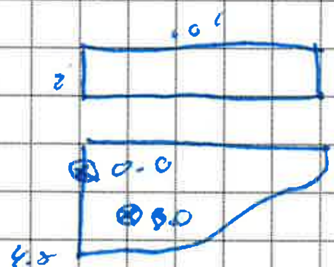
PID BL
0.0-0.2



TP-01

TP-01-1.5	0925	No Odor/Disc.
TP-01-3.0	0930	Cobbles w/ sand + fines, wood

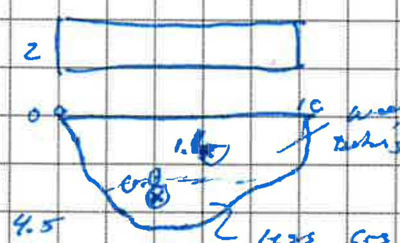
Dk Gry-Blk, Dry, Loose
Backfill / Conys



TP-02 0948

No Odor / Disc
Cobbles w/ sand + fines
Dry, Loose-M. Dense, NP
Drk Gry,

TP-02-1.0	0955
TP-02-3.0	1000



TP-~~03~~ 04 1005

No Odor / Sheen
Cobbles w/ sand + fines
Drk Gry, Dry, NP
some wood/cong's

TP-~~03~~ 04-1.5	10~~15~~10
TP-~~03~~ 04-3.75	10~~20~~15

TP-03 1020

No Odor / Sheen
Cobbles w/ sand/fines
Drk Gry, Dry, NP

TP-03-1.0	1030
TP-03 3.0	1035

MKF / JB onsite (1035)

TP-05 1105

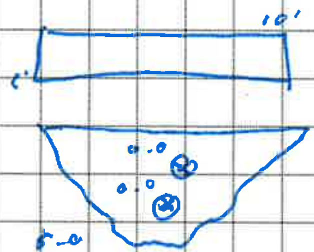
No Odor / Sheen
0-1.0 AB Base / ML w/ SP - Brn
C 1.0 Cobbles w/ sand + fines
Drk Gry

TP-05-1.0	1115
TP-05-3.0	1120

SHN ENGINEERS & GEOLOGISTS

812 W. Wabash Ave.
Eureka, CA 95501-2138
Tel. 707 / 441-8855
Fax: 707 / 441-8877

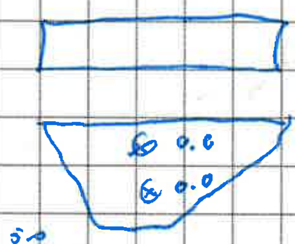
JOB 013066-BLBP 2 of
SHEET NO. 2 OF 3
CALCULATED BY ejn DATE 10-1-13
CHECKED BY ____ DATE ____
SCALE ____



TP-06 - Veg Area
1125

TP-06-1.5 (FDS) 1130
TP-06A-1.5 1133
TP-06-3.5 1135

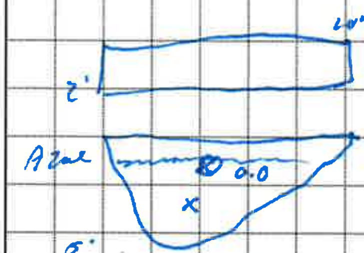
No Odor / Stain
ML/CL - w/ cobbles
Brn, Dry, NP, [illegible]



TP-07 1140

~~TP-07~~ TP-07 1.5 1150
TP-07-3.25 1155

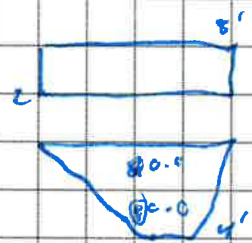
No odor / Stain
cobble - w sand / fines
Dark Gry, Dry-wet, NP
metal Debris, minor wood



TP-08 1200

TP-08-1.5 1235
TP-08-3.0 1240

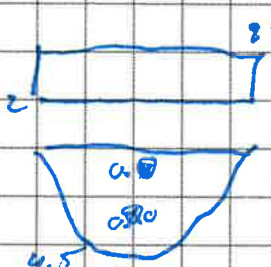
no Odor / Disc
0-1.5 A zone Brn
1.5 - cobbles w/ sand & fines
Dark Gry, Dry, NP,
metal, wood



TP-10

TP-10-1.0 1325
TP-10-3.0 1330
TP-10A-3.0 1335

No Odor / Stain
cobbles w/ sand fines
Gry - Dark Brn, Dry, NP



TP-9 slight disc @ 0.5-1.0

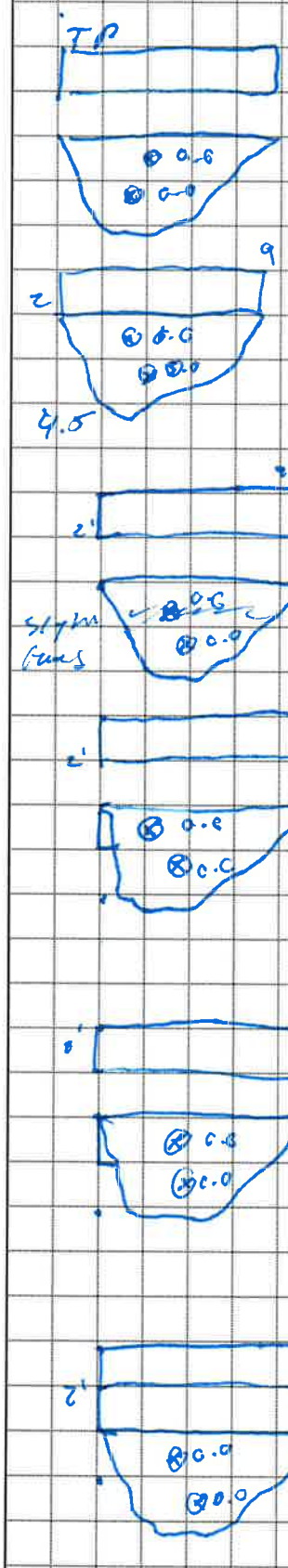
1346
TP-09-1.0 VOC/SVOC
TP-09-3.5 1345

0-1 cobbles w/ sand & fines
Dark Gry, Dry, NP
1.0-4.5 ML/CL Dark Brn
silty, Dry, LP.

SHN ENGINEERS & GEOLOGISTS
812 W. Wabash Ave. Tel. 707 / 441-8855
Eureka, CA 95501-2138 Fax: 707 / 441-8877

JOB 1.3
SHEET NO. 3 OF 7
CALCULATED BY ajl DATE 10-1-13
CHECKED BY DATE
SCALE

Jacob - 601-5956



TP-11

TP-11-1.0	1355	No Odor / Stain
TP-11-3.0	1400	~~Cobbles w/~~ Sand + Silt
		M. Dense, Dry, NP - Brown

TP-12

TP-12-1.0	1415	No Odor / Stain
TP-12-3.0	1420	Cobbles w/ Sand + Silt
		Dense, Dry, NP Lt. Brn - Lay

TP-13

TP-13-1.0	1430	No ODOR / Stain DISC (1.0)
TP-13-3.0	1435	Cobbles w/ Sand - Silt
~~TP-13A-C~~		Dense, Dry, NP

TP-14

TP-14-1.0	1445	No Odor / Stain
TP-14-3.0	1450	Cobbles - 0.0 - 2.5
TP-14A-3.0	1455 (ED)	Sand (SP) Brn 2.5 - 4.5
		M. Dense, Dry NP

TP-15

TP-15-1.0	1500	No Odor / Stain Soil
TP-15-3.0	1505	Cobbles w/ Sand - Silt
		Lay - Brn, Dense Dry NP
		wood.

TP-16

TP-16-1.0	1510	No Odor / Stain
TP-16-3.0	1515	Cobbles w/ S & S, Lay
		Dense, Dry, NP

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 13100414

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 9550
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-engr.com
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

PROJECT INFORMATION
Project Number: 0130606
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica gel Cleanup	ANALYSIS: CAM 5
	TP-01-1.5	10/1/13	09:25	S			X	X
	TP-01-3.0		09:30	S			X	X
	TP-02-1.0		09:55	S			X	X
	TP-02-3.0		10:00	S			X	X
	TP-04-1.0		10:10	S			X	X
	TP-04-3.75		10:15	S			X	X
	TP-03-1.0		10:30	S			X	X
	TP-03-3.0		10:35	S			X	X
	TP-05-1.0		11:15	S			X	X
	TP-05-3.0		11:20	S			X	X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y (N) / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 13[illegible]

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-Engr.com
Sampler (Sign & Print): Erik Nielsen

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silicagel cleanup	CAM 5	Dioxins/Furans (Test America)	VOCs	SVOCs (CAL Science)
	TP-06-1.5	10/1/13	11:30	S			X	X			
	TP-06A-1.5	"	11:33	S			X	X			
	TP-06-3.5	"	11:35	S			X	X			
	TP-07-1.5	"	11:50	S			X	X			
	TP-07-3.5	"	11:55	S			X	X			
	TP-08-1.5	"	12:35	S			X	X			
	TP-08-3.0	"	12:40	S			X	X			
	TP-10-1.0	"	13:25	S			X	X			
	TP-10-3.0	"	13:30	S			X	X			
	TP-10A-3.0	"	13:35	S			X	X			

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	7.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/2/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1310014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@shn-engr.com
Sampler (Sign & Print): Erik Nielsen

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/Mo w/ Silica gel Cleanup	CAM 5	SVOCs	VOCs
	TP-09-1.0	10/1/13	13:40	S			+	+	X	+
	TP-09-3.0		13:45	S			+	+		
	TP-11-1.0		13:55	S			X	X		
	TP-11-3.0		14:00	S			X	X		
	TP-12-1.0		14:15	S			X	X		
	TP-12-3.0		14:20	S			X	X		
	TRIP Blank		14:25	W						X
	TP-13-1.0		14:30	S			X	X		
	TP-13-3.0		14:35	S			X	X		

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2-4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen	10/1/13/1600		10/1/13 1600

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 13[0014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka
Phone: 707-441-8855
Copies of Report to:
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

TAT: ☑ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☑ Final Report PDF ☐ FAX By:

PROJECT INFORMATION
Project Number: 013006
Project Name: Blue Lake Business Park
Purchase Order Number:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica Gel Clean up	ANALYSIS: CAM 5
	TP-14-1.0	10/1/13	14:45	S			X	X
	TP-14-3.0		14:50				X	X
	TP-14A 3.0		14:55				X	X
	TP-15-1.0		15:00				X	X
	TP-15-3.0		15:05				X	X
	TP-16-1.0		15:10				X	X
	TP-16-3.0	↓	16:15	↓			X	X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1600

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

ENGINEERS & GEOLOGISTS
812 W. Wabash Ave. Tel. 707 / 441-8855
Eureka, CA 95501-2138 Fax: 707 / 441-8877

JOB 013066
SHEET NO. ____ OF ____
CALCULATED BY EMR DATE ____
CHECKED BY ____ DATE 10-7-13
SCALE ____

TP-17

0-2" TOPSOIL / ROOTS

GW 2"-2' GRAVEL FILL, F-C, R, SANDY F-C DARK BRN SILTY - SILTY LESS SAND 0-1

GM/ML 2-4' FILL - GRAVEL F-C, SILTY, DK BRN MOIST LOOSE

ML 4' SILT, W/ CLAY DK GREY SL MOIST STIFF W/ FEW ROOTS & REDDISH MOTTLES

SAMPLE @ 1' & 5' NO ODOR TD 5'

TP-18 ~ 5' OF FILL TOP TO CURB ST.

0- FILL MIXED GRAVEL, F-C, R, FEW BOULDER TO 1' SILT, SAND, ASPHALT, WOOD CONCRETE, FEW RUBBER & METAL, DK GREY TO DK BRN, DRY TO ~~MOIST~~ DAMP - FEW LARGE CONCRETE 1-3' @ 6.5 - 7.5'

-@ 7.5 1984 PEPSI CAN

SAMPLE @ 5' & 10' - SILT, SOME JELLY, DK GREY DAMP MSTIFF F,R

GRADES TO SAND - F-M, SILTY, MOD BRN SL MOIST MDENSE TD 10'

NO ODOR

SHN
ENGINEERS & GEOLOGISTS
812 W. Wabash Ave. Tel. 707 / 441-8855
Eureka, CA 95501-2138 Fax: 707 / 441-8877

JOB
SHEET NO. OF
CALCULATED BY TMS DATE 10-2-17
CHECKED BY DATE
SCALE OF ?

TP-19 ~3' ABOVE OLD GRADE?

0-2' GRASS & ROOTS
2'-3' FILL MIXED - GRAVEL F-C, R, SILTY SANDY F-M FERROUS METAL DEBRIS/BRICK DK BROWN DAMP ~~MOIST~~ M DENSE
SAMPLE @ 4.5
3- GRAVEL F-R SANDY F-M, W/ SILT, DK BROWN DAMP, M DENSE FEW BRICK & WOOD

SAMPLE 4.5 @ 6'
NO ODOR

TP-20

0-4" GRASS/ ROOTS TOPSOIL
4"-4.5' SAND F-C, W/ GRAVELLY F,R, T. SILT MED GREY DAMP, LOOSE
ROOTS TO 4'
TD 4.5'
STEEL PIPE JUST BELOW SURFACE

SAMPLE @ 3' NO ODOR

DSCF0038.JPG

DSCF0039.JPG

TP-17

DSCF0040.JPG

TP-18

DSCF0041.JPG

DSCF0042.JPG

DSCF0043.JPG

DSCF0044.JPG

TP-19

DSCF0045.JPG

DSCF0046.JPG

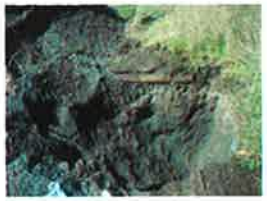
DSCF0047.JPG

DSCF0048.JPG

DSCF0049.JPG

TP-20

DSCF0050.JPG



DSCF0051.JPG

013066

10-2-13

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1310035

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 0130606
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHd/mo w/ Silica gel cleanup	ANALYSIS: CAM 5
	TP-17-1.0	10/2/13	10:25	S			X	X
	TP-17-3.0		10:30	S				
	TP-18-8.0		11:10	S				
	TP-18-10.0		11:15	S				
	Equipment Blank		11:20	SW				
	TP-19-4.5		11:40	S				
	TP-19-6.0		11:45	S				
	TP-20-1.0		12:15	S				
	TP-20-3.0		12:25	S				
	TP-20A-1.0		12:20	S				

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
CAM 5 Water needs to be filtered & preserved as per Brenda Howell. RL	Temperature 4.4 °C
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL? Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Brenda Howell	12:99 10/2/13		10/2/13 1250

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Appendix B

Excavation Test Pit and Soil Boring Logs

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 5.0 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-1

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0												
-2.0			0.0									
-3.0			0.0									
-4.0												
-5.0						Bottom of TP-1 at 5.0 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-2

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0	⊠		0.0									
-2.0												
-3.0	⊠		0.0									
-4.0												
-5.0						Bottom of TP-2 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-3

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0	⊠		0.0									
-2.0												
-3.0	⊠		0.0									
-4.0												
-5.0						Bottom of TP-3 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

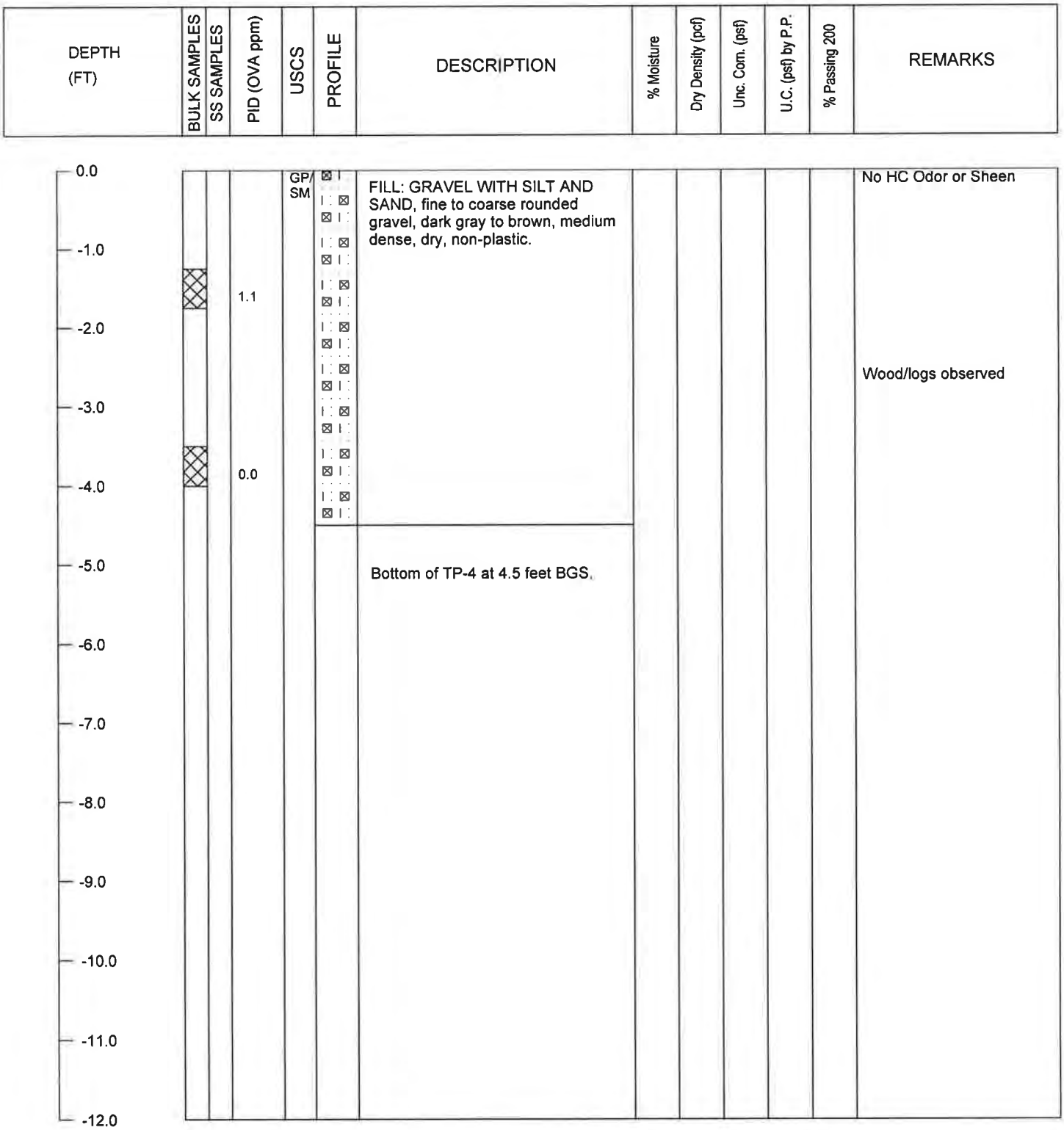
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-4



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 5.0 feet BGS
SAMPLE TYPE: Discrete
--

TEST PIT NUMBER
TP-5

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0	▨		0.0									
-2.0												
-3.0	▨		0.0									
-4.0												
-5.0						Bottom of TP-5 at 5.0 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

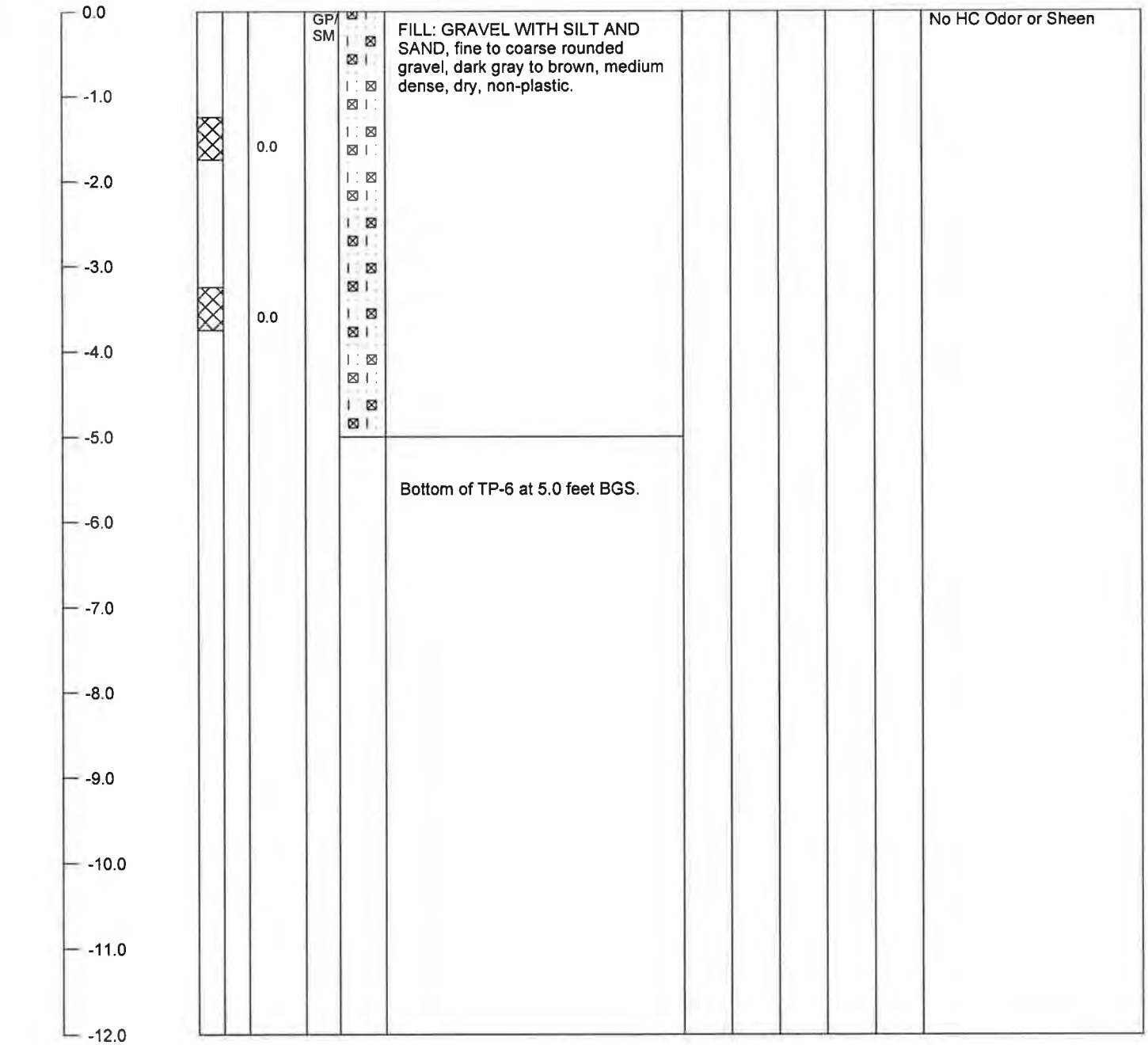
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 5.0 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-6



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time

FIELD LOG

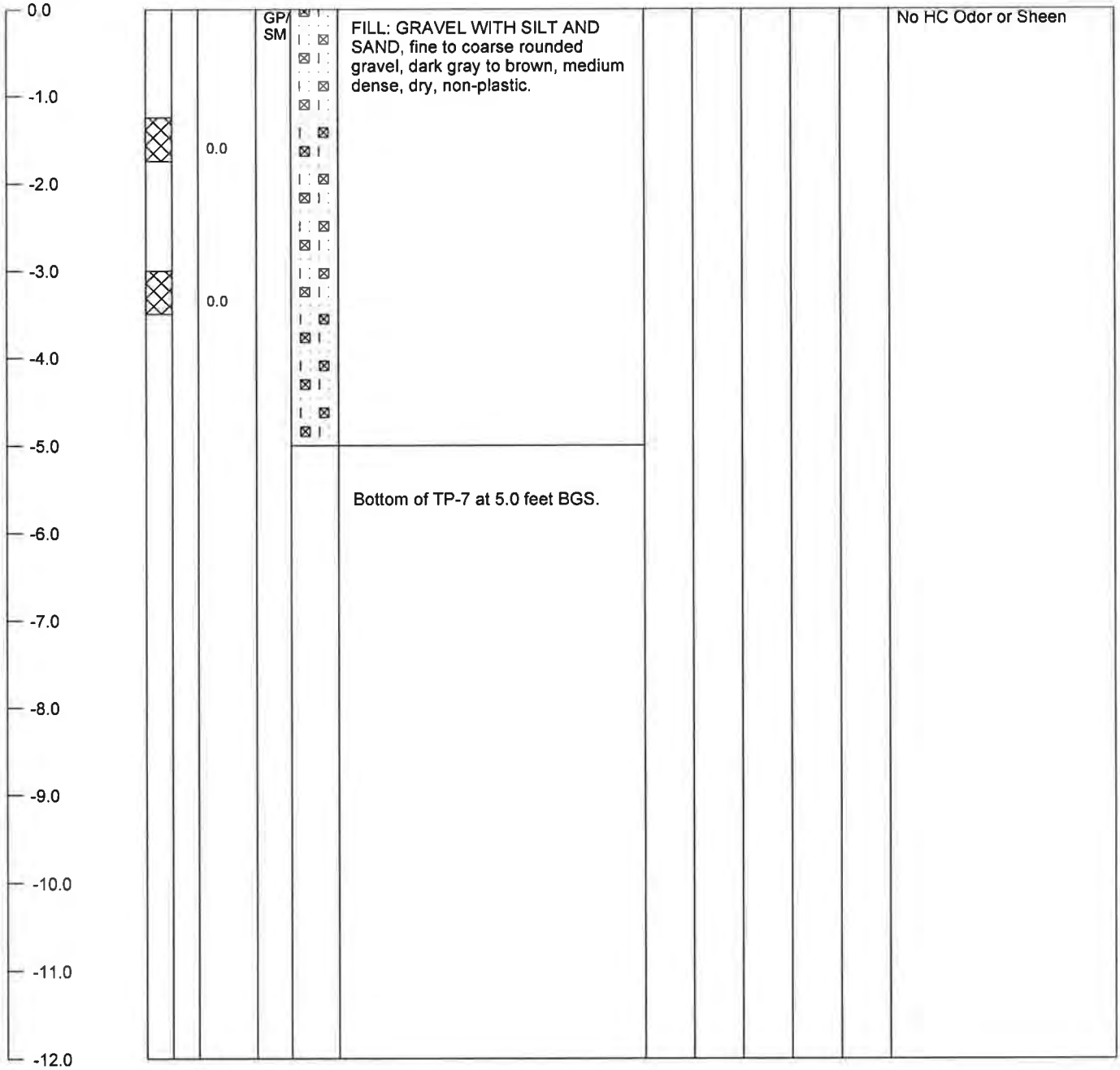
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 5.0 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-7



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 5.0 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-8

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0			0.0									
-2.0												Woody debris
-3.0			0.0									
-4.0												
-5.0						Bottom of TP-8 at 5.0 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-9

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						Slight discoloration @ 0.5-1.0 feet BGS
-1.0			0.0									
-2.0												
-3.0			0.0									
-4.0												
-5.0						Bottom of TP-9 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

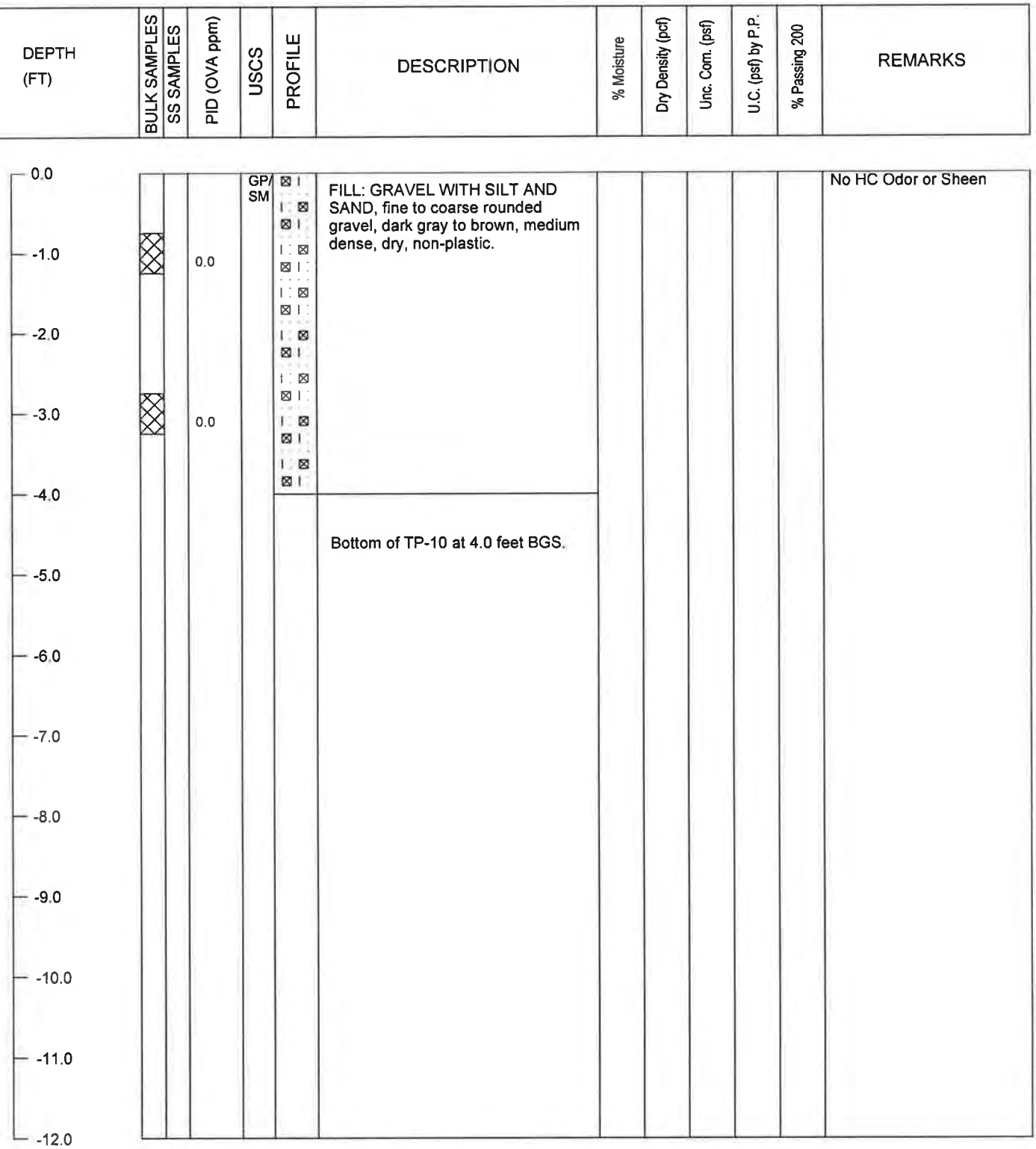
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-10



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-11

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0	▨		0.0									
-2.0												
-3.0	▨		0.0									
-4.0												
-5.0						Bottom of TP-11 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-12

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0			0.0									
-2.0												
-3.0			0.0									
-4.0												
-5.0						Bottom of TP-12 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

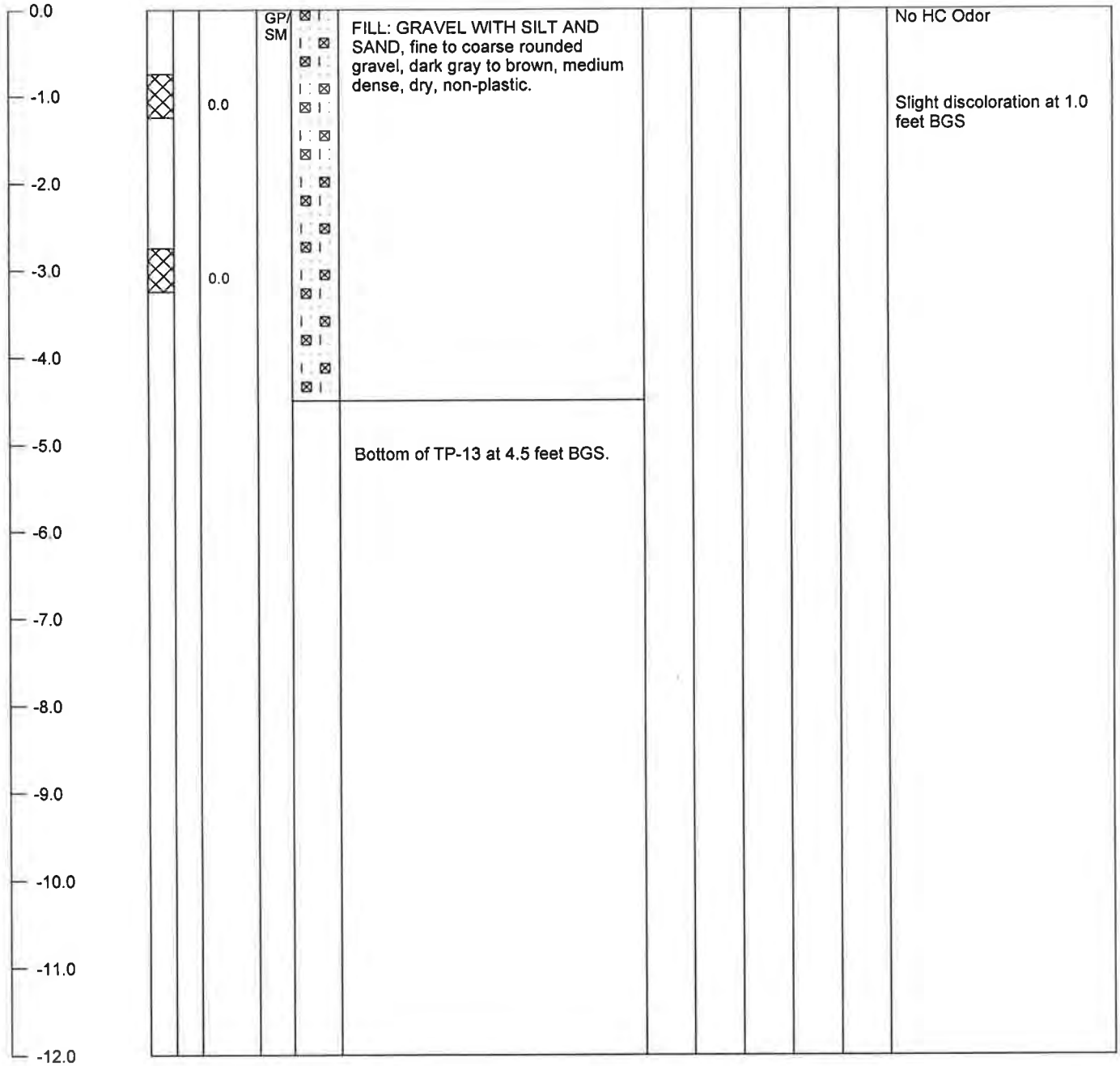
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-13



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-14

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SP		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor or Sheen
-1.0			0.0									
-2.0												
-3.0			0.0									
-4.0												
-5.0						Bottom of TP-14 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-15

DEPTH (FT)	BULK SAMPLES	SS SAMPLES	PID (OVA ppm)	USCS	PROFILE	DESCRIPTION	% Moisture	Dry Density (pcf)	Unc. Com. (psf)	U.C. (psf) by P.P.	% Passing 200	REMARKS
0.0				GP/SM		FILL: GRAVEL WITH SILT AND SAND, fine to coarse rounded gravel, dark gray to brown, medium dense, dry, non-plastic.						No HC Odor
-1.0			0.0									Slight discoloration
-2.0												
-3.0			0.0									
-4.0												
-5.0						Bottom of TP-15 at 4.5 feet BGS.						
-6.0												
-7.0												
-8.0												
-9.0												
-10.0												
-11.0												
-12.0												

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

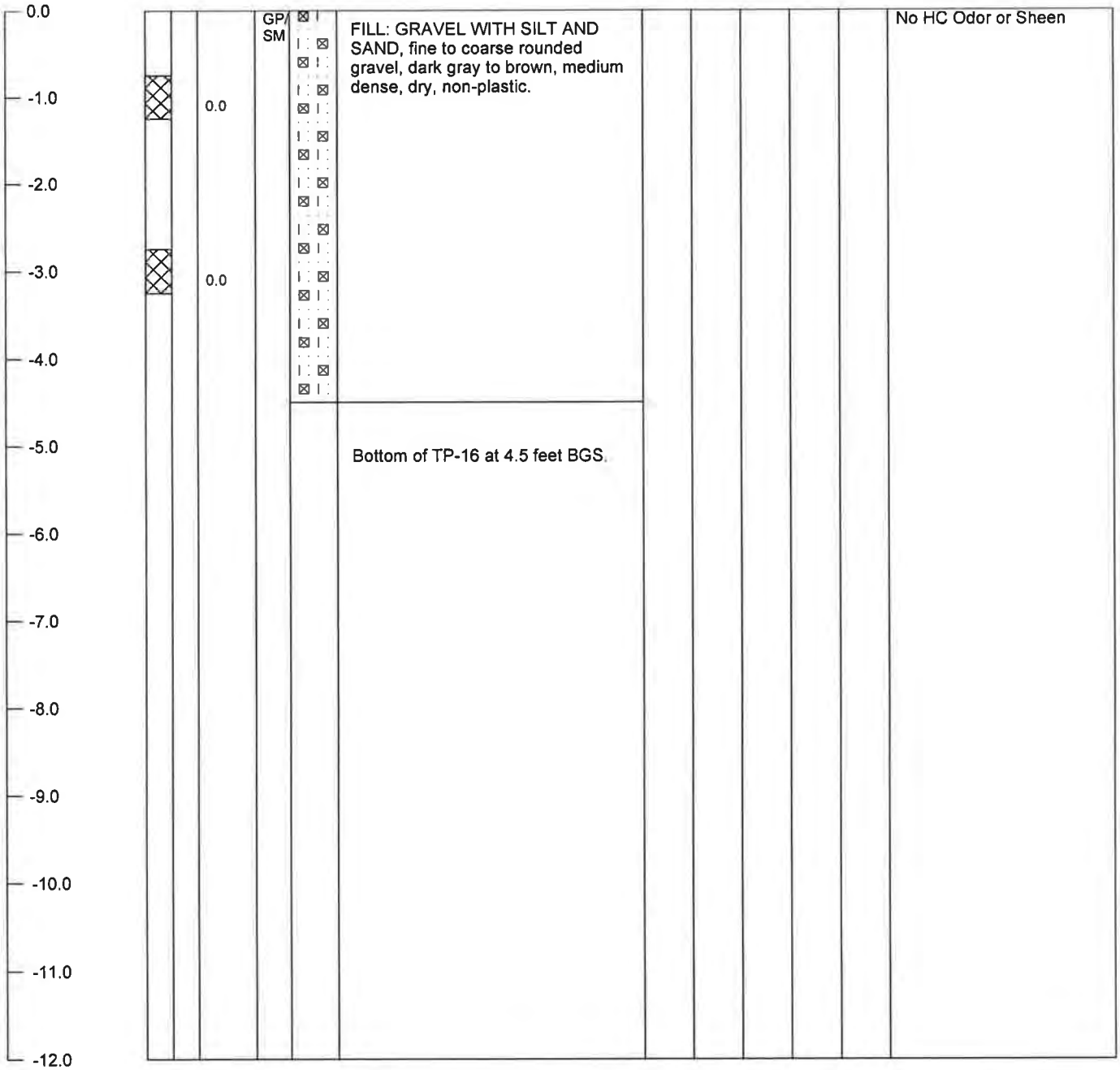
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: EJN

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-16



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

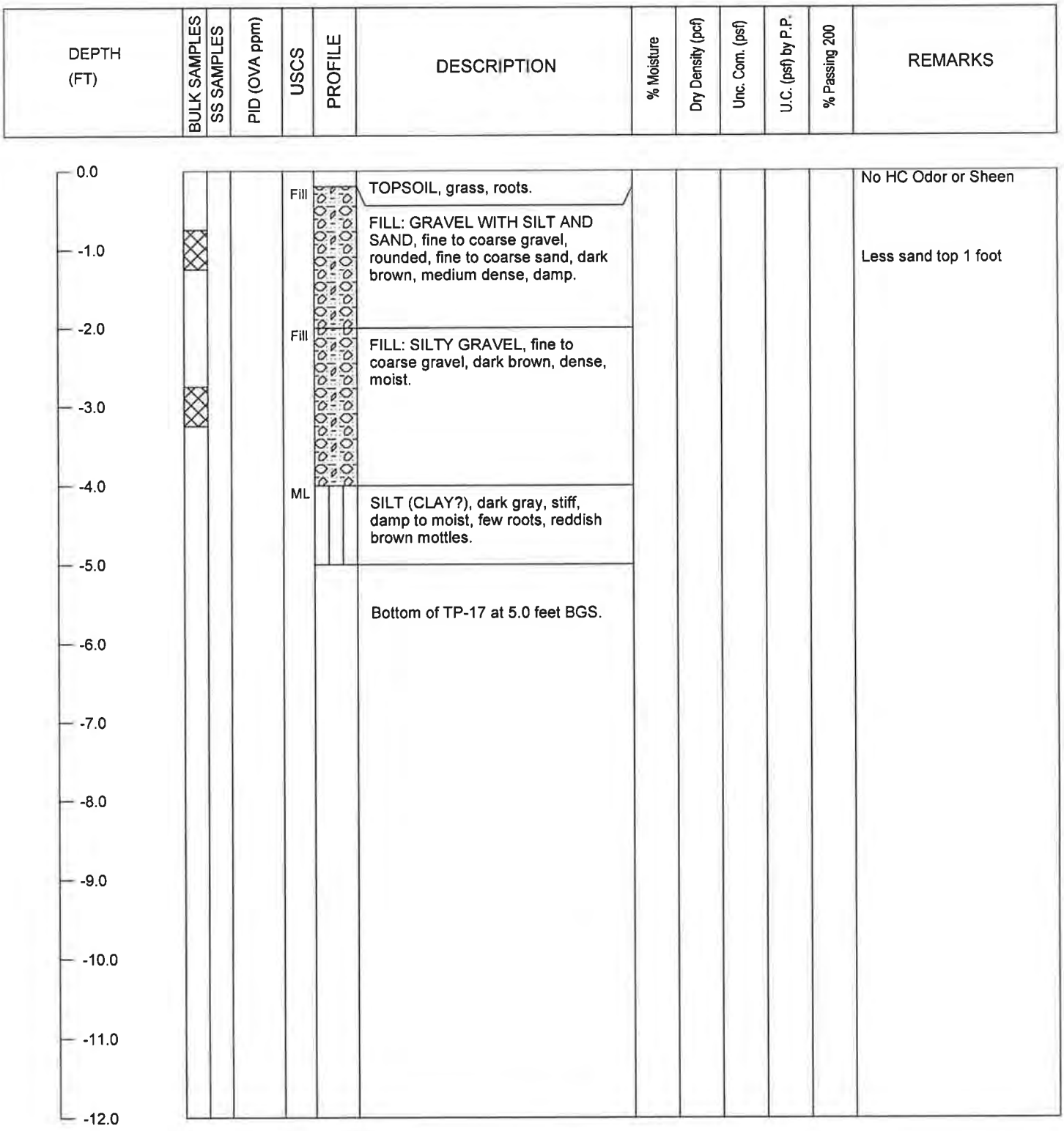
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: R. Rueber

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 5.0 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-17



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

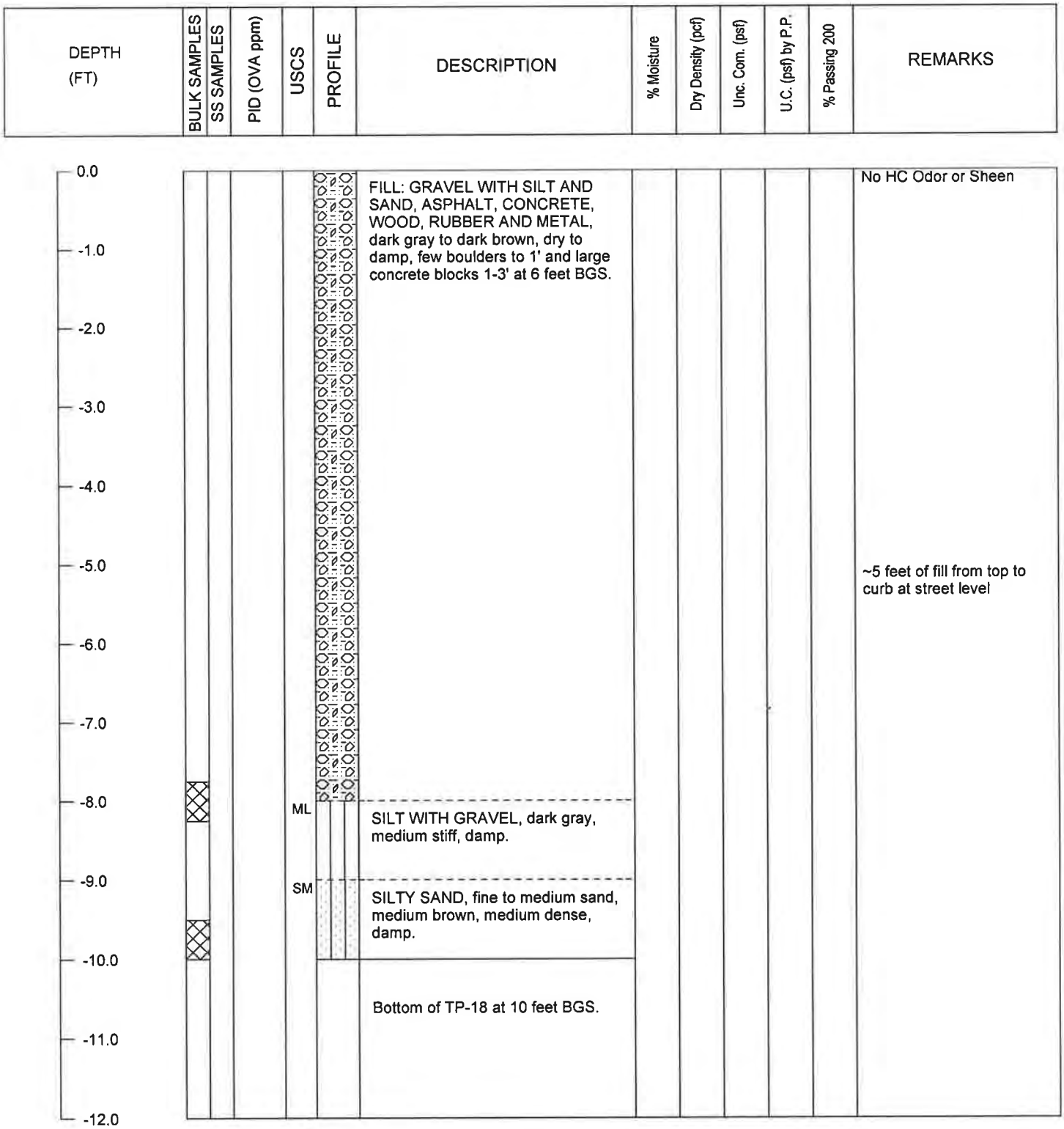
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: R. Rueber

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 10 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-18



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

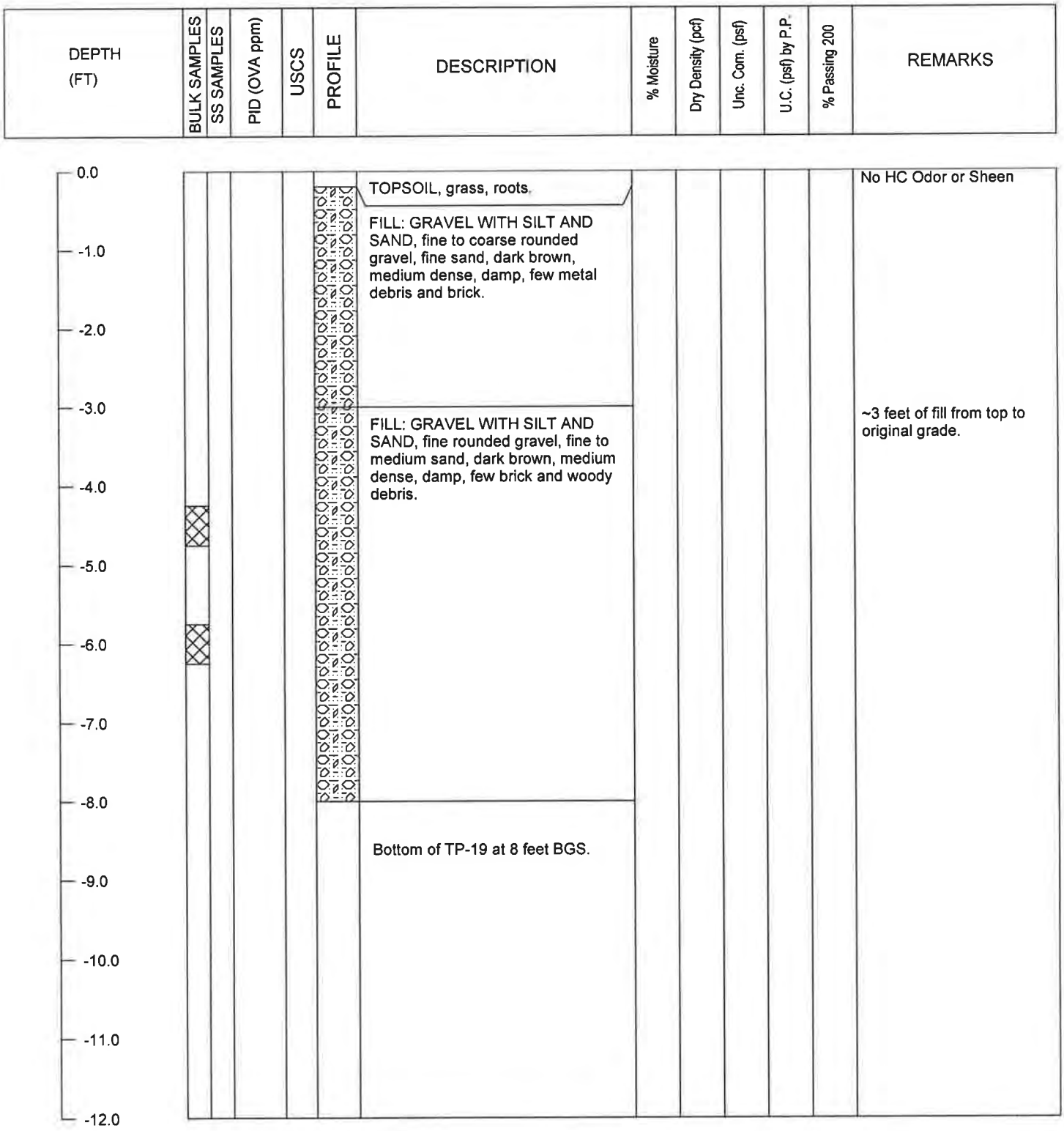
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: R. Rueber

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 8 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-19



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

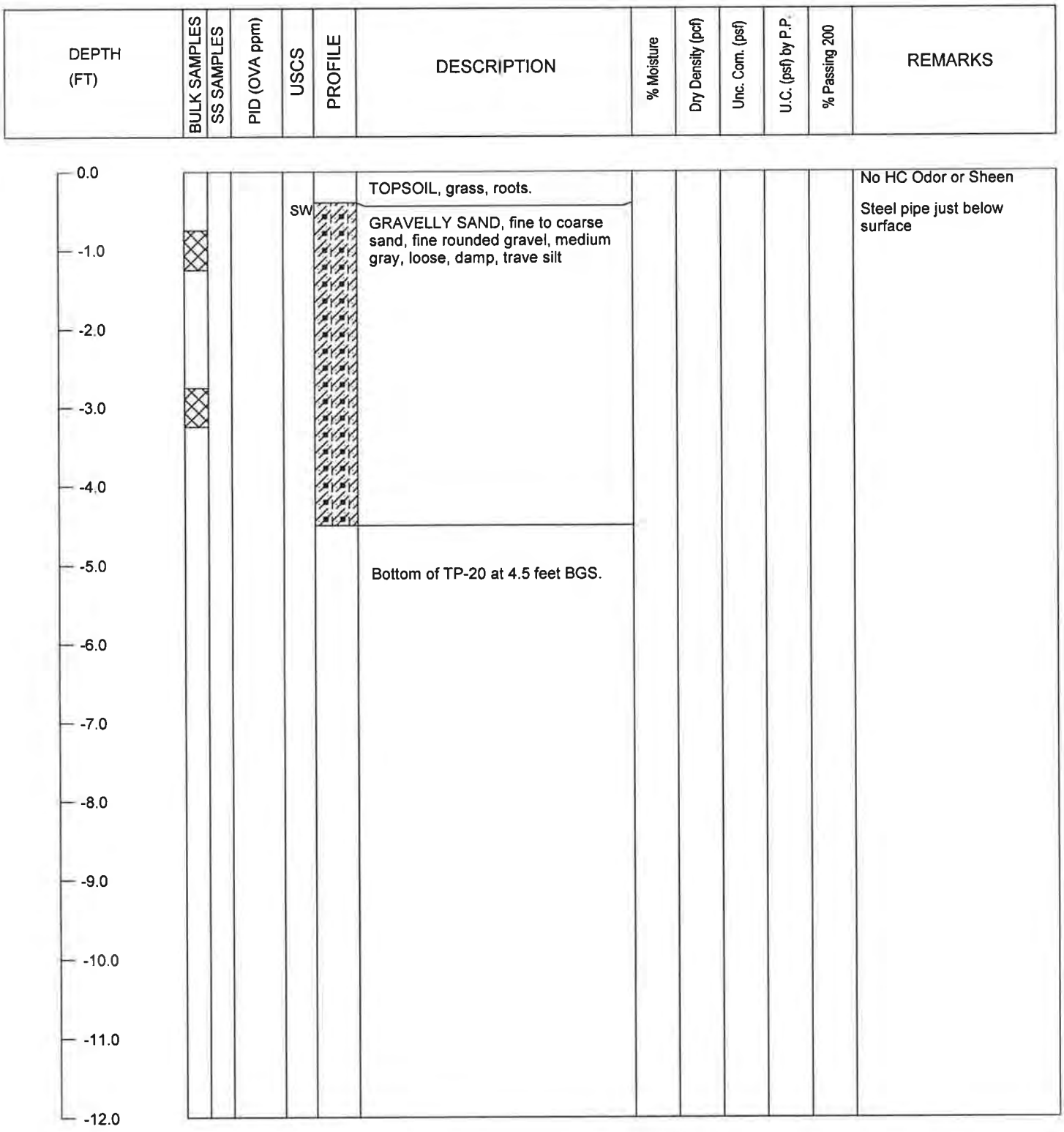
Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA 95501 ph. (707) 441-8855 fax. (707) 441-8877

PROJECT: Blue Lake Business Park
LOCATION: Blue Lake, CA
EXCAVATION METHOD: Backhoe
LOGGED BY: R. Rueber

JOB NUMBER: 013066
DATE: 10/1/13
TOTAL DEPTH OF TEST PIT: 4.5 feet BGS
SAMPLE TYPE: Discrete

TEST PIT NUMBER
TP-20



The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

FIELD LOG

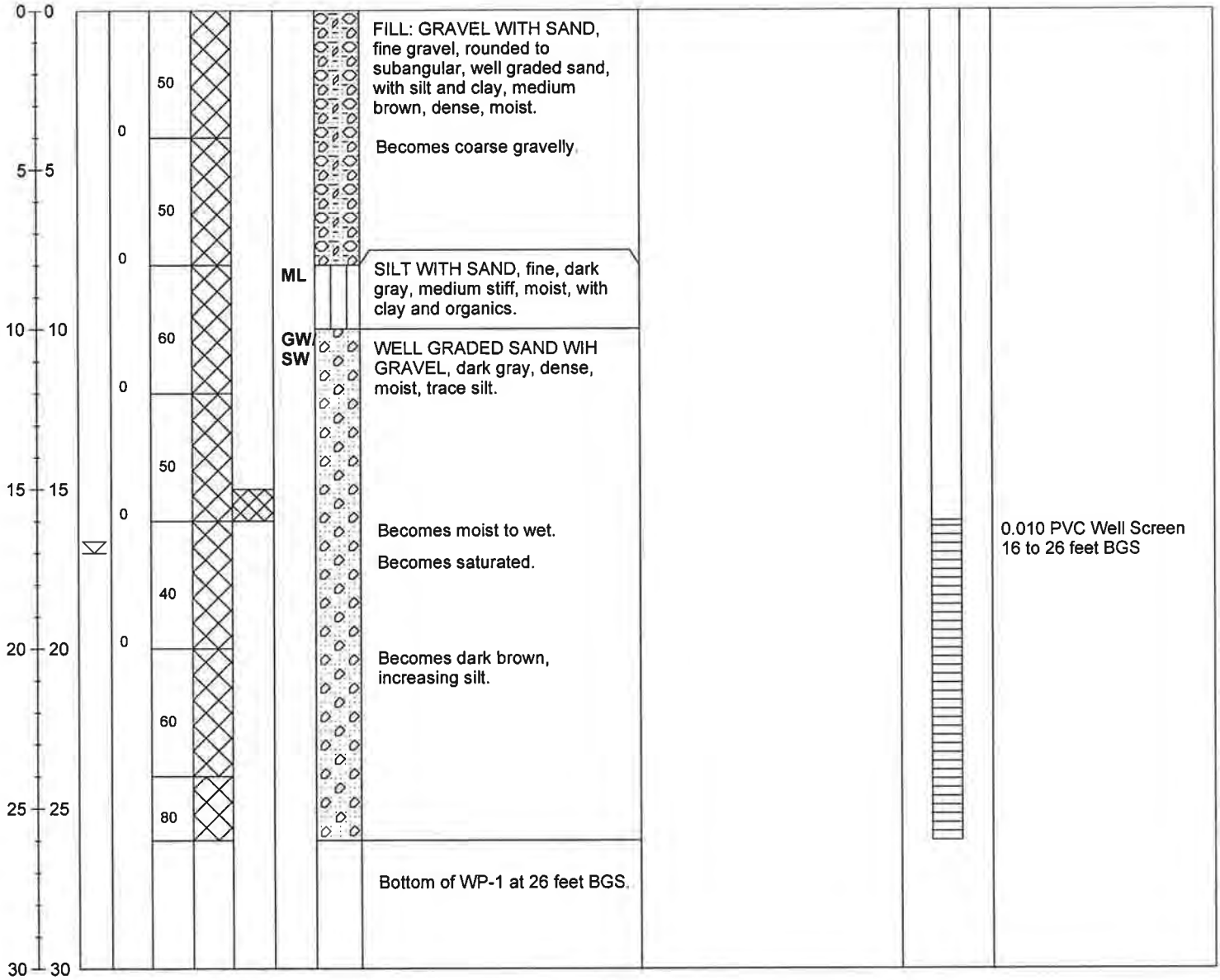
Consulting Engineers & Geologists, Inc.
812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELL POINT LOG

WP-1

PROJ. NAME: Blue Lake Business Park
PROJ. NUMBER: 013066
DRILLER: Fisch
DRILLING METHOD: GeoProbe
SAMPLER TYPE: DT-22
LOGGED BY: R. Rueber

LOCATION: Blue Lake, CA
TOC ELEVATION: --
DEPTH OF BORING/WELL: 26.0 feet BGS
DEPTH TO FIRST WATER: 17 feet BGS
SCREEN INTERVAL: 16-26 feet BGS
DATE: 9/25/13



BORING LOG

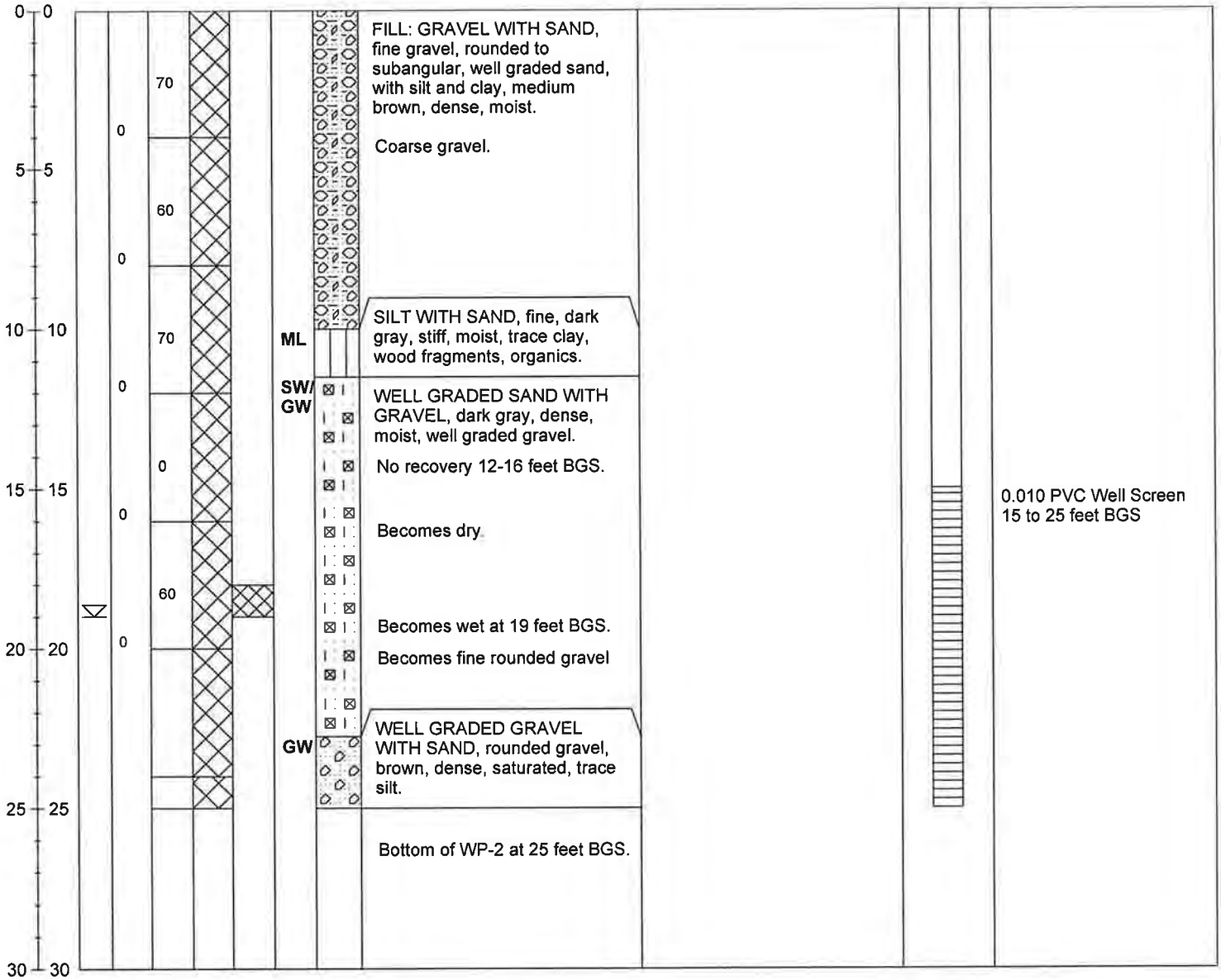
Consulting Engineers & Geologists, Inc.
812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELL POINT LOG

WP-2

PROJ. NAME: Blue Lake Business Park
PROJ. NUMBER: 013066
DRILLER: Fisch
DRILLING METHOD: GeoProbe
SAMPLER TYPE: DT-22
LOGGED BY: R. Rueber

LOCATION: Blue Lake, CA
TOC ELEVATION: --
DEPTH OF BORING/WELL: 25.0 feet BGS
DEPTH TO FIRST WATER: 19 feet BGS
SCREEN INTERVAL: 15-25 feet BGS
DATE: 9/25/13



BORING LOG

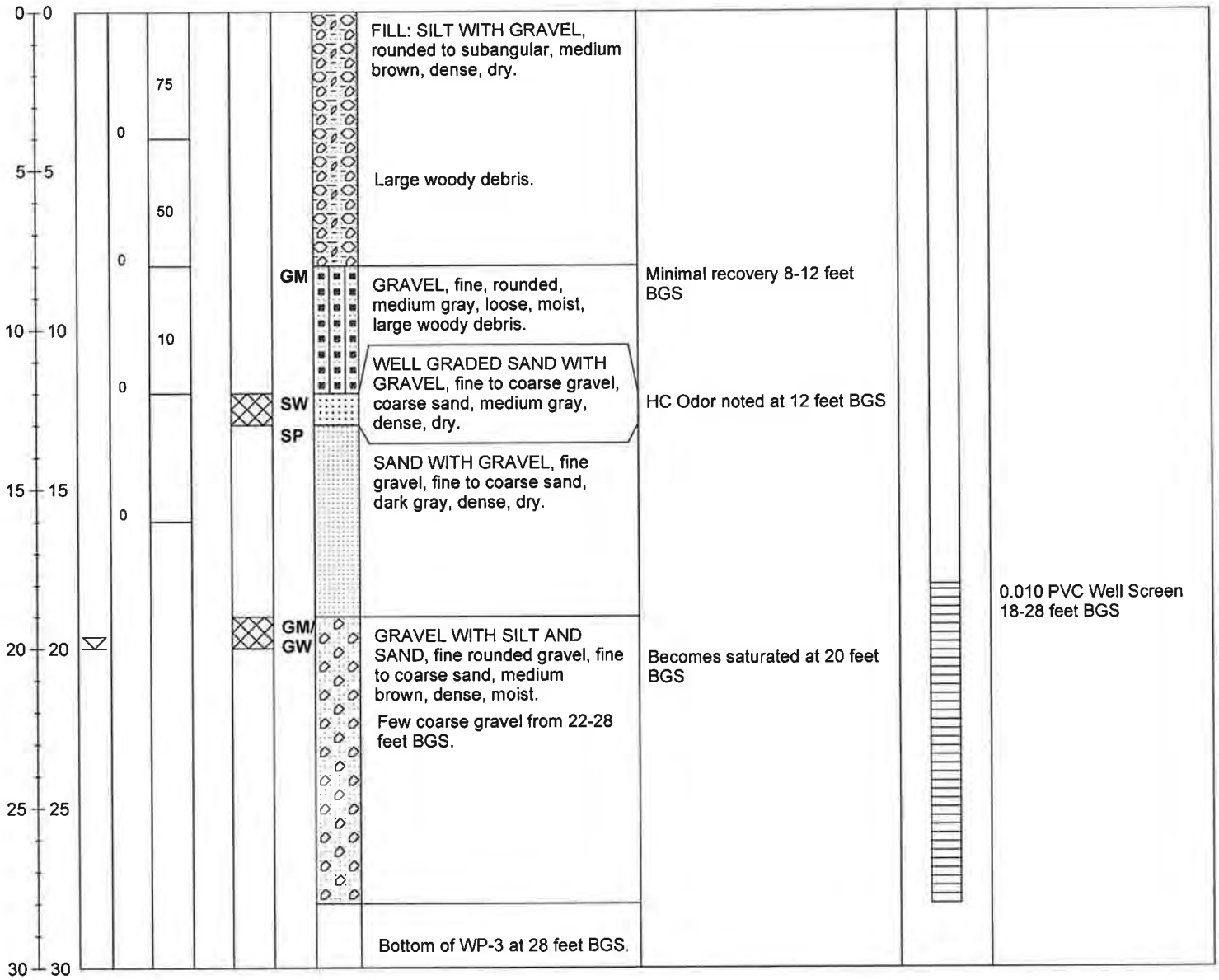
Consulting Engineers & Geologists, Inc.
812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELL POINT LOG

WP-3

PROJ. NAME: Blue Lake Business Park
PROJ. NUMBER: 013066
DRILLER: Fisch
DRILLING METHOD: GeoProbe
SAMPLER TYPE: DT-22
LOGGED BY: R. Rueber

LOCATION: Blue Lake, CA
TOC ELEVATION: --
DEPTH OF BORING/WELL: 28.0 feet BGS
DEPTH TO FIRST WATER: 20 feet BGS
SCREEN INTERVAL: 18-28 feet BGS
DATE: 9/25/13



BORING LOG

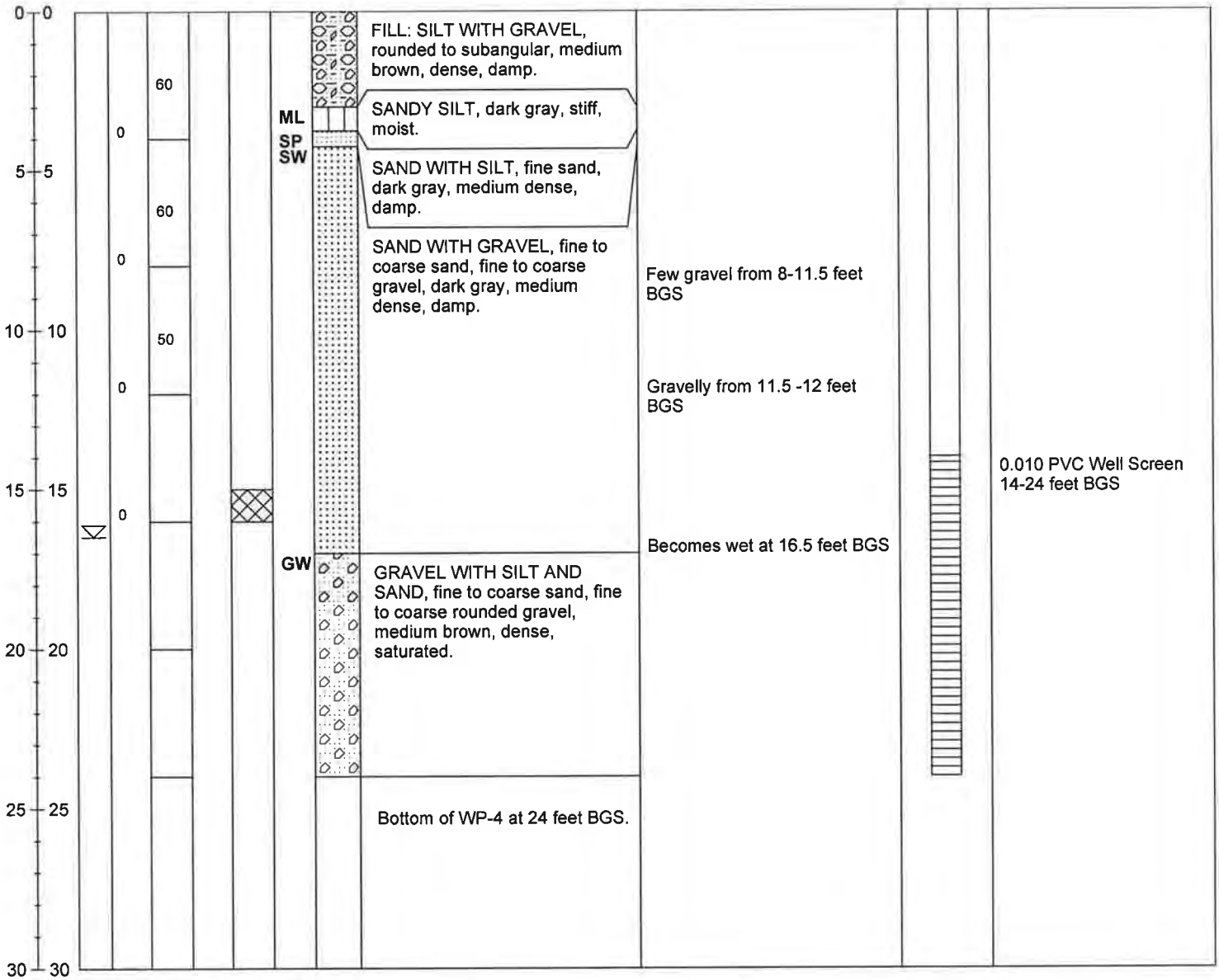
Consulting Engineers & Geologists, Inc.
812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELL POINT LOG

WP-4

PROJ. NAME: Blue Lake Business Park
PROJ. NUMBER: 013066
DRILLER: Fisch
DRILLING METHOD: GeoProbe
SAMPLER TYPE: DT-22
LOGGED BY: R. Rueber

LOCATION: Blue Lake, CA
TOC ELEVATION: --
DEPTH OF BORING/WELL: 24.0 feet BGS
DEPTH TO FIRST WATER: 16.5 feet BGS
SCREEN INTERVAL: 14-24 feet BGS
DATE: 9/25/13



BORING LOG

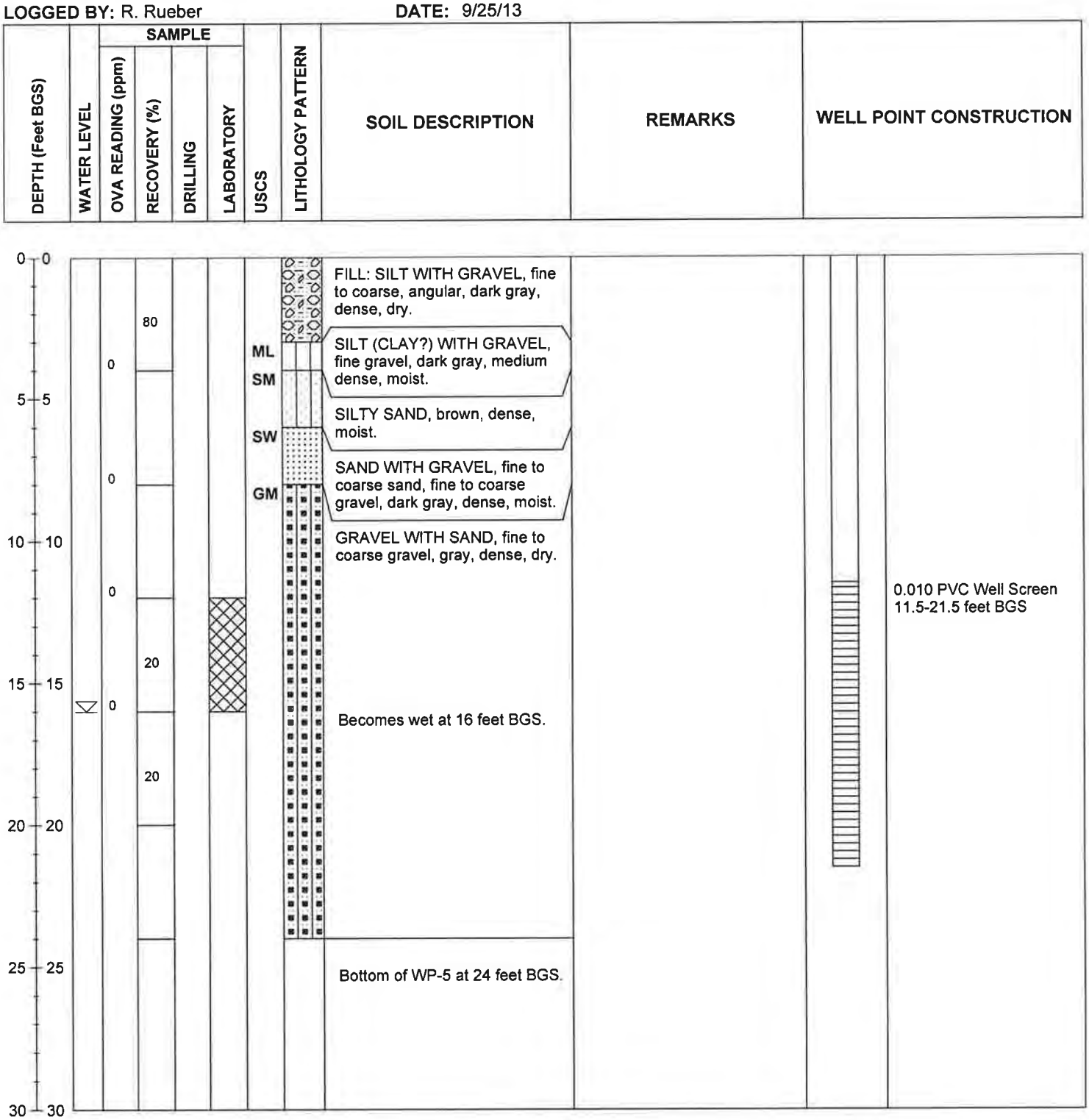
Consulting Engineers & Geologists, Inc.
812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELL POINT LOG

WP-5

PROJ. NAME: Blue Lake Business Park
PROJ. NUMBER: 013066
DRILLER: Fisch
DRILLING METHOD: GeoProbe
SAMPLER TYPE: DT-22
LOGGED BY: R. Rueber

LOCATION: Blue Lake, CA
TOC ELEVATION: --
DEPTH OF BORING/WELL: 24.0 feet BGS
DEPTH TO FIRST WATER: 16 feet BGS
SCREEN INTERVAL: 11.5-21.5 feet BGS
DATE: 9/25/13



BORING LOG

Appendix C

Laboratory Analytical Reports

NORTH COAST LABORATORIES LTD.

November 18, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Erik Nielsen

Order No.: 1309440
Invoice No.: 111885
PO No.:
ELAP No.1247-Expires July 2014

RE: 013066 Blue Lake Business Park

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	WP-1 @ 15-16
01B	WP-1 @ 15-16
02A	WP-2 @ 18-19
02B	WP-2 @ 18-19
03A	WP-3 @ 12
03B	WP-3 @ 12
04A	WP-3 @ 19-20
04B	WP-3 @ 19-20
05A	WP-4 @ 15.5-16.5
05B	WP-4 @ 15.5-16.5
06A	WP-5 @ 12-16
06B	WP-5 @ 12-16
07A	WP-6 @ 12-16
07B	WP-6 @ 12-16
08A	Equipment Blank
08C	Equipment Blank(DISSOLVED)

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

5680 West End Road ◦ Arcata, California 95521-9202 ◦ 707-822-4649 ◦ FAX 707-822-6831

CLIENT: SHN Consulting Engineers and Geologists
Project: 013066 Blue Lake Business Park
Lab Order: 1309440

CASE NARRATIVE

THIS IS AN AMENDED REPORT:
Arsenic was added as per client request.

M3: The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range.

Nickel:
Due to trace contamination in the blank standards the reporting limit was raised.

TPH @ Diesel/Motor Oil with Silica Gel Cleanup:
The recovery of diesel in the laboratory control sample duplicate (LCSD) was below the lower acceptance limit. The magnitude of the deviation, less than 1%, was not sufficient to impact the quality of the data, therefore the data were approved.

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1309440

ANALYTICAL REPORT

Client Sample ID: WP-1 @ 15-16
Lab ID: 1309440-01A

Received: 9/25/2013
Collected: 9/25/2013 10:35

Test Name: TPH as Diesel/Motor Oil

Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	9/30/2013	9/30/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	9/30/2013	9/30/2013

Client Sample ID: WP-1 @ 15-16
Lab ID: 1309440-01B

Received: 9/25/2013
Collected: 9/25/2013 10:35

Test Name: EPA 6010B

Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.7		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	38		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	4.7		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	49		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	40		1.0	mg/kg	1.0	9/27/2013	10/1/2013

Client Sample ID: WP-2 @ 18-19
Lab ID: 1309440-02A

Received: 9/25/2013
Collected: 9/25/2013 11:50

Test Name: TPH as Diesel/Motor Oil

Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	9/30/2013	9/30/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	9/30/2013	9/30/2013

Client Sample ID: WP-2 @ 18-19
Lab ID: 1309440-02B

Received: 9/25/2013
Collected: 9/25/2013 11:50

Test Name: EPA 6010B

Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.0		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	47		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	5.9		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	51		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	48		1.0	mg/kg	1.0	9/27/2013	10/1/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: WP-3 @ 12
Lab ID: 1309440-03A

Received: 9/25/2013
Collected: 9/25/2013 13:30

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*1,600*		100	mg/kg	100	9/30/2013	10/5/2013
TPHC Motor Oil	*2,800*		1,000	mg/kg	100	9/30/2013	10/5/2013

Client Sample ID: WP-3 @ 12
Lab ID: 1309440-03B

Received: 9/25/2013
Collected: 9/25/2013 13:30

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.0		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	36		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	16		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	49		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	49		1.0	mg/kg	1.0	9/27/2013	10/1/2013

Client Sample ID: WP-3 @ 19-20
Lab ID: 1309440-04A

Received: 9/25/2013
Collected: 9/25/2013 13:40

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	9/30/2013	9/30/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	9/30/2013	9/30/2013

Client Sample ID: WP-3 @ 19-20
Lab ID: 1309440-04B

Received: 9/25/2013
Collected: 9/25/2013 13:40

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	2.3		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	59		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	5.5		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	57		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	47		1.0	mg/kg	1.0	9/27/2013	10/1/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1309440

ANALYTICAL REPORT

Client Sample ID: WP-4 @ 15.5-16.5
Lab ID: 1309440-05A

Received: 9/25/2013
Collected: 9/25/2013 14:30

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	9/30/2013	9/30/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	9/30/2013	9/30/2013

Client Sample ID: WP-4 @ 15.5-16.5
Lab ID: 1309440-05B

Received: 9/25/2013
Collected: 9/25/2013 14:30

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.7		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	39		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	5.3		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	49		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	46		1.0	mg/kg	1.0	9/27/2013	10/1/2013

Client Sample ID: WP-5 @ 12-16
Lab ID: 1309440-06A

Received: 9/25/2013
Collected: 9/25/2013 15:30

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	9/30/2013	9/30/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	9/30/2013	9/30/2013

Client Sample ID: WP-5 @ 12-16
Lab ID: 1309440-06B

Received: 9/25/2013
Collected: 9/25/2013 15:30

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.9		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	41		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	5.8		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	50		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	47		1.0	mg/kg	1.0	9/27/2013	10/1/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1309440

ANALYTICAL REPORT

Client Sample ID: WP-6 @ 12-16
Lab ID: 1309440-07A

Received: 9/25/2013
Collected: 9/25/2013 15:30

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	9/30/2013	9/30/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	9/30/2013	9/30/2013

Client Sample ID: WP-6 @ 12-16
Lab ID: 1309440-07B

Received: 9/25/2013
Collected: 9/25/2013 15:30

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.3		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Cadmium	ND		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Chromium	40		2.0	mg/kg	1.0	9/27/2013	10/1/2013
Lead	6.3		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Nickel	52		1.0	mg/kg	1.0	9/27/2013	10/1/2013
Zinc	48		1.0	mg/kg	1.0	9/27/2013	10/1/2013

Client Sample ID: Equipment Blank
Lab ID: 1309440-08A

Received: 9/25/2013
Collected: 9/25/2013 14:05

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3511/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/4/2013
TPHC Motor Oil	***220***	M3	170	µg/L	1.0	10/2/2013	10/4/2013

Client Sample ID: Equipment Blank(DISSOLVED)
Lab ID: 1309440-08C

Received: 9/25/2013
Collected: 9/25/2013 14:05

Test Name: ICP-MS Metals
Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309440
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-29669** Batch ID: **29669** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/1/2013 10:37:37 AM** Prep Date: **9/27/2013**
Client ID: Run ID: **INICP2_131001A** SeqNo: **1103355**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	2.0									
Lead	ND	1.0									
Nickel	ND	1.0									
Zinc	ND	1.0									

Sample ID: **MB-29672** Batch ID: **29672** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 10:22:10 AM** Prep Date: **10/1/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104659**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	1.0									
Chromium	ND	1.0									
Lead	ND	1.0									
Nickel	ND	5.0									
Zinc	ND	5.0									

Sample ID: **MB-29666** Batch ID: **29666** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/5/2013 2:51:14 AM** Prep Date: **9/30/2013**
Client ID: Run ID: **ORGC14_131004B** SeqNo: **1104297**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309440
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29681** Batch ID: **29681** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **10/4/2013 6:12:49 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ORGC14_131004A** SeqNo: **1104289**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
TPHC Motor Oil	ND	170									

Sample ID: **MB-29665** Batch ID: **29665** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **9/30/2013 2:48:59 PM** Prep Date: **9/30/2013**
Client ID: Run ID: **ORGC14_130930A** SeqNo: **1103302**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309440
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **1309440-01AMS** Batch ID: **29666** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/5/2013 4:20:47 AM** Prep Date: **9/30/2013**
Client ID: **WP-1 @ 15-16** Run ID: **ORGC14_131004B** SeqNo: **1104300**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.209	1.0	10.0	0	92.1%	78	115	0			
TPHC Motor Oil	23.24	10	20.0	0	116%	79	130	0			

Sample ID: **1309440-01AMS** Batch ID: **29665** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **9/30/2013 4:22:39 PM** Prep Date: **9/30/2013**
Client ID: **WP-1 @ 15-16** Run ID: **ORGC14_130930A** SeqNo: **1103305**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.62	1.0	10.0	0	106%	83	122	0			
TPHC Motor Oil	23.16	10	20.0	0.345	114%	78	131	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309440
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-29669** Batch ID: **29669** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/1/2013 10:39:32 AM** Prep Date: **9/27/2013**
Client ID: Run ID: **INICP2_131001A** SeqNo: **1103356**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	98.51	2.0	100	0	98.5%	85	115	0			
Cadmium	97.90	1.0	100	0	97.9%	85	115	0			
Chromium	98.38	2.0	100	0	98.4%	85	115	0			
Lead	95.80	1.0	100	0	95.8%	85	115	0			
Nickel	104.7	1.0	100	0	105%	85	115	0			
Zinc	95.88	1.0	100	0	95.9%	85	115	0			

Sample ID: **LCSD-29669** Batch ID: **29669** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/1/2013 10:41:33 AM** Prep Date: **9/27/2013**
Client ID: Run ID: **INICP2_131001A** SeqNo: **1103357**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	98.64	2.0	100	0	98.6%	85	115	98.5	0.138%	20	
Cadmium	98.30	1.0	100	0	98.3%	85	115	97.9	0.416%	20	
Chromium	98.78	2.0	100	0	98.8%	85	115	98.4	0.406%	20	
Lead	96.02	1.0	100	0	96.0%	85	115	95.8	0.224%	20	
Nickel	105.5	1.0	100	0	105%	85	115	105	0.709%	20	
Zinc	98.48	1.0	100	0	98.5%	85	115	95.9	2.67%	20	

Sample ID: **LCS-29672** Batch ID: **29672** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 10:26:16 AM** Prep Date: **10/1/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104660**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	492.2	5.0	500	0	98.4%	85	115	0			
Chromium	512.5	5.0	500	0	103%	85	115	0			
Lead	491.6	5.0	500	0	98.3%	85	115	0			
Nickel	508.1	25	500	0.593	102%	85	115	0			
Zinc	491.4	25	500	0	98.3%	85	115	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309440
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29672** Batch ID: **29672** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 10:30:23 AM** Prep Date: **10/1/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104661**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	487.5	5.0	500	0	97.5%	85	115	492	0.966%	20	
Chromium	503.2	5.0	500	0	101%	85	115	512	1.83%	20	
Lead	484.2	5.0	500	0	96.8%	85	115	492	1.51%	20	
Nickel	487.0	25	500	0.593	97.3%	85	115	508	4.25%	20	
Zinc	474.7	25	500	0	94.9%	85	115	491	3.46%	20	

Sample ID: **LCS-29666** Batch ID: **29666** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/5/2013 3:21:08 AM** Prep Date: **9/30/2013**
Client ID: Run ID: **ORGC14_131004B** SeqNo: **1104298**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	8.570	1.0	10.0	0	85.7%	78	115	0			
TPHC Motor Oil	21.17	10	20.0	0	106%	79	130	0			

Sample ID: **LCSD-29666** Batch ID: **29666** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/5/2013 3:51:00 AM** Prep Date: **9/30/2013**
Client ID: Run ID: **ORGC14_131004B** SeqNo: **1104299**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.632	1.0	10.0	0	96.3%	78	115	8.57	11.7%	30	
TPHC Motor Oil	24.26	10	20.0	0	121%	79	130	21.2	13.6%	30	

Sample ID: **LCS-29681** Batch ID: **29681** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **10/4/2013 6:44:33 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ORGC14_131004A** SeqNo: **1104290**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	465.8	50	500	0	93.2%	78	113	0			
TPHC Motor Oil	1,146	170	1,000	0	115%	83	121	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309440
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29681** Batch ID: **29681** Test Code: **SGTPDMW** Units: **µg/L** Analysis Date **10/4/2013 7:15:55 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ORGC14_131004A** SeqNo: **1104291**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	386.2	50	500	0	77.2%	78	113	466	18.7%	30	S
TPHC Motor Oil	1,033	170	1,000	0	103%	83	121	1,150	10.4%	30	

Sample ID: **LCS-29665** Batch ID: **29665** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **9/30/2013 3:20:11 PM** Prep Date: **9/30/2013**
Client ID: Run ID: **ORGC14_130930A** SeqNo: **1103303**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.15	1.0	10.0	0	102%	83	122	0			
TPHC Motor Oil	20.75	10	20.0	0	104%	78	131	0			

Sample ID: **LCSD-29665** Batch ID: **29665** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **9/30/2013 3:51:30 PM** Prep Date: **9/30/2013**
Client ID: Run ID: **ORGC14_130930A** SeqNo: **1103304**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.29	1.0	10.0	0	103%	83	122	10.2	1.39%	30	
TPHC Motor Oil	20.85	10	20.0	0	104%	78	131	20.8	0.485%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.

Blue Lake Arsenic Testing

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 9:29 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Hi Roxanne, please proceed with amending the lab reports to include arsenic in the metals results.

Lab reports include:

- 1309440-soil
- 1309455-water
- 1310014-soil
- 1310035-soil

Thanks, let me know if you have questions.

Erik

Erik J. Nielsen, P.G., C.H.G.
SHN Consulting Engineers & Geologists
812 W. Wabash Ave, Eureka, CA 95501-2238
Phone: 707-441-8855 / Fax: 707-441-8877
email: enielsen@shn-engr.com

Roxanne Golich <rgolich@northcoastlabs.com> Mon, Nov 18, 2013 at 9:50 AM
To: Erik Nielsen <enielsen@shn-engr.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Will do. If we get the results to you by Wednesday is that OK? Roxanne

North Coast Laboratories will close at noon on Wednesday November 27th for the Thanksgiving holiday. We will resume normal business hours Monday Dec 2nd.

rgolich@northcoastlabs.com

Phone: 707-822-4649 Fax: 707-822-6831 Cell: 707-845-2664

www.northcoastlabs.com

[Quoted text hidden]

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 10:14 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>

Wednesday will work.

Thank you

From: Roxanne Golich [mailto:rgolich@northcoastlabs.com]
Sent: Monday, November 18, 2013 9:50 AM
To: Erik Nielsen
Cc: Mike Foget
Subject: Re: Blue Lake Arsenic Testing

[Quoted text hidden]

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1309440

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.COM
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: [X] STD (2-3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
[ ] State Forms
[ ] Geotracker [ ] SWAMP [ ] Other EDD:
[X] Final Report PDF [ ] FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica Gel Cleanup	CAMS	Dioxins/Furans (Test America)	VOC's	SVOCs (Caliscience)
	WP-1 @ 15-16	9/25/13	10:35	S			X	X			
	WP-2 @ 18-19		11:50	S							
	WP-3 @ 12		13:30	S							
	WP-3 @ 19-20		13:40	S							
	WP-4 @ 15.5-16.5		14:30	S							
	WP-5 @ 12-16		15:30	S							
	WP-6 @ 12-16		15:30	S							
	Equipment Blank	V	14:05	W							

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 3.0 °C
	Received On Ice? (Y) N
	Samples Intact? (Y) N
	Preserved? Y / N
	Preserved @ NCL?
Water Samples were Field Filtered & Preserved, as per Brenda Howell	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature] @ 16:22 9/25/13		RBm	9/25/13 1621

SAMPLE DISPOSAL
[X] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

RECEIVED NOV 19 2013

November 18, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

Order No.: 1309455
Invoice No.: 111932
PO No.:
ELAP No.1247-Expires July 2014

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	WP-1
01C	WP-1(DISSOLVED)
02A	WP-2
02C	WP-2(DISSOLVED)
03A	WP-3
03C	WP-3(DISSOLVED)
03D	WP-3
04A	WP-4
04C	WP-4(DISSOLVED)
05A	WP-5
05C	WP-5(DISSOLVED)
06A	WP-6
06C	WP-6(DISSOLVED)
07A	Field Blank
07C	Field Blank(DISSOLVED)

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

North Coast Laboratories, Ltd. **Date:** 18-Nov-2013

CLIENT: SHN Consulting Engineers and Geologists
Project: 013066 Blue Lake Business Park
Lab Order: 1309455

CASE NARRATIVE

THIS IS AN AMENDED REPORT:
Arsenic was added as per client request.

Nickel:
Due to trace contamination in the blank standards the reporting limit was raised.

Arsenic:
The laboratory control samples (LCS/LCSD) percent recoveries were below the acceptance limits. The sample response was such that the sample results would have been below the reporting limit even if the LCS/LCSD were within the acceptance limits.

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1309455

ANALYTICAL REPORT

Client Sample ID: WP-1
Lab ID: 1309455-01A

Received: 9/26/2013
Collected: 9/26/2013 9:00

Test Name: TPH as Diesel/Motor Oil

Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/4/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/4/2013

Client Sample ID: WP-1(DISSOLVED)
Lab ID: 1309455-01C

Received: 9/26/2013
Collected: 9/26/2013 9:00

Test Name: ICP-MS Metals

Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	5.8		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	7.9		5.0	µg/L	1.0	10/1/2013	10/8/2013

Client Sample ID: WP-2
Lab ID: 1309455-02A

Received: 9/26/2013
Collected: 9/26/2013 9:30

Test Name: TPH as Diesel/Motor Oil

Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/4/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/4/2013

Client Sample ID: WP-2(DISSOLVED)
Lab ID: 1309455-02C

Received: 9/26/2013
Collected: 9/26/2013 9:30

Test Name: ICP-MS Metals

Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	8.3		5.0	µg/L	1.0	10/1/2013	10/8/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1309455

ANALYTICAL REPORT

Client Sample ID: WP-3
Lab ID: 1309455-03A

Received: 9/26/2013
Collected: 9/26/2013 10:00

Test Name: TPH as Diesel/Motor Oil

Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/4/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/4/2013

Client Sample ID: WP-3(DISSOLVED)
Lab ID: 1309455-03C

Received: 9/26/2013
Collected: 9/26/2013 10:00

Test Name: ICP-MS Metals

Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: WP-3
Lab ID: 1309455-03D

Received: 9/26/2013
Collected: 9/26/2013 10:00

Test Name: EPA 8260B

Reference: EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		9/27/2013
Vinyl chloride	ND		0.50	µg/L	1.0		9/27/2013
Bromomethane	ND		0.50	µg/L	1.0		9/27/2013
Chloroethane	ND		0.50	µg/L	1.0		9/27/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		9/27/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		9/27/2013
Methylene chloride	ND		0.50	µg/L	1.0		9/27/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		9/27/2013
Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	1.0		9/27/2013
Tert-butyl alcohol (TBA)	ND		10	µg/L	1.0		9/27/2013
Di-isopropyl ether (DIPE)	ND		1.0	µg/L	1.0		9/27/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		9/27/2013
Ethyl tert-butyl ether (ETBE)	ND		1.0	µg/L	1.0		9/27/2013
cis-1,2-Dichloroethene	ND		0.50	µg/L	1.0		9/27/2013
Chloroform	ND		0.50	µg/L	1.0		9/27/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		9/27/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		9/27/2013
Benzene	ND		0.50	µg/L	1.0		9/27/2013
Tert-amyl methyl ether (TAME)	ND		0.50	µg/L	1.0		9/27/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		9/27/2013
Trichloroethene	ND		0.50	µg/L	1.0		9/27/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		9/27/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		9/27/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		9/27/2013
Toluene	ND		0.50	µg/L	1.0		9/27/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		9/27/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		9/27/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		9/27/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		9/27/2013
1,2-Dibromoethane (EDB)	ND		1.0	µg/L	1.0		9/27/2013
Chlorobenzene	ND		0.50	µg/L	1.0		9/27/2013
Ethylbenzene	ND		0.50	µg/L	1.0		9/27/2013
m,p-Xylene	ND		0.50	µg/L	1.0		9/27/2013
o-Xylene	ND		0.50	µg/L	1.0		9/27/2013
Bromoform	ND		0.50	µg/L	1.0		9/27/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		9/27/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		9/27/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		9/27/2013
1,2-Dichlorobenzene	ND		0.50	µg/L	1.0		9/27/2013
Surrogate: 1,2-Dichloroethane-d4	84.7		68.8-126	% Rec	1.0		9/27/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: WP-3
Lab ID: 1309455-03D
Received: 9/26/2013
Collected: 9/26/2013 10:00

Surrogate: Dibromofluoromethane	99.2	72.3-120	% Rec	1.0	9/27/2013
Surrogate: Toluene-d8	104	77.6-137	% Rec	1.0	9/27/2013

Test Name: TPH as Gasoline
Reference: LUFT/EPA 8260B Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND		50	µg/L	1.0		10/4/2013

Client Sample ID: WP-4
Lab ID: 1309455-04A
Received: 9/26/2013
Collected: 9/26/2013 11:10

Test Name: TPH as Diesel/Motor Oil
Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/4/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/4/2013

Client Sample ID: WP-4(DISSOLVED)
Lab ID: 1309455-04C
Received: 9/26/2013
Collected: 9/26/2013 11:10

Test Name: ICP-MS Metals
Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	5.4		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013

Client Sample ID: WP-5
Lab ID: 1309455-05A
Received: 9/26/2013
Collected: 9/26/2013 11:35

Test Name: TPH as Diesel/Motor Oil
Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/5/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/5/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: WP-5(DISSOLVED)
Lab ID: 1309455-05C

Received: 9/26/2013
Collected: 9/26/2013 11:35

Test Name: ICP-MS Metals
Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	5.4		5.0	µg/L	1.0	10/1/2013	10/8/2013

Client Sample ID: WP-6
Lab ID: 1309455-06A

Received: 9/26/2013
Collected: 9/26/2013 10:00

Test Name: TPH as Diesel/Motor Oil
Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/5/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/5/2013

Client Sample ID: WP-6(DISSOLVED)
Lab ID: 1309455-06C

Received: 9/26/2013
Collected: 9/26/2013 10:00

Test Name: ICP-MS Metals
Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013

Client Sample ID: Field Blank
Lab ID: 1309455-07A

Received: 9/26/2013
Collected: 9/26/2013 11:00

Test Name: TPH as Diesel/Motor Oil
Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/2/2013	10/5/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/2/2013	10/5/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1309455

ANALYTICAL REPORT

Client Sample ID: Field Blank(DISSOLVED)
Lab ID: 1309455-07C

Received: 9/26/2013
Collected: 9/26/2013 11:00

Test Name: ICP-MS Metals

Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	ND		2.0	µg/L	1.0	10/1/2013	10/8/2013
Cadmium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/1/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013
Zinc	ND		5.0	µg/L	1.0	10/1/2013	10/8/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB 092613** Batch ID: **R75951** Test Code: **8260EW** Units: **µg/L** Analysis Date **9/27/2013 4:48:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS2_130927A** SeqNo: **1102871**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Bromomethane	ND	0.50									
Chloroethane	ND	0.50									
Trichlorofluoromethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
Methylene chloride	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Methyl tert-butyl ether (MTBE)	ND	0.50									
Tert-butyl alcohol (TBA)	ND	10									
Di-isopropyl ether (DIPE)	ND	1.0									
1,1-Dichloroethane	ND	0.50									
Ethyl tert-butyl ether (ETBE)	ND	1.0									
cis-1,2-Dichloroethene	ND	0.50									
Chloroform	ND	0.50									
Carbon Tetrachloride	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
Benzene	ND	0.50									
Tert-amyl methyl ether (TAME)	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Trichloroethene	ND	0.50									
1,2-Dichloropropane	ND	1.0									
Bromodichloromethane	ND	0.50									
cis-1,3-Dichloropropene	ND	1.0									
Toluene	ND	0.50									
Tetrachloroethene	ND	0.50									
trans-1,3-Dichloropropene	ND	1.0									
1,1,2-Trichloroethane	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Dibromochloromethane	ND	0.50							
1,2-Dibromoethane (EDB)	ND	1.0							
Chlorobenzene	ND	0.50							
Ethylbenzene	ND	0.50							
m,p-Xylene	ND	0.50							
o-Xylene	ND	0.50							
Bromoform	ND	0.50							
1,1,2,2-Tetrachloroethane	ND	0.50							
1,3-Dichlorobenzene	ND	0.50							
1,4-Dichlorobenzene	ND	0.50							
1,2-Dichlorobenzene	ND	0.50							
Surrogate: Dibromofluoromethane	0.984	0.10	1.00	0	98.4%	72	120	0	
Surrogate: 1,2-Dichloroethane-d4	0.934	0.10	1.00	0	93.4%	69	126	0	
Surrogate: Toluene-d8	1.02	0.10	1.00	0	102%	78	137	0	

Sample ID: **MB 100413** Batch ID: **R76031** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **10/4/2013 4:05:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131004B** SeqNo: **1104253**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	ND	50									

Sample ID: **MB-29672** Batch ID: **29672** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 10:22:10 AM** Prep Date: **10/1/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104659**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Lead	ND	1.0									
Nickel	ND	5.0									
Zinc	ND	5.0									

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29680** Batch ID: **29680** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **10/4/2013 8:48:45 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ORGC14_131004C** SeqNo: **1104304**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
TPHC Motor Oil	ND	170									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-13291** Batch ID: **R75951** Test Code: **8260EW** Units: **µg/L** Analysis Date **9/27/2013 3:25:00 AM** Prep Date:

Client ID: Run ID: **ORGCMS2_130927A** SeqNo: **1102869**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	18.17	0.50	20.0	0	90.9%	44	131	0			
Vinyl chloride	17.32	0.50	20.0	0	86.6%	51	133	0			
Bromomethane	20.92	0.50	20.0	0	105%	42	142	0			
Chloroethane	17.00	0.50	20.0	0	85.0%	55	132	0			
Trichlorofluoromethane	17.56	0.50	20.0	0	87.8%	47	138	0			
1,1-Dichloroethene	16.75	0.50	20.0	0	83.8%	55	126	0			
Methylene chloride	20.96	0.50	20.0	0	105%	53	128	0			
trans-1,2-Dichloroethene	19.37	0.50	20.0	0	96.9%	53	135	0			
Methyl tert-butyl ether (MTBE)	21.42	0.50	20.0	0	107%	60	136	0			
Tert-butyl alcohol (TBA)	402.1	10	400	0	101%	38	186	0			
Di-isopropyl ether (DIPE)	19.28	1.0	20.0	0	96.4%	58	137	0			
1,1-Dichloroethane	18.44	0.50	20.0	0	92.2%	62	118	0			
Ethyl tert-butyl ether (ETBE)	19.30	1.0	20.0	0	96.5%	65	132	0			
cis-1,2-Dichloroethene	20.59	0.50	20.0	0	103%	72	119	0			
Chloroform	18.65	0.50	20.0	0	93.3%	65	126	0			
Carbon Tetrachloride	19.79	0.50	20.0	0	98.9%	58	140	0			
1,1,1-Trichloroethane	19.48	0.50	20.0	0	97.4%	61	132	0			
Benzene	19.92	0.50	20.0	0	99.6%	74	118	0			
Tert-amyl methyl ether (TAME)	18.92	0.50	20.0	0	94.6%	71	132	0			
1,2-Dichloroethane	18.73	0.50	20.0	0	93.6%	68	128	0			
Trichloroethene	19.72	0.50	20.0	0	98.6%	75	113	0			
1,2-Dichloropropane	19.37	1.0	20.0	0	96.9%	63	126	0			
Bromodichloromethane	19.30	0.50	20.0	0	96.5%	69	124	0			
cis-1,3-Dichloropropene	18.49	1.0	20.0	0	92.4%	63	133	0			
Toluene	19.46	0.50	20.0	0	97.3%	76	133	0			
Tetrachloroethene	20.31	0.50	20.0	0	102%	60	129	0			
trans-1,3-Dichloropropene	18.33	1.0	20.0	0	91.7%	66	139	0			
1,1,2-Trichloroethane	17.52	0.50	20.0	0	87.6%	64	132	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Dibromochloromethane	22.55	0.50	20.0	0	113%	72	135	0
1,2-Dibromoethane (EDB)	22.33	1.0	20.0	0	112%	73	133	0
Chlorobenzene	19.97	0.50	20.0	0	99.9%	79	119	0
Ethylbenzene	20.38	0.50	20.0	0	102%	77	129	0
m,p-Xylene	40.27	0.50	40.0	0	101%	82	129	0
o-Xylene	20.45	0.50	20.0	0	102%	84	126	0
Bromoform	20.86	0.50	20.0	0	104%	71	129	0
1,1,2,2-Tetrachloroethane	18.30	0.50	20.0	0	91.5%	62	138	0
1,3-Dichlorobenzene	17.89	0.50	20.0	0	89.5%	73	128	0
1,4-Dichlorobenzene	19.52	0.50	20.0	0	97.6%	79	121	0
1,2-Dichlorobenzene	19.52	0.50	20.0	0	97.6%	73	122	0
Surrogate: Dibromofluoromethane	0.966	0.10	1.00	0	96.6%	72	120	0
Surrogate: 1,2-Dichloroethane-d4	0.949	0.10	1.00	0	94.9%	69	126	0
Surrogate: Toluene-d8	0.987	0.10	1.00	0	98.7%	78	137	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-13291** Batch ID: **R75951** Test Code: **8260EW** Units: **µg/L** Analysis Date **9/27/2013 3:53:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS2_130927A** SeqNo: **1102870**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	17.90	0.50	20.0	0	89.5%	44	131	18.2	1.53%	30	
Vinyl chloride	17.20	0.50	20.0	0	86.0%	51	133	17.3	0.674%	30	
Bromomethane	20.16	0.50	20.0	0	101%	42	142	20.9	3.69%	30	
Chloroethane	16.98	0.50	20.0	0	84.9%	55	132	17.0	0.125%	30	
Trichlorofluoromethane	17.54	0.50	20.0	0	87.7%	47	138	17.6	0.104%	30	
1,1-Dichloroethene	16.81	0.50	20.0	0	84.0%	55	126	16.8	0.345%	30	
Methylene chloride	20.55	0.50	20.0	0	103%	53	128	21.0	1.96%	30	
trans-1,2-Dichloroethene	18.98	0.50	20.0	0	94.9%	53	135	19.4	2.03%	30	
Methyl tert-butyl ether (MTBE)	21.28	0.50	20.0	0	106%	60	136	21.4	0.666%	30	
Tert-butyl alcohol (TBA)	457.4	10	400	0	114%	38	186	402	12.9%	30	
Di-isopropyl ether (DIPE)	19.38	1.0	20.0	0	96.9%	58	137	19.3	0.554%	30	
1,1-Dichloroethane	18.15	0.50	20.0	0	90.7%	62	118	18.4	1.61%	30	
Ethyl tert-butyl ether (ETBE)	19.10	1.0	20.0	0	95.5%	65	132	19.3	1.03%	30	
cis-1,2-Dichloroethene	19.91	0.50	20.0	0	99.6%	72	119	20.6	3.34%	30	
Chloroform	18.17	0.50	20.0	0	90.9%	65	126	18.6	2.60%	30	
Carbon Tetrachloride	19.38	0.50	20.0	0	96.9%	58	140	19.8	2.06%	30	
1,1,1-Trichloroethane	18.93	0.50	20.0	0	94.6%	61	132	19.5	2.86%	30	
Benzene	19.51	0.50	20.0	0	97.6%	74	118	19.9	2.05%	30	
Tert-amyl methyl ether (TAME)	18.75	0.50	20.0	0	93.7%	71	132	18.9	0.925%	30	
1,2-Dichloroethane	18.80	0.50	20.0	0	94.0%	68	128	18.7	0.409%	30	
Trichloroethene	19.08	0.50	20.0	0	95.4%	75	113	19.7	3.27%	30	
1,2-Dichloropropane	18.94	1.0	20.0	0	94.7%	63	126	19.4	2.28%	30	
Bromodichloromethane	19.03	0.50	20.0	0	95.2%	69	124	19.3	1.42%	30	
cis-1,3-Dichloropropene	18.10	1.0	20.0	0	90.5%	63	133	18.5	2.12%	30	
Toluene	19.28	0.50	20.0	0	96.4%	76	133	19.5	0.942%	30	
Tetrachloroethene	20.04	0.50	20.0	0	100%	60	129	20.3	1.35%	30	
trans-1,3-Dichloropropene	18.39	1.0	20.0	0	92.0%	66	139	18.3	0.306%	30	
1,1,2-Trichloroethane	18.54	0.50	20.0	0	92.7%	64	132	17.5	5.62%	30	
Dibromochloromethane	22.72	0.50	20.0	0	114%	72	135	22.6	0.751%	30	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

1,2-Dibromoethane (EDB)	22.34	1.0	20.0	0	112%	73	133	22.3	0.0439%	30
Chlorobenzene	19.45	0.50	20.0	0	97.3%	79	119	20.0	2.65%	30
Ethylbenzene	19.95	0.50	20.0	0	99.7%	77	129	20.4	2.14%	30
m,p-Xylene	39.44	0.50	40.0	0	98.6%	82	129	40.3	2.09%	30
o-Xylene	19.88	0.50	20.0	0	99.4%	84	126	20.4	2.84%	30
Bromoform	21.03	0.50	20.0	0	105%	71	129	20.9	0.855%	30
1,1,2,2-Tetrachloroethane	19.28	0.50	20.0	0	96.4%	62	138	18.3	5.21%	30
1,3-Dichlorobenzene	17.69	0.50	20.0	0	88.4%	73	128	17.9	1.17%	30
1,4-Dichlorobenzene	19.20	0.50	20.0	0	96.0%	79	121	19.5	1.65%	30
1,2-Dichlorobenzene	19.16	0.50	20.0	0	95.8%	73	122	19.5	1.84%	30
Surrogate: Dibromofluoromethane	0.964	0.10	1.00	0	96.4%	72	120	0.966	0.218%	30
Surrogate: 1,2-Dichloroethane-d4	0.954	0.10	1.00	0	95.4%	69	126	0.949	0.504%	30
Surrogate: Toluene-d8	0.991	0.10	1.00	0	99.1%	78	137	0.987	0.445%	30

Sample ID: **LCS-13302** Batch ID: **R76031** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **10/4/2013 2:18:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131004B** SeqNo: **1104251**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	1,016	50	1,000	0	102%	72	124	0			

Sample ID: **LCSD-13302** Batch ID: **R76031** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **10/4/2013 2:58:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131004B** SeqNo: **1104252**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	986.9	50	1,000	0	98.7%	72	124	1,020	2.92%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-29672** Batch ID: **29672** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 10:26:16 AM** Prep Date: **10/1/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104660**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	392.4	10	500	0.237	78.4%	85	115	0			S
Cadmium	492.2	5.0	500	0	98.4%	85	115	0			
Chromium	512.5	5.0	500	0	103%	85	115	0			
Lead	491.6	5.0	500	0	98.3%	85	115	0			
Nickel	508.1	25	500	0.593	102%	85	115	0			
Zinc	491.4	25	500	0	98.3%	85	115	0			

Sample ID: **LCSD-29672** Batch ID: **29672** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 10:30:23 AM** Prep Date: **10/1/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104661**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	379.5	10	500	0.237	75.9%	85	115	392	3.32%	20	S
Cadmium	487.5	5.0	500	0	97.5%	85	115	492	0.966%	20	
Chromium	503.2	5.0	500	0	101%	85	115	512	1.83%	20	
Lead	484.2	5.0	500	0	96.8%	85	115	492	1.51%	20	
Nickel	487.0	25	500	0.593	97.3%	85	115	508	4.25%	20	
Zinc	474.7	25	500	0	94.9%	85	115	491	3.46%	20	

Sample ID: **LCS-29680** Batch ID: **29680** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **10/4/2013 9:19:17 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ORGC14_131004C** SeqNo: **1104305**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	507.7	50	500	0	102%	75	126	0			
TPHC Motor Oil	1,187	170	1,000	0	119%	80	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1309455
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29680** Batch ID: **29680** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **10/4/2013 9:49:48 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ORGC14_131004C** SeqNo: **1104306**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	499.6	50	500	0	99.9%	75	126	508	1.62%	30	
TPHC Motor Oil	1,234	170	1,000	0	123%	80	130	1,190	3.89%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1309455

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHd/mo w/Silica gel Cleanup	CAM 5	Dioxins/Furans (Test America)	SVOCs (Calscience)	VOCs
	WP-1	9/26/13	9:00	GW			X	X			
	WP-2		9:30								
	WP-3		10:00						X	X	X
	WP-4		11:10								
	WP-5		11:35								
	WP-6	↓	10:00	↓							
	Field Blank	↓	11:00	↓			↓	↓			

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
Water Samples were Field Filtered & Preserved as per Brenda Howell.	Temperature 3.8 °C
	Received On Ice? Y / N
	Samples Intact? Y / N
VOCs = List 6	Preserved? Y / N
D/F TEQ WHO 2005	Preserved @ NCL? Y N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Brenda Howell	9/26/13 12:23		9/26/13 1223

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Ronald Canady <rcanady@northcoastlabs.com>

Reminder on Dioxin method

2 messages

Ronald Canady <rcanady@northcoastlabs.com> Thu, Sep 26, 2013 at 2:40 PM
To: Brenda Howell <bhowell@shn-engr.com>

Hey again Brenda,

I sent out the Dioxin sample today and told the sub lab to do it by 1613. I didn't give them any TEQ info though. Also, for the VOC's, do you know which one of our lists you need? Trudie may know and I can ask her when she gets back. Thanks again Brenda.

Ron

--
Ron Canady
North Coast Laboratories
5680 West End Rd
Arcata, CA 95521

rcanady@northcoastlabs.com
Phone: 707-822-4649 Fax: 707-822-6831

www.northcoastlabs.com

Brenda Howell <bhowell@shn-engr.com> Thu, Sep 26, 2013 at 2:56 PM
To: Ronald Canady <rcanady@northcoastlabs.com>

Hi Ron,

For the VOCs, we'd like 8260B List 6. Also, all groundwater samples for metals were filtered in the field. Sorry, I forgot to put that on the chain.

I'm not sure about the TEQ. Here is the info I have on methods:

Table 4

Site Constituents of Potential Concern, Laboratory Analytical Methods, Proposed Reporting Limits, and Screening Levels

Blue Lake Business Park, Blue Lake, California

Target Analyses	Analytical	Reporting Limits	Soil Screening	Groundwater

	Method	Soil (ug/g)[1]	Water (ug/L)[2]	Level[3] (ug/g)	Screening Level[4] (ug/L)
Total Petroleum Hydrocarbons as Motor Oil	EPA[5] 8015B	10	170	2,500	100[3]
Total Petroleum Hydrocarbons as Diesel	EPA 8015B	1.0	50	83	100[3]
Total Petroleum Hydrocarbons as Gasoline	EPA 8260B	1.0	50	500	100[3]
Arsenic	EPA 6010B/200.8	2.0	5.0	1.5	10
Cadmium	EPA 6010B/200.8	1.0	5.0	7.4	5
Chromium	EPA 6010B/200.8	2.0	5.0	1,400[6]	50
Nickel	EPA 6010B/200.8	1.0	5.0	150	100
Lead	EPA 6010B/200.8	1.0	5.0	750	15
Zinc	EPA 6010B/200.8	1.0	10	600	5,000[7]
VOCs[8] – Benzene	EPA 8260B	0.005	0.5	0.044	1
VOCs[8] - Toluene	EPA 8260B	0.005	0.5	2.9	150
VOCs[8] - Ethylbenzene	EPA 8260B	0.005	0.5	3.3	1,750
VOCs[8] - Xylenes	EPA 8260B	0.015	1.0	2.3	20
VOCs[8] - MTBE	EPA 8260B	0.02	0.50	.023	13
SVOCs[9] - Naphthalene	EPA 8270C-SIM[10]	0.02	0.20	2.8	NA[11]
Dioxins and furans – 2,3,7,8-TCDD	EPA 1613	$1.0x10^{-6}$	$1.0x10^{-5}$	0.000019	0.00003

1. ug/g: micrograms per gram
2. ug/L: micrograms per liter

3. ESLs: environmental screening levels; screening for environmental concerns at sites with contaminated soil and groundwater, shallow soil screening levels, Table A-2 (RWQCB-SF, 2007), unless otherwise noted

4. A compilation of water quality goals; water quality limits for constituents and parameters (RWQCB-Central Valley, 2008), water quality objective based on California Department of Public Health Primary maximum contaminant levels, unless otherwise noted.

5. EPA: U.S. Environmental Protection Agency

6. RSLs: regional screening levels; EPA, Region IX, Industrial Soil Screening Levels (USEPA, 2009)

7. Water quality objective based on California Department of Public Health Secondary maximum contaminant levels.

8. VOCs: volatile organic compounds

9. SVOCs: semi-volatile organic compounds

10. SIM: selective ion monitoring

11. NA: not applicable, or no limit provided

Let me know if that doesn't answer your question, and I will hunt Erik down.

Thanks,

-Brenda

(707) 441-8855

From: Ronald Canady [mailto:rcanady@northcoastlabs.com]
Sent: Thursday, September 26, 2013 2:41 PM
To: Brenda Howell
Subject: Reminder on Dioxin method

[Quoted text hidden]

NORTH COAST LABORATORIES LTD

Ronald Canady <rcanady@northcoastlabs.com>

Blue Lake Bus Park

2 messages

Erik Nielsen <enielsen@shn-engr.com> Mon, Sep 30, 2013 at 8:31 AM
To: Ronald Canady <rcanady@northcoastlabs.com>
Cc: Roxanne Golich <RGolich@northcoastlabs.com>

Hi Ron,

D/F TEQ according to WHO 2005 is good. And 8270-SIM with:

Parameter

Naphthalene
2-Methylnaphthalene
1-Methylnaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene

Thanks

Erik J. Nielsen, P.G., C.H.G.
SHN Consulting Engineers & Geologists
812 W. Wabash Ave, Eureka, CA 95501-2238
Phone: 707-441-8855 / Fax: 707-441-8877
email: enielsen@shn-engr.com

Roxanne Golich <rgolich@northcoastlabs.com> Mon, Sep 30, 2013 at 8:40 AM
To: Erik Nielsen <enielsen@shn-engr.com>
Cc: Ronald Canady <rcanady@northcoastlabs.com>

So it looks like PAH (PNA) SIM is all you need. Thanks, Roxanne

Roxanne Golich-Moore
North Coast Laboratories
5680 West End Rd
Arcata, CA 95521

rgolich@northcoastlabs.com
Phone: 707-822-4649 Fax: 707-822-6831 Cell: 707-845-2664

www.northcoastlabs.com

[Quoted text hidden]

NORTH COAST LABORATORIES LTD.

Blue Lake Arsenic Testing

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 9:29 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Hi Roxanne, please proceed with amending the lab reports to include arsenic in the metals results.

Lab reports include:

- 1309440-soil
- 1309455-water
- 1310014-soil
- 1310035-soil

Thanks, let me know if you have questions.

Erik

Erik J. Nielsen, P.G., C.H.G.
SHN Consulting Engineers & Geologists
812 W. Wabash Ave, Eureka, CA 95501-2238
Phone: 707-441-8855 / Fax: 707-441-8877
email: enielsen@shn-engr.com

Roxanne Golich <rgolich@northcoastlabs.com> Mon, Nov 18, 2013 at 9:50 AM
To: Erik Nielsen <enielsen@shn-engr.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Will do. If we get the results to you by Wednesday is that OK? Roxanne

North Coast Laboratories will close at noon on Wednesday November 27th for the Thanksgiving holiday. We will resume normal business hours Monday Dec 2nd.

rgolich@northcoastlabs.com

Phone: 707-822-4649 Fax: 707-822-6831 Cell: 707-845-2664

www.northcoastlabs.com

[Quoted text hidden]

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 10:14 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>

Wednesday will work.

Thank you

From: Roxanne Golich [mailto:rgolich@northcoastlabs.com]
Sent: Monday, November 18, 2013 9:50 AM
To: Erik Nielsen
Cc: Mike Foget
Subject: Re: Blue Lake Arsenic Testing

[Quoted text hidden]

Calscience Environmental Laboratories, Inc.

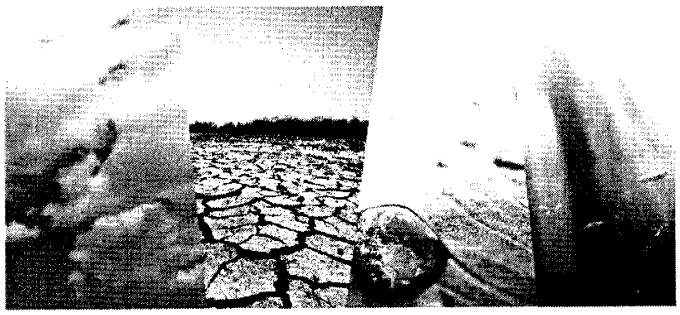
Supplemental Report 1

The original report has been revised/corrected.

CALSCIENCE

WORK ORDER NUMBER: 13-09-1789

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: North Coast Laboratories, Ltd.

Client Project Name: 1309455

Attention: Trudie Blasi
5680 West End Road
Arcata, CA 95521-9202

Approved for release on 10/07/2013 by:
Don Burley
Project Manager

ResultLink ›

Email your PM ›

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: 1309455
Work Order Number: 13-09-1789

Calscience Environmental Laboratories, Inc.

Work Order Narrative

Work Order: 13-09-1789

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 09/27/13. They were assigned to Work Order 13-09-1789.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	North Coast Laboratories, Ltd. 5680 West End Road Arcata, CA 95521-9202	Work Order:	13-09-1789
		Project Name:	1309455
		PO Number:	
		Date/Time Received:	09/27/13 11:00
		Number of Containers:	1
Attn:	Trudie Blasi		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1309455-03H / WP-3	13-09-1789-1	09/26/13 10:00	1	Aqueous

Calscience Environmental Laboratories, Inc.

Analytical Report

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1309455

Date Received: 09/27/13
Work Order: 13-09-1789
Preparation: EPA 3510C
Method: EPA 8270C SIM
Units: ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1309455-03H / WP-3	**13-09-1789-1-A**	**09/26/13 10:00**	**Aqueous**	**GC/MS MM**	**09/28/13**	**10/01/13 13:14**	**130928L17**

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	0.20	1	
2-Methylnaphthalene	ND	0.20	1	
Acenaphthene	ND	0.20	1	
Acenaphthylene	ND	0.20	1	
Anthracene	ND	0.20	1	
Benzo (a) Anthracene	ND	0.20	1	
Benzo (a) Pyrene	ND	0.20	1	
Benzo (b) Fluoranthene	ND	0.20	1	
Benzo (g,h,i) Perylene	ND	0.20	1	
Benzo (k) Fluoranthene	ND	0.20	1	
Chrysene	ND	0.20	1	
Dibenz (a,h) Anthracene	ND	0.20	1	
Fluoranthene	ND	0.20	1	
Fluorene	ND	0.20	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1	
Naphthalene	ND	0.20	1	
Phenanthrene	ND	0.20	1	
Pyrene	ND	0.20	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	56	24-152	
2-Fluorobiphenyl	38	33-144	
2-Fluorophenol	35	31-142	
Nitrobenzene-d5	53	28-139	
p-Terphenyl-d14	34	23-160	
Phenol-d6	27	30-136	2,6

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1309455

Date Received: 09/27/13
Work Order: 13-09-1789
Preparation: EPA 3510C
Method: EPA 8270C SIM
Units: ug/L
Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-430-195**	**N/A**	**Aqueous**	**GC/MS MM**	**09/28/13**	**10/01/13 11:29**	**130928L17**

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	0.20	1	
2-Methylnaphthalene	ND	0.20	1	
Acenaphthene	ND	0.20	1	
Acenaphthylene	ND	0.20	1	
Anthracene	ND	0.20	1	
Benzo (a) Anthracene	ND	0.20	1	
Benzo (a) Pyrene	ND	0.20	1	
Benzo (b) Fluoranthene	ND	0.20	1	
Benzo (g,h,i) Perylene	ND	0.20	1	
Benzo (k) Fluoranthene	ND	0.20	1	
Chrysene	ND	0.20	1	
Dibenz (a,h) Anthracene	ND	0.20	1	
Fluoranthene	ND	0.20	1	
Fluorene	ND	0.20	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1	
Naphthalene	ND	0.20	1	
Phenanthrene	ND	0.20	1	
Pyrene	ND	0.20	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	24-152	
2-Fluorobiphenyl	71	33-144	
2-Fluorophenol	59	31-142	
Nitrobenzene-d5	68	28-139	
p-Terphenyl-d14	65	23-160	
Phenol-d6	65	30-136	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCSD

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1309455

Date Received: 09/27/13
Work Order: 13-09-1789
Preparation: EPA 3510C
Method: EPA 8270C SIM
Page 1 of 1

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-430-195	**Aqueous**	**GC/MS MM**	**09/28/13**	**10/01/13 11:55**	**130928L17**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	20.00	14.63	73	14.64	73	80-120	73-127	0	0-20	ME
2,4-Dichlorophenol	20.00	14.00	70	14.07	70	40-160	20-180	0	0-20	
2-Methylphenol	20.00	10.11	51	10.10	51	40-160	20-180	0	0-20	
2-Nitrophenol	20.00	14.02	70	13.90	69	40-160	20-180	1	0-20	
4-Chloro-3-Methylphenol	20.00	12.93	65	13.27	66	40-160	20-180	3	0-20	
Acenaphthene	20.00	12.58	63	12.54	63	55-121	44-132	0	0-15	
Benzo (a) Pyrene	20.00	13.62	68	13.75	69	17-163	0-187	1	0-20	
Chrysene	20.00	12.68	63	12.73	64	17-168	0-193	0	0-20	
Di-n-Butyl Phthalate	20.00	12.57	63	12.61	63	40-160	20-180	0	0-20	
Dimethyl Phthalate	20.00	12.67	63	12.60	63	40-160	20-180	1	0-20	
Fluoranthene	20.00	12.84	64	12.85	64	26-137	8-156	0	0-20	
Fluorene	20.00	12.62	63	12.68	63	59-121	49-131	0	0-20	
Naphthalene	20.00	13.05	65	13.00	65	21-133	2-152	0	0-20	
Phenanthrene	20.00	12.12	61	12.10	61	54-120	43-131	0	0-20	
Phenol	20.00	10.90	55	10.74	54	40-160	20-180	1	0-20	
Pyrene	20.00	11.43	57	11.37	57	45-129	31-143	1	0-15	

Total number of LCS compounds: 16
Total number of ME compounds: 1
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 13-09-1789

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3510C	449	GC/MS MM	1

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order: 13-09-1789

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Don Burley

From: Ronald Canady [rcanady@northcoastlabs.com]
Sent: Monday, September 30, 2013 8:57 AM
To: Don Burley
Subject: Re: SVOC's for our work order 1309455

Hi Don,

Could you please analyze this sample for PAH's by 8270 SIM. If you need an amended COC let me know. Thanks Don.

Ron Canady

On Fri, Sep 27, 2013 at 4:55 PM, Don Burley <dburley@calscience.com> wrote:

Ron,

Sample is on temporary hold.

Our SVOCs SIM list is a subset of our standard SVOCs list (not as many compounds reported by SIM).

SIM SVOCs = $250

Thanks.

Don

From: Ronald Canady [mailto:rcanady@northcoastlabs.com]
Sent: Friday, September 27, 2013 4:35 PM
To: Don Burley
Subject: SVOC's for our work order 1309455

Hi Don,

I was checking to see if your lab has extracted the water sample that we sent to your lab for delivery today? The (our) work order is 1309455. Our client may need PAH's by 8270 SIM instead of the SVOC's. Could you hold off on the extraction until we get clarification from our client?

NORTH COAST LABORATORIES LTD.

Sub-Contract Chain of Custody Record

Date Shipped: 9/26/2013
PO #: 1309455

Subcontractor: Calscience Enironmental Labs
7440 Lincoln Way
Garden Grove, CA 92841

Attn: SAMPLE RECEIVING 714 895-5494

Send Results to: North Coast Labs
5680 West End Road
Arcata, CA 95521
(707) 822-4649

Attn: Trudie Blasi, tblasi@northcoastlabs.com

13-09-1789

NCL Sample #	Collection Date	Matrix	State Form System	Sampler	Analysis
Sample ID	**Bottle**		**Source**	**Employer**	**Remarks**
1309455-03H	9/26/2013 10:00 am	Groundwater			EPA 8270 - Water
WP-3	1 L amber glass				SVOC's by 8270

	Date/Time		Date/Time
Relinquished by:	9/26/13 1255	**Received by:**	
Relinquished by:		**Received by:**	9/27/13 1100

Special Instructions: Please include NCL Sample #, Sample ID, and QC data on all analytical work; include PO # on invoice.

1789

GSO

WebShip

800-322-5555 www.gso.com

Ship From:
SAMPLE CONTROL
NORTH COAST LABORATORIES
5680 WEST END RD
ARCATA, CA 95521

Ship To:
SAMPLE RECEIVING
CALSCIENCE ENVIRONMENTAL LABS
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 522839455

PDS

ORC

A

GARDEN GROVE

D92841A

16453124

Print Date : 09/26/13 13:03 PM

1 of 1

Send Label To Printer | Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-09-1789

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: North Coast

DATE: 09/27/13

TEMPERATURE: Thermometer ID: SC3 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 4.7 °C - 0.2 °C (CF) = 4.5 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: JH

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: JH

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: JH

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☐	☑	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Aqueous: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** JH

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** _____

Preservative: h: HCL n: HNO_3 **na$_2$**:$Na_2S_2O_3$ **na:** NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure **znna:** $ZnAc_2$+NaOH f: Filtered **Scanned by:** _____

RECEIVED NOV 19 2013

NORTH COAST LABORATORIES LTD.

November 18, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

Order No.: 1310014
Invoice No.: 111976
PO No.:
ELAP No.1247-Expires July 2014

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	TP-01-1.5
01B	TP-01-1.5
02A	TP-01-3.0
02B	TP-01-3.0
03A	TP-02-1.0
03B	TP-02-1.0
04A	TP-02-3.0
04B	TP-02-3.0
05A	TP-04-1.0
05B	TP-04-1.0
06A	TP-04-3.75
06B	TP-04-3.75
07A	TP-03-1.0
07B	TP-03-1.0
08A	TP-03-3.0
08B	TP-03-3.0
09A	TP-05-1.0
09B	TP-05-1.0
10A	TP-05-3.0
10B	TP-05-3.0
11A	TP-06-1.5
11B	TP-06-1.5
12A	TP-06A-1.5
12B	TP-06A-1.5
13A	TP-06-3.5
13B	TP-06-3.5
14A	TP-07-1.5
14B	TP-07-1.5

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr.
Laboratory Director

NORTH COAST LABORATORIES LTD.

November 18, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Order No.: 1310014
Invoice No.: 111976
PO No.:
ELAP No.1247-Expires July 2014

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

SAMPLE IDENTIFICATION

15A	TP-07-3.5
15B	TP-07-3.5
16A	TP-08-1.5
16B	TP-08-1.5
17A	TP-08-3.0
17B	TP-08-3.0
18A	TP-10-1.0
18B	TP-10-1.0
19A	TP-10-3.0
19B	TP-10-3.0
20A	TP-10A-3.0
20B	TP-10A-3.0
21A	TP-09-1.0
21B	TP-09-1.0
21D	TP-09-1.0
22A	TP-09-3.0
22B	TP-09-3.0
23A	TP-11-1.0
23B	TP-11-1.0
24A	TP-11-3.0
24B	TP-11-3.0
25A	TP-12-1.0
25B	TP-12-1.0
26A	TP-12-3.0
26B	TP-12-3.0
27A	TRIP BLANK
28A	TP-13-1.0
28B	TP-13-1.0
29A	TP-13-3.0

NORTH COAST LABORATORIES LTD.

November 18, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Order No.: 1310014
Invoice No.: 111976
PO No.:
ELAP No.1247-Expires July 2014

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

SAMPLE IDENTIFICATION

29B	TP-13-3.0
30A	TP-14-1.0
30B	TP-14-1.0
31A	TP-14-3.0
31B	TP-14-3.0
32A	TP-14A-3.0
32B	TP-14A-3.0
33A	TP-15-1.0
33B	TP-15-1.0
34A	TP-15-3.0
34B	TP-15-3.0
35A	TP-16-1.0
35B	TP-16-1.0
36A	TP-16-3.0
36B	TP-16-3.0

CLIENT: SHN Consulting Engineers and Geologists
Project: 013066 Blue Lake Business Park
Lab Order: 1310014

CASE NARRATIVE

THIS IS AN AMENDED REPORT:
Arsenic was added as per client request.

D3: The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.

M3: The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range.

EPA 5035/8260B and TPH as Gasoline (Soil):
The dilution factor ("DF") pertains to a weight correction for the extraction procedure.

EPA 8260B (Aqueous):
The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery was above the upper acceptance limit for tert-butyl alcohol. The elevated recovery equates to a high bias. There were no detectable levels of the analyte in the sample; therefore, the data were accepted.

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery was below the lower acceptance limit for 1,1,2-trichlorotrifluoroethane. The response of the reporting limit standard was such that the analyte would have been detected even with the low recovery; therefore, the data were accepted.

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1310014

ANALYTICAL REPORT

Client Sample ID: TP-01-1.5
Lab ID: 1310014-01A

Received: 10/1/2013
Collected: 10/1/2013 9:25

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-01-1.5
Lab ID: 1310014-01B

Received: 10/1/2013
Collected: 10/1/2013 9:25

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.0		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	52		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	6.8		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	61		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	51		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-01-3.0
Lab ID: 1310014-02A

Received: 10/1/2013
Collected: 10/1/2013 9:30

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-01-3.0
Lab ID: 1310014-02B

Received: 10/1/2013
Collected: 10/1/2013 9:30

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.2		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	47		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.5		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	58		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	51		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-02-1.0
Lab ID: 1310014-03A

Received: 10/1/2013
Collected: 10/1/2013 9:55

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*4.4*	D3	1.0	mg/kg	1.0	10/3/2013	10/9/2013
TPHC Motor Oil	*47*		10	mg/kg	1.0	10/3/2013	10/9/2013

Client Sample ID: TP-02-1.0
Lab ID: 1310014-03B

Received: 10/1/2013
Collected: 10/1/2013 9:55

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.3		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	45		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.2		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	40		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	42		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-02-3.0
Lab ID: 1310014-04A

Received: 10/1/2013
Collected: 10/1/2013 10:00

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-02-3.0
Lab ID: 1310014-04B

Received: 10/1/2013
Collected: 10/1/2013 10:00

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.6		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	49		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.7		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	56		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	51		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-04-1.0
Lab ID: 1310014-05A

Received: 10/1/2013
Collected: 10/1/2013 10:10

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*1.1*	D3	1.0	mg/kg	1.0	10/3/2013	10/9/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/9/2013

Client Sample ID: TP-04-1.0
Lab ID: 1310014-05B

Received: 10/1/2013
Collected: 10/1/2013 10:10

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.0		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	41		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	4.3		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	40		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	41		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-04-3.75
Lab ID: 1310014-06A

Received: 10/1/2013
Collected: 10/1/2013 10:15

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-04-3.75
Lab ID: 1310014-06B

Received: 10/1/2013
Collected: 10/1/2013 10:15

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.5		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	47		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.6		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	56		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	47		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-03-1.0
Lab ID: 1310014-07A

Received: 10/1/2013
Collected: 10/1/2013 10:30

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-03-1.0
Lab ID: 1310014-07B

Received: 10/1/2013
Collected: 10/1/2013 10:30

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.7		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	54		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.9		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	63		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	50		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-03-3.0
Lab ID: 1310014-08A

Received: 10/1/2013
Collected: 10/1/2013 10:35

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-03-3.0
Lab ID: 1310014-08B

Received: 10/1/2013
Collected: 10/1/2013 10:35

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.3		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	63		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.6		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	76		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	54		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-05-1.0
Lab ID: 1310014-09A

Received: 10/1/2013
Collected: 10/1/2013 11:15

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-05-1.0
Lab ID: 1310014-09B

Received: 10/1/2013
Collected: 10/1/2013 11:15

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.1		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	35		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	4.9		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	38		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	45		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-05-3.0
Lab ID: 1310014-10A

Received: 10/1/2013
Collected: 10/1/2013 11:20

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-05-3.0
Lab ID: 1310014-10B

Received: 10/1/2013
Collected: 10/1/2013 11:20

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.7		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	50		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.9		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	60		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	48		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-06-1.5
Lab ID: 1310014-11A

Received: 10/1/2013
Collected: 10/1/2013 11:30

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*15*	D3	1.0	mg/kg	1.0	10/3/2013	10/9/2013
TPHC Motor Oil	*39*		10	mg/kg	1.0	10/3/2013	10/9/2013

Client Sample ID: TP-06-1.5
Lab ID: 1310014-11B

Received: 10/1/2013
Collected: 10/1/2013 11:30

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.5		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	38		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	6.3		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	38		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	42		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-06A-1.5
Lab ID: 1310014-12A

Received: 10/1/2013
Collected: 10/1/2013 11:33

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*7.7*	D3	1.0	mg/kg	1.0	10/3/2013	10/9/2013
TPHC Motor Oil	*40*		10	mg/kg	1.0	10/3/2013	10/9/2013

Client Sample ID: TP-06A-1.5
Lab ID: 1310014-12B

Received: 10/1/2013
Collected: 10/1/2013 11:33

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.3		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	35		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	4.7		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	36		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	38		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-06-3.5
Lab ID: 1310014-13A

Received: 10/1/2013
Collected: 10/1/2013 11:35

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*15*	D3	1.0	mg/kg	1.0	10/3/2013	10/10/2013
TPHC Motor Oil	*82*		10	mg/kg	1.0	10/3/2013	10/10/2013

Client Sample ID: TP-06-3.5
Lab ID: 1310014-13B

Received: 10/1/2013
Collected: 10/1/2013 11:35

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	2.9		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	35		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.7		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	37		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	42		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-07-1.5
Lab ID: 1310014-14A

Received: 10/1/2013
Collected: 10/1/2013 11:50

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/10/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/10/2013

Client Sample ID: TP-07-1.5
Lab ID: 1310014-14B

Received: 10/1/2013
Collected: 10/1/2013 11:50

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.4		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	44		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.3		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	49		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	46		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-07-3.5
Lab ID: 1310014-15A

Received: 10/1/2013
Collected: 10/1/2013 11:55

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/5/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/3/2013	10/5/2013

Client Sample ID: TP-07-3.5
Lab ID: 1310014-15B

Received: 10/1/2013
Collected: 10/1/2013 11:55

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.7		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	71		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	6.2		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	78		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	55		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-08-1.5
Lab ID: 1310014-16A

Received: 10/1/2013
Collected: 10/1/2013 12:35

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/3/2013	10/10/2013
TPHC Motor Oil	***18***		10	mg/kg	1.0	10/3/2013	10/10/2013

Client Sample ID: TP-08-1.5
Lab ID: 1310014-16B

Received: 10/1/2013
Collected: 10/1/2013 12:35

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.0		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	53		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	9.0		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	58		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	61		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-08-3.0
Lab ID: 1310014-17A

Received: 10/1/2013
Collected: 10/1/2013 12:40

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/7/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/7/2013

Client Sample ID: TP-08-3.0
Lab ID: 1310014-17B

Received: 10/1/2013
Collected: 10/1/2013 12:40

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.3		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	56		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	5.7		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	56		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	50		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-10-1.0
Lab ID: 1310014-18A

Received: 10/1/2013
Collected: 10/1/2013 13:25

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***19***	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***1,000***		250	mg/kg	25	10/7/2013	10/10/2013

Client Sample ID: TP-10-1.0
Lab ID: 1310014-18B

Received: 10/1/2013
Collected: 10/1/2013 13:25

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.1		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	43		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	14		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	49		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	73		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-10-3.0
Lab ID: 1310014-19A
Received: 10/1/2013
Collected: 10/1/2013 13:30

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/7/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/7/2013

Client Sample ID: TP-10-3.0
Lab ID: 1310014-19B
Received: 10/1/2013
Collected: 10/1/2013 13:30

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.8		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	47		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	6.1		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	62		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	51		1.0	mg/kg	1.0	10/2/2013	10/7/2013

Client Sample ID: TP-10A-3.0
Lab ID: 1310014-20A
Received: 10/1/2013
Collected: 10/1/2013 13:35

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

Client Sample ID: TP-10A-3.0
Lab ID: 1310014-20B
Received: 10/1/2013
Collected: 10/1/2013 13:35

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.0		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Chromium	50		2.0	mg/kg	1.0	10/2/2013	10/7/2013
Lead	6.7		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Nickel	61		1.0	mg/kg	1.0	10/2/2013	10/7/2013
Zinc	50		1.0	mg/kg	1.0	10/2/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-09-1.0
Lab ID: 1310014-21A

Received: 10/1/2013
Collected: 10/1/2013 13:40

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

Client Sample ID: TP-09-1.0
Lab ID: 1310014-21B

Received: 10/1/2013
Collected: 10/1/2013 13:40

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.1		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	48		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	6.0		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	58		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	50		1.0	mg/kg	1.0	10/3/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-09-1.0
Lab ID: 1310014-21D

Received: 10/1/2013
Collected: 10/1/2013 13:40

Test Name: EPA 8260B

Reference: EPA 5035/EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.036	mg/Kg	0.90	10/3/2013	10/9/2013
Vinyl chloride	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
Bromomethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Chloroethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Trichlorofluoromethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,1-Dichloroethene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Methylene chloride	ND		0.036	mg/Kg	0.90	10/3/2013	10/9/2013
trans-1,2-Dichloroethene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Methyl tert-butyl ether (MTBE)	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
Tert-butyl alcohol (TBA)	ND		0.18	mg/Kg	0.90	10/3/2013	10/9/2013
Di-isopropyl ether (DIPE)	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,1-Dichloroethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Ethyl tert-butyl ether (ETBE)	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
cis-1,2-Dichloroethene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Chloroform	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Carbon Tetrachloride	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,1,1-Trichloroethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Benzene	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
Tert-amyl methyl ether (TAME)	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,2-Dichloroethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Trichloroethene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,2-Dichloropropane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Bromodichloromethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
cis-1,3-Dichloropropene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Toluene	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
Tetrachloroethene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
trans-1,3-Dichloropropene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,1,2-Trichloroethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Dibromochloromethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,2-Dibromoethane (EDB)	ND		0.036	mg/Kg	0.90	10/3/2013	10/9/2013
Chlorobenzene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Ethylbenzene	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
m,p-Xylene	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
o-Xylene	ND		0.0045	mg/Kg	0.90	10/3/2013	10/9/2013
Bromoform	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,1,2,2-Tetrachloroethane	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,3-Dichlorobenzene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,4-Dichlorobenzene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
1,2-Dichlorobenzene	ND		0.018	mg/Kg	0.90	10/3/2013	10/9/2013
Surrogate: 1,2-Dichloroethane-d4	100		44.9-146	% Rec	0.90	10/3/2013	10/9/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-09-1.0
Lab ID: 1310014-21D
Received: 10/1/2013
Collected: 10/1/2013 13:40

Surrogate: Dibromofluoromethane	101	61.5-123	% Rec	0.90	10/3/2013	10/9/2013
Surrogate: Toluene-d8	102	90.5-108	% Rec	0.90	10/3/2013	10/9/2013

Test Name: TPH as Gasoline
Reference: EPA 5035/EPA 8260B Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND		0.90	mg/kg	0.90	10/3/2013	10/9/2013

Client Sample ID: TP-09-3.0
Lab ID: 1310014-22A
Received: 10/1/2013
Collected: 10/1/2013 13:45

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

Client Sample ID: TP-09-3.0
Lab ID: 1310014-22B
Received: 10/1/2013
Collected: 10/1/2013 13:45

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	6.0		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	54		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	9.4		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	64		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	59		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-11-1.0
Lab ID: 1310014-23A
Received: 10/1/2013
Collected: 10/1/2013 13:55

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***5.7***	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***22***	M3	10	mg/kg	1.0	10/7/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-11-1.0
Lab ID: 1310014-23B
Received: 10/1/2013
Collected: 10/1/2013 13:55

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.8		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	56		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	5.9		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	52		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	46		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-11-3.0
Lab ID: 1310014-24A
Received: 10/1/2013
Collected: 10/1/2013 14:00

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***110***		10	mg/kg	1.0	10/7/2013	10/10/2013

Client Sample ID: TP-11-3.0
Lab ID: 1310014-24B
Received: 10/1/2013
Collected: 10/1/2013 14:00

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.2		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	54		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	7.2		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	64		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	57		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-12-1.0
Lab ID: 1310014-25A
Received: 10/1/2013
Collected: 10/1/2013 14:15

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***19***	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***490***		250	mg/kg	25	10/7/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-12-1.0
Lab ID: 1310014-25B

Received: 10/1/2013
Collected: 10/1/2013 14:15

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.4		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	34		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	19		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	33		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	42		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-12-3.0
Lab ID: 1310014-26A

Received: 10/1/2013
Collected: 10/1/2013 14:20

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

Client Sample ID: TP-12-3.0
Lab ID: 1310014-26B

Received: 10/1/2013
Collected: 10/1/2013 14:20

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.7		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	46		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	6.1		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	55		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	50		1.0	mg/kg	1.0	10/3/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TRIP BLANK
Lab ID: 1310014-27A

Received: 10/1/2013
Collected: 10/1/2013 14:25

Test Name: EPA 8260B **Reference:** EPA 8260B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chloromethane	ND		0.50	µg/L	1.0		10/7/2013
Vinyl chloride	ND		0.50	µg/L	1.0		10/7/2013
Bromomethane	ND		0.50	µg/L	1.0		10/7/2013
Chloroethane	ND		0.50	µg/L	1.0		10/7/2013
Trichlorofluoromethane	ND		0.50	µg/L	1.0		10/7/2013
1,1-Dichloroethene	ND		0.50	µg/L	1.0		10/7/2013
1,1,2-Trichlorotrifluoroethane	ND		0.50	µg/L	1.0		10/7/2013
Methylene chloride	ND		0.50	µg/L	1.0		10/7/2013
trans-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/7/2013
Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	1.0		10/7/2013
Tert-butyl alcohol (TBA)	ND		10	µg/L	1.0		10/7/2013
Di-isopropyl ether (DIPE)	ND		1.0	µg/L	1.0		10/7/2013
1,1-Dichloroethane	ND		0.50	µg/L	1.0		10/7/2013
Ethyl tert-butyl ether (ETBE)	ND		1.0	µg/L	1.0		10/7/2013
cis-1,2-Dichloroethene	ND		0.50	µg/L	1.0		10/7/2013
Chloroform	ND		0.50	µg/L	1.0		10/7/2013
Carbon Tetrachloride	ND		0.50	µg/L	1.0		10/7/2013
1,1,1-Trichloroethane	ND		0.50	µg/L	1.0		10/7/2013
Benzene	ND		0.50	µg/L	1.0		10/7/2013
Tert-amyl methyl ether (TAME)	ND		0.50	µg/L	1.0		10/7/2013
1,2-Dichloroethane	ND		0.50	µg/L	1.0		10/7/2013
Trichloroethene	ND		0.50	µg/L	1.0		10/7/2013
1,2-Dichloropropane	ND		1.0	µg/L	1.0		10/7/2013
Bromodichloromethane	ND		0.50	µg/L	1.0		10/7/2013
cis-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/7/2013
Toluene	ND		0.50	µg/L	1.0		10/7/2013
Tetrachloroethene	ND		0.50	µg/L	1.0		10/7/2013
trans-1,3-Dichloropropene	ND		1.0	µg/L	1.0		10/7/2013
1,1,2-Trichloroethane	ND		0.50	µg/L	1.0		10/7/2013
Dibromochloromethane	ND		0.50	µg/L	1.0		10/7/2013
1,2-Dibromoethane (EDB)	ND		1.0	µg/L	1.0		10/7/2013
Chlorobenzene	ND		0.50	µg/L	1.0		10/7/2013
Ethylbenzene	ND		0.50	µg/L	1.0		10/7/2013
m,p-Xylene	ND		0.50	µg/L	1.0		10/7/2013
o-Xylene	ND		0.50	µg/L	1.0		10/7/2013
Bromoform	ND		0.50	µg/L	1.0		10/7/2013
Isopropylbenzene	ND		0.50	µg/L	1.0		10/7/2013
1,1,2,2-Tetrachloroethane	ND		0.50	µg/L	1.0		10/7/2013
1,3-Dichlorobenzene	ND		0.50	µg/L	1.0		10/7/2013
1,4-Dichlorobenzene	ND		0.50	µg/L	1.0		10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TRIP BLANK
Lab ID: 1310014-27A
Received: 10/1/2013
Collected: 10/1/2013 14:25

1,2-Dichlorobenzene	ND	0.50	µg/L	1.0	10/7/2013
Surrogate: 1,2-Dichloroethane-d4	106	68.8-126	% Rec	1.0	10/7/2013
Surrogate: Dibromofluoromethane	101	72.3-120	% Rec	1.0	10/7/2013
Surrogate: Toluene-d8	95.4	77.6-137	% Rec	1.0	10/7/2013

Test Name: TPH as Gasoline
Reference: LUFT/EPA 8260B Modified

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND		50	µg/L	1.0		10/7/2013

Client Sample ID: TP-13-1.0
Lab ID: 1310014-28A
Received: 10/1/2013
Collected: 10/1/2013 14:30

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***7.4***	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***160***		40	mg/kg	4.0	10/7/2013	10/11/2013

Client Sample ID: TP-13-1.0
Lab ID: 1310014-28B
Received: 10/1/2013
Collected: 10/1/2013 14:30

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.5		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	63		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	23		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	64		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	89		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-13-3.0
Lab ID: 1310014-29A
Received: 10/1/2013
Collected: 10/1/2013 14:35

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-13-3.0
Lab ID: 1310014-29B

Received: 10/1/2013
Collected: 10/1/2013 14:35

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.1		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	59		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	6.6		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	63		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	54		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-14-1.0
Lab ID: 1310014-30A

Received: 10/1/2013
Collected: 10/1/2013 14:45

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*1.1*	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	*23*		10	mg/kg	1.0	10/7/2013	10/10/2013

Client Sample ID: TP-14-1.0
Lab ID: 1310014-30B

Received: 10/1/2013
Collected: 10/1/2013 14:45

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.2		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	93		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	22		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	93		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	78		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-14-3.0
Lab ID: 1310014-31A

Received: 10/1/2013
Collected: 10/1/2013 14:50

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-14-3.0
Lab ID: 1310014-31B

Received: 10/1/2013
Collected: 10/1/2013 14:50

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	6.1		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	61		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	6.8		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	79		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	56		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-14A-3.0
Lab ID: 1310014-32A

Received: 10/1/2013
Collected: 10/1/2013 14:55

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/10/2013

Client Sample ID: TP-14A-3.0
Lab ID: 1310014-32B

Received: 10/1/2013
Collected: 10/1/2013 14:55

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.7		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	65		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	7.5		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	75		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	55		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-15-1.0
Lab ID: 1310014-33A

Received: 10/1/2013
Collected: 10/1/2013 15:00

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***36***	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***1,300***		500	mg/kg	50	10/7/2013	10/11/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-15-1.0
Lab ID: 1310014-33B

Received: 10/1/2013
Collected: 10/1/2013 15:00

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.8		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	46		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	93		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	61		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	110		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-15-3.0
Lab ID: 1310014-34A

Received: 10/1/2013
Collected: 10/1/2013 15:05

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***22***		10	mg/kg	1.0	10/7/2013	10/10/2013

Client Sample ID: TP-15-3.0
Lab ID: 1310014-34B

Received: 10/1/2013
Collected: 10/1/2013 15:05

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.7		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	43		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	8.9		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	52		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	61		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-16-1.0
Lab ID: 1310014-35A

Received: 10/1/2013
Collected: 10/1/2013 15:10

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***4.1***	D3	1.0	mg/kg	1.0	10/7/2013	10/10/2013
TPHC Motor Oil	***120***		10	mg/kg	1.0	10/7/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-16-1.0
Lab ID: 1310014-35B

Received: 10/1/2013
Collected: 10/1/2013 15:10

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.7		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	46		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	15		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	46		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	54		1.0	mg/kg	1.0	10/3/2013	10/7/2013

Client Sample ID: TP-16-3.0
Lab ID: 1310014-36A

Received: 10/1/2013
Collected: 10/1/2013 15:15

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/7/2013	10/8/2013

Client Sample ID: TP-16-3.0
Lab ID: 1310014-36B

Received: 10/1/2013
Collected: 10/1/2013 15:15

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.9		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Cadmium	ND		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Chromium	40		2.0	mg/kg	1.0	10/3/2013	10/7/2013
Lead	5.6		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Nickel	47		1.0	mg/kg	1.0	10/3/2013	10/7/2013
Zinc	50		1.0	mg/kg	1.0	10/3/2013	10/7/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-29714** Batch ID: **29714** Test Code: **5035_8260S** Units: **mg/Kg** Analysis Date **10/9/2013 5:20:00 PM** Prep Date: **10/3/2013**

Client ID: Run ID: **ORGCMS2_131009B** SeqNo: **1104953**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.040									
Vinyl chloride	ND	0.0050									
Bromomethane	ND	0.020									
Chloroethane	ND	0.020									
Trichlorofluoromethane	ND	0.020									
1,1-Dichloroethene	ND	0.020									
Methylene chloride	ND	0.040									
trans-1,2-Dichloroethene	ND	0.020									
Methyl tert-butyl ether (MTBE)	ND	0.0050									
Tert-butyl alcohol (TBA)	ND	0.20									
Di-isopropyl ether (DIPE)	ND	0.020									
1,1-Dichloroethane	ND	0.020									
Ethyl tert-butyl ether (ETBE)	ND	0.020									
cis-1,2-Dichloroethene	ND	0.020									
Chloroform	ND	0.020									
Carbon Tetrachloride	ND	0.020									
1,1,1-Trichloroethane	ND	0.020									
Benzene	ND	0.0050									
Tert-amyl methyl ether (TAME)	ND	0.020									
1,2-Dichloroethane	ND	0.020									
Trichloroethene	ND	0.020									
1,2-Dichloropropane	ND	0.020									
Bromodichloromethane	ND	0.020									
cis-1,3-Dichloropropene	ND	0.020									
Toluene	ND	0.0050									
Tetrachloroethene	ND	0.020									
trans-1,3-Dichloropropene	ND	0.020									
1,1,2-Trichloroethane	ND	0.020									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Dibromochloromethane	ND	0.020							
1,2-Dibromoethane (EDB)	ND	0.040							
Chlorobenzene	ND	0.020							
Ethylbenzene	ND	0.0050							
m,p-Xylene	ND	0.0050							
o-Xylene	ND	0.0050							
Bromoform	ND	0.020							
1,1,2,2-Tetrachloroethane	ND	0.020							
1,3-Dichlorobenzene	ND	0.020							
1,4-Dichlorobenzene	ND	0.020							
1,2-Dichlorobenzene	ND	0.020							
Surrogate: 1,2-Dichloroethane-d4	0.976	0.0020	1.00	0	97.6%	45	146	0	
Surrogate: Dibromofluoromethane	1.01	0.0020	1.00	0	101%	62	123	0	
Surrogate: Toluene-d8	1.01	0.0020	1.00	0	101%	91	108	0	

Sample ID: **MB-29714** Batch ID: **29714** Test Code: **5035_GASS-** Units: **mg/kg** Analysis Date **10/9/2013 5:20:00 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGCMS2_131009A** SeqNo: **1104945**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	ND	1.0									

Sample ID: **MB-29683** Batch ID: **29683** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 11:53:25 AM** Prep Date: **10/2/2013**
Client ID: Run ID: **INICP2_131007A** SeqNo: **1104450**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	2.0									
Lead	ND	1.0									
Nickel	ND	1.0									
Zinc	ND	1.0									

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29689** Batch ID: **29689** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 1:06:23 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **INICP2_131007A** SeqNo: **1104481**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	2.0									
Lead	ND	1.0									
Nickel	ND	1.0									
Zinc	ND	1.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB 100713** Batch ID: **R76054** Test Code: **8260EW** Units: **µg/L** Analysis Date **10/7/2013 1:45:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131007A** SeqNo: **1104529**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Bromomethane	ND	0.50									
Chloroethane	ND	0.50									
Trichlorofluoromethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,1,2-Trichlorotrifluoroethane	ND	0.50									
Methylene chloride	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Methyl tert-butyl ether (MTBE)	ND	0.50									
Tert-butyl alcohol (TBA)	ND	10									
Di-isopropyl ether (DIPE)	ND	1.0									
1,1-Dichloroethane	ND	0.50									
Ethyl tert-butyl ether (ETBE)	ND	1.0									
cis-1,2-Dichloroethene	ND	0.50									
Chloroform	ND	0.50									
Carbon Tetrachloride	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
Benzene	ND	0.50									
Tert-amyl methyl ether (TAME)	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Trichloroethene	ND	0.50									
1,2-Dichloropropane	ND	1.0									
Bromodichloromethane	ND	0.50									
cis-1,3-Dichloropropene	ND	1.0									
Toluene	ND	0.50									
Tetrachloroethene	ND	0.50									
trans-1,3-Dichloropropene	ND	1.0									
1,1,2-Trichloroethane	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Dibromochloromethane	ND	0.50						
1,2-Dibromoethane (EDB)	ND	1.0						
Chlorobenzene	ND	0.50						
Ethylbenzene	ND	0.50						
m,p-Xylene	ND	0.50						
o-Xylene	ND	0.50						
Bromoform	ND	0.50						
Isopropylbenzene	ND	0.50						
1,1,2,2-Tetrachloroethane	ND	0.50						
1,3-Dichlorobenzene	ND	0.50						
1,4-Dichlorobenzene	ND	0.50						
1,2-Dichlorobenzene	ND	0.50						
Surrogate: Dibromofluoromethane	0.992	0.10	1.00	0	99.2%	72	120	0
Surrogate: 1,2-Dichloroethane-d4	1.05	0.10	1.00	0	105%	69	126	0
Surrogate: Toluene-d8	0.956	0.10	1.00	0	95.6%	78	137	0

Sample ID: **MB 100713** Batch ID: **R76058** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **10/7/2013 1:45:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131007B** SeqNo: **1104569**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	ND	50									

Sample ID: **MB-29687** Batch ID: **29687** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/9/2013 7:58:39 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGC14_131009A** SeqNo: **1105056**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29705** Batch ID: **29705** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/10/2013 3:03:24 AM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131009A** SeqNo: **1105070**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Sample ID: **MB-29686** Batch ID: **29686** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/5/2013 5:49:54 AM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGC14_131004D** SeqNo: **1104327**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Sample ID: **MB-29704** Batch ID: **29704** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/7/2013 8:01:10 PM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131007A** SeqNo: **1104550**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **1310014-15BMS** Batch ID: **29683** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 12:41:34 PM** Prep Date: **10/2/2013**
Client ID: **TP-07-3.5** Run ID: **INICP2_131007A** SeqNo: **1104470**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	95.06	2.0	100	4.70	90.4%	70	130	0			
Cadmium	92.92	1.0	100	0.124	92.8%	70	130	0			
Chromium	162.3	2.0	100	71.4	90.9%	70	130	0			
Lead	83.64	1.0	100	6.23	77.4%	70	130	0			
Nickel	161.2	1.0	100	77.9	83.2%	70	130	0			
Zinc	136.9	1.0	100	54.8	82.1%	70	130	0			

Sample ID: **1310014-15BMSD** Batch ID: **29683** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 12:44:07 PM** Prep Date: **10/2/2013**
Client ID: **TP-07-3.5** Run ID: **INICP2_131007A** SeqNo: **1104471**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	94.36	2.0	100	4.70	89.7%	70	130	95.1	0.736%	20	
Cadmium	92.54	1.0	100	0.124	92.4%	70	130	92.9	0.414%	20	
Chromium	163.2	2.0	100	71.4	91.8%	70	130	162	0.562%	20	
Lead	83.13	1.0	100	6.23	76.9%	70	130	83.6	0.610%	20	
Nickel	163.3	1.0	100	77.9	85.3%	70	130	161	1.28%	20	
Zinc	138.1	1.0	100	54.8	83.2%	70	130	137	0.838%	20	

Sample ID: **1310014-01AMS** Batch ID: **29687** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/9/2013 9:30:24 PM** Prep Date: **10/3/2013**
Client ID: **TP-01-1.5** Run ID: **ORGC14_131009A** SeqNo: **1105059**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.938	1.0	10.0	0	99.4%	78	115	0			
TPHC Motor Oil	21.31	10	20.0	0	107%	79	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **1310014-17AMS** Batch ID: **29705** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/10/2013 4:33:42 AM** Prep Date: **10/7/2013**
Client ID: **TP-08-3.0** Run ID: **ORGC14_131009A** SeqNo: **1105073**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.003	1.0	10.0	0	90.0%	78	115	0			
TPHC Motor Oil	22.90	10	20.0	0	114%	79	130	0			

Sample ID: **1310014-01AMS** Batch ID: **29686** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/5/2013 7:18:47 AM** Prep Date: **10/3/2013**
Client ID: **TP-01-1.5** Run ID: **ORGC14_131004D** SeqNo: **1104331**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.873	1.0	10.0	0	98.7%	83	122	0			
TPHC Motor Oil	23.24	10	20.0	0.980	111%	78	131	0			

Sample ID: **1310014-17AMS** Batch ID: **29704** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/7/2013 9:33:14 PM** Prep Date: **10/7/2013**
Client ID: **TP-08-3.0** Run ID: **ORGC14_131007A** SeqNo: **1104553**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.113	1.0	10.0	0	91.1%	83	122	0			
TPHC Motor Oil	24.05	10	20.0	1.58	112%	78	131	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-29714** Batch ID: **29714** Test Code: **5035_8260S** Units: **mg/Kg** Analysis Date **10/9/2013 2:48:00 PM** Prep Date: **10/3/2013**

Client ID: Run ID: **ORGCMS2_131009B** SeqNo: **1104951**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	0.04680	0.040	0.0500	0	93.6%	20	205	0			
Vinyl chloride	0.04480	0.0050	0.0500	0	89.6%	20	163	0			
Bromomethane	0.04850	0.020	0.0500	0	97.0%	20	163	0			
Chloroethane	0.03700	0.020	0.0500	0	74.0%	20	193	0			
Trichlorofluoromethane	0.03220	0.020	0.0500	0	64.4%	20	178	0			
1,1-Dichloroethene	0.04380	0.020	0.0500	0	87.6%	20	184	0			
Methylene chloride	0.04480	0.040	0.0500	0	89.6%	27	178	0			
trans-1,2-Dichloroethene	0.04520	0.020	0.0500	0	90.4%	53	154	0			
Methyl tert-butyl ether (MTBE)	0.04770	0.0050	0.0500	0	95.4%	51	162	0			
Tert-butyl alcohol (TBA)	1.106	0.20	1.00	0	111%	27	179	0			
Di-isopropyl ether (DIPE)	0.04860	0.020	0.0500	0	97.2%	71	136	0			
1,1-Dichloroethane	0.04550	0.020	0.0500	0	91.0%	62	143	0			
Ethyl tert-butyl ether (ETBE)	0.04720	0.020	0.0500	0	94.4%	68	164	0			
cis-1,2-Dichloroethene	0.04560	0.020	0.0500	0	91.2%	72	134	0			
Chloroform	0.04580	0.020	0.0500	0	91.6%	72	132	0			
Carbon Tetrachloride	0.04570	0.020	0.0500	0	91.4%	64	152	0			
1,1,1-Trichloroethane	0.04680	0.020	0.0500	0	93.6%	70	141	0			
Benzene	0.04600	0.0050	0.0500	0	92.0%	77	124	0			
Tert-amyl methyl ether (TAME)	0.04880	0.020	0.0500	0	97.6%	63	165	0			
1,2-Dichloroethane	0.04600	0.020	0.0500	0	92.0%	64	139	0			
Trichloroethene	0.04700	0.020	0.0500	0	94.0%	66	137	0			
1,2-Dichloropropane	0.04700	0.020	0.0500	0	94.0%	63	135	0			
Bromodichloromethane	0.04580	0.020	0.0500	0	91.6%	64	140	0			
cis-1,3-Dichloropropene	0.04800	0.020	0.0500	0	96.0%	58	146	0			
Toluene	0.04610	0.0050	0.0500	0	92.2%	75	131	0			
Tetrachloroethene	0.04700	0.020	0.0500	0	94.0%	62	152	0			
trans-1,3-Dichloropropene	0.04730	0.020	0.0500	0	94.6%	59	147	0			
1,1,2-Trichloroethane	0.04430	0.020	0.0500	0	88.6%	67	131	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Dibromochloromethane	0.04810	0.020	0.0500	0	96.2%	66	136	0
1,2-Dibromoethane (EDB)	0.04960	0.040	0.0500	0	99.2%	63	140	0
Chlorobenzene	0.04700	0.020	0.0500	0	94.0%	68	135	0
Ethylbenzene	0.04920	0.0050	0.0500	0	98.4%	70	135	0
m,p-Xylene	0.09930	0.0050	0.100	0	99.3%	71	136	0
o-Xylene	0.04850	0.0050	0.0500	0	97.0%	75	132	0
Bromoform	0.04640	0.020	0.0500	0	92.8%	20	181	0
1,1,2,2-Tetrachloroethane	0.04760	0.020	0.0500	0	95.2%	57	138	0
1,3-Dichlorobenzene	0.04530	0.020	0.0500	0	90.6%	47	164	0
1,4-Dichlorobenzene	0.04510	0.020	0.0500	0	90.2%	45	160	0
1,2-Dichlorobenzene	0.04490	0.020	0.0500	0	89.8%	57	148	0
Surrogate: 1,2-Dichloroethane-d4	1.03	0.0020	1.00	0	103%	89	119	0
Surrogate: Dibromofluoromethane	0.946	0.0020	1.00	0	94.6%	87	124	0
Surrogate: Toluene-d8	0.981	0.0020	1.00	0	98.1%	83	112	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29714** Batch ID: **29714** Test Code: **5035_8260S** Units: **mg/Kg** Analysis Date **10/9/2013 3:18:00 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGCMS2_131009B** SeqNo: **1104952**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	0.04370	0.040	0.0500	0	87.4%	20	205	0.0468	6.85%	30	
Vinyl chloride	0.04120	0.0050	0.0500	0	82.4%	20	163	0.0448	8.37%	30	
Bromomethane	0.05070	0.020	0.0500	0	101%	20	163	0.0485	4.44%	30	
Chloroethane	0.03320	0.020	0.0500	0	66.4%	20	193	0.0370	10.8%	30	
Trichlorofluoromethane	0.02810	0.020	0.0500	0	56.2%	20	178	0.0322	13.6%	30	
1,1-Dichloroethene	0.04700	0.020	0.0500	0	94.0%	20	184	0.0438	7.05%	30	
Methylene chloride	0.04920	0.040	0.0500	0	98.4%	27	178	0.0448	9.36%	30	
trans-1,2-Dichloroethene	0.04950	0.020	0.0500	0	99.0%	53	154	0.0452	9.08%	30	
Methyl tert-butyl ether (MTBE)	0.05400	0.0050	0.0500	0	108%	51	162	0.0477	12.4%	30	
Tert-butyl alcohol (TBA)	1.218	0.20	1.00	0	122%	27	179	1.11	9.72%	30	
Di-isopropyl ether (DIPE)	0.05400	0.020	0.0500	0	108%	71	136	0.0486	10.5%	30	
1,1-Dichloroethane	0.04910	0.020	0.0500	0	98.2%	62	143	0.0455	7.61%	30	
Ethyl tert-butyl ether (ETBE)	0.05350	0.020	0.0500	0	107%	68	164	0.0472	12.5%	30	
cis-1,2-Dichloroethene	0.05060	0.020	0.0500	0	101%	72	134	0.0456	10.4%	30	
Chloroform	0.05030	0.020	0.0500	0	101%	72	132	0.0458	9.37%	30	
Carbon Tetrachloride	0.05000	0.020	0.0500	0	100%	64	152	0.0457	8.99%	30	
1,1,1-Trichloroethane	0.05040	0.020	0.0500	0	101%	70	141	0.0468	7.41%	30	
Benzene	0.05070	0.0050	0.0500	0	101%	77	124	0.0460	9.72%	30	
Tert-amyl methyl ether (TAME)	0.05570	0.020	0.0500	0	111%	63	165	0.0488	13.2%	30	
1,2-Dichloroethane	0.05220	0.020	0.0500	0	104%	64	139	0.0460	12.6%	30	
Trichloroethene	0.05030	0.020	0.0500	0	101%	66	137	0.0470	6.78%	30	
1,2-Dichloropropane	0.05150	0.020	0.0500	0	103%	63	135	0.0470	9.14%	30	
Bromodichloromethane	0.05100	0.020	0.0500	0	102%	64	140	0.0458	10.7%	30	
cis-1,3-Dichloropropene	0.05420	0.020	0.0500	0	108%	58	146	0.0480	12.1%	30	
Toluene	0.05000	0.0050	0.0500	0	100%	75	131	0.0461	8.12%	30	
Tetrachloroethene	0.05070	0.020	0.0500	0	101%	62	152	0.0470	7.57%	30	
trans-1,3-Dichloropropene	0.05460	0.020	0.0500	0	109%	59	147	0.0473	14.3%	30	
1,1,2-Trichloroethane	0.05120	0.020	0.0500	0	102%	67	131	0.0443	14.5%	30	
Dibromochloromethane	0.05440	0.020	0.0500	0	109%	66	136	0.0481	12.3%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

1,2-Dibromoethane (EDB)	0.05670	0.040	0.0500	0	113%	63	140	0.0496	13.4%	30
Chlorobenzene	0.05140	0.020	0.0500	0	103%	68	135	0.0470	8.94%	30
Ethylbenzene	0.05280	0.0050	0.0500	0	106%	70	135	0.0492	7.06%	30
m,p-Xylene	0.1058	0.0050	0.100	0	106%	71	136	0.0993	6.34%	30
o-Xylene	0.05230	0.0050	0.0500	0	105%	75	132	0.0485	7.54%	30
Bromoform	0.05390	0.020	0.0500	0	108%	20	181	0.0464	15.0%	30
1,1,2,2-Tetrachloroethane	0.05490	0.020	0.0500	0	110%	57	138	0.0476	14.2%	30
1,3-Dichlorobenzene	0.04820	0.020	0.0500	0	96.4%	47	164	0.0453	6.20%	30
1,4-Dichlorobenzene	0.04730	0.020	0.0500	0	94.6%	45	160	0.0451	4.76%	30
1,2-Dichlorobenzene	0.04860	0.020	0.0500	0	97.2%	57	148	0.0449	7.91%	30
Surrogate: 1,2-Dichloroethane-d4	1.06	0.0020	1.00	0	107%	89	119	1.03	2.93%	30
Surrogate: Dibromofluoromethane	0.967	0.0020	1.00	0	96.7%	87	124	0.946	2.18%	30
Surrogate: Toluene-d8	0.993	0.0020	1.00	0	99.3%	83	112	0.981	1.21%	30

Sample ID: **LCSG-29714** Batch ID: **29714** Test Code: **5035_GASS-** Units: **mg/kg** Analysis Date **10/9/2013 3:49:00 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGCMS2_131009A** SeqNo: **1104943**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	4.792	1.0	5.00	0	95.8%	75	129	0			

Sample ID: **LCSDG-29714** Batch ID: **29714** Test Code: **5035_GASS-** Units: **mg/kg** Analysis Date **10/9/2013 4:19:00 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGCMS2_131009A** SeqNo: **1104944**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	5.473	1.0	5.00	0	109%	75	129	4.79	13.3%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-29683** Batch ID: **29683** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 11:55:21 AM** Prep Date: **10/2/2013**
Client ID: Run ID: **INICP2_131007A** SeqNo: **1104451**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.67	2.0	100	0	99.7%	85	115	0			
Cadmium	99.51	1.0	100	0.0336	99.5%	85	115	0			
Chromium	103.6	2.0	100	0	104%	85	115	0			
Lead	97.58	1.0	100	0	97.6%	85	115	0			
Nickel	99.14	1.0	100	0	99.1%	85	115	0			
Zinc	96.58	1.0	100	0	96.6%	85	115	0			

Sample ID: **LCSD-29683** Batch ID: **29683** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 11:57:20 AM** Prep Date: **10/2/2013**
Client ID: Run ID: **INICP2_131007A** SeqNo: **1104452**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.33	2.0	100	0	99.3%	85	115	99.7	0.344%	20	
Cadmium	99.67	1.0	100	0.0336	99.6%	85	115	99.5	0.163%	20	
Chromium	103.5	2.0	100	0	104%	85	115	104	0.0193%	20	
Lead	98.37	1.0	100	0	98.4%	85	115	97.6	0.805%	20	
Nickel	99.27	1.0	100	0	99.3%	85	115	99.1	0.125%	20	
Zinc	97.23	1.0	100	0	97.2%	85	115	96.6	0.673%	20	

Sample ID: **LCS-29689** Batch ID: **29689** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 1:08:17 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **INICP2_131007A** SeqNo: **1104482**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	97.76	2.0	100	0	97.8%	85	115	0			
Cadmium	99.06	1.0	100	0.0317	99.0%	85	115	0			
Chromium	103.0	2.0	100	0	103%	85	115	0			
Lead	96.88	1.0	100	0	96.9%	85	115	0			
Nickel	97.81	1.0	100	0	97.8%	85	115	0			
Zinc	96.04	1.0	100	0	96.0%	85	115	0			

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29689** Batch ID: **29689** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/7/2013 1:11:17 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **INICP2_131007A** SeqNo: **1104483**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.37	2.0	100	0	99.4%	85	115	97.8	1.64%	20	
Cadmium	99.85	1.0	100	0.0317	99.8%	85	115	99.1	0.794%	20	
Chromium	103.6	2.0	100	0	104%	85	115	103	0.605%	20	
Lead	97.50	1.0	100	0	97.5%	85	115	96.9	0.640%	20	
Nickel	98.85	1.0	100	0	98.8%	85	115	97.8	1.06%	20	
Zinc	96.81	1.0	100	0	96.8%	85	115	96.0	0.800%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-13303** Batch ID: **R76054** Test Code: **8260EW** Units: **µg/L** Analysis Date **10/7/2013 11:24:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS2_131007A** SeqNo: **1104527**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	20.72	0.50	20.0	0	104%	44	131	0			
Vinyl chloride	19.44	0.50	20.0	0	97.2%	51	133	0			
Bromomethane	13.06	0.50	20.0	0	65.3%	42	142	0			
Chloroethane	19.77	0.50	20.0	0	98.9%	55	132	0			
Trichlorofluoromethane	17.08	0.50	20.0	0	85.4%	47	138	0			
1,1-Dichloroethene	16.05	0.50	20.0	0	80.3%	55	126	0			
1,1,2-Trichlorotrifluoroethane	15.38	0.50	20.0	0	76.9%	80	120	0			S
Methylene chloride	19.17	0.50	20.0	0	95.9%	53	128	0			
trans-1,2-Dichloroethene	20.73	0.50	20.0	0	104%	53	135	0			
Methyl tert-butyl ether (MTBE)	24.20	0.50	20.0	0	121%	60	136	0			
Tert-butyl alcohol (TBA)	862.2	10	400	0	216%	38	186	0			S
Di-isopropyl ether (DIPE)	21.36	1.0	20.0	0	107%	58	137	0			
1,1-Dichloroethane	20.51	0.50	20.0	0	103%	62	118	0			
Ethyl tert-butyl ether (ETBE)	21.92	1.0	20.0	0	110%	65	132	0			
cis-1,2-Dichloroethene	21.41	0.50	20.0	0	107%	72	119	0			
Chloroform	18.94	0.50	20.0	0	94.7%	65	126	0			
Carbon Tetrachloride	21.19	0.50	20.0	0	106%	58	140	0			
1,1,1-Trichloroethane	20.46	0.50	20.0	0	102%	61	132	0			
Benzene	20.15	0.50	20.0	0	101%	74	118	0			
Tert-amyl methyl ether (TAME)	21.90	0.50	20.0	0	109%	71	132	0			
1,2-Dichloroethane	21.05	0.50	20.0	0	105%	68	128	0			
Trichloroethene	20.88	0.50	20.0	0	104%	75	113	0			
1,2-Dichloropropane	21.55	1.0	20.0	0	108%	63	126	0			
Bromodichloromethane	19.59	0.50	20.0	0	98.0%	69	124	0			
cis-1,3-Dichloropropene	21.30	1.0	20.0	0	106%	63	133	0			
Toluene	18.84	0.50	20.0	0	94.2%	76	133	0			
Tetrachloroethene	17.55	0.50	20.0	0	87.7%	60	129	0			
trans-1,3-Dichloropropene	20.70	1.0	20.0	0	104%	66	139	0			
1,1,2-Trichloroethane	18.05	0.50	20.0	0	90.2%	64	132	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike

Dibromochloromethane	25.50	0.50	20.0	0	127%	72	135	0
1,2-Dibromoethane (EDB)	24.38	1.0	20.0	0	122%	73	133	0
Chlorobenzene	21.77	0.50	20.0	0	109%	79	119	0
Ethylbenzene	21.76	0.50	20.0	0	109%	77	129	0
m,p-Xylene	43.63	0.50	40.0	0	109%	82	129	0
o-Xylene	22.01	0.50	20.0	0	110%	84	126	0
Bromoform	23.49	0.50	20.0	0	117%	71	129	0
Isopropylbenzene	21.00	0.50	20.0	0	105%	73	141	0
1,1,2,2-Tetrachloroethane	19.36	0.50	20.0	0	96.8%	62	138	0
1,3-Dichlorobenzene	19.70	0.50	20.0	0	98.5%	73	128	0
1,4-Dichlorobenzene	21.24	0.50	20.0	0	106%	79	121	0
1,2-Dichlorobenzene	20.80	0.50	20.0	0	104%	73	122	0
Surrogate: Dibromofluoromethane	1.00	0.10	1.00	0	100%	72	120	0
Surrogate: 1,2-Dichloroethane-d4	1.05	0.10	1.00	0	105%	69	126	0
Surrogate: Toluene-d8	0.939	0.10	1.00	0	93.9%	78	137	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-13303** Batch ID: **R76054** Test Code: **8260EW** Units: **µg/L** Analysis Date **10/7/2013 11:52:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS2_131007A** SeqNo: **1104528**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	20.72	0.50	20.0	0	104%	44	131	20.7	0.000483%	30	
Vinyl chloride	19.33	0.50	20.0	0	96.6%	51	133	19.4	0.597%	30	
Bromomethane	13.23	0.50	20.0	0	66.2%	42	142	13.1	1.30%	30	
Chloroethane	18.10	0.50	20.0	0	90.5%	55	132	19.8	8.84%	30	
Trichlorofluoromethane	16.55	0.50	20.0	0	82.8%	47	138	17.1	3.17%	30	
1,1-Dichloroethene	15.51	0.50	20.0	0	77.6%	55	126	16.0	3.44%	30	
1,1,2-Trichlorotrifluoroethane	14.94	0.50	20.0	0	74.7%	80	120	15.4	2.92%	30	S
Methylene chloride	18.52	0.50	20.0	0	92.6%	53	128	19.2	3.44%	30	
trans-1,2-Dichloroethene	20.10	0.50	20.0	0	100%	53	135	20.7	3.13%	30	
Methyl tert-butyl ether (MTBE)	24.60	0.50	20.0	0	123%	60	136	24.2	1.63%	30	
Tert-butyl alcohol (TBA)	829.3	10	400	0	207%	38	186	862	3.89%	30	S
Di-isopropyl ether (DIPE)	20.87	1.0	20.0	0	104%	58	137	21.4	2.33%	30	
1,1-Dichloroethane	19.64	0.50	20.0	0	98.2%	62	118	20.5	4.31%	30	
Ethyl tert-butyl ether (ETBE)	21.63	1.0	20.0	0	108%	65	132	21.9	1.35%	30	
cis-1,2-Dichloroethene	20.45	0.50	20.0	0	102%	72	119	21.4	4.59%	30	
Chloroform	18.25	0.50	20.0	0	91.2%	65	126	18.9	3.73%	30	
Carbon Tetrachloride	20.27	0.50	20.0	0	101%	58	140	21.2	4.47%	30	
1,1,1-Trichloroethane	19.66	0.50	20.0	0	98.3%	61	132	20.5	4.00%	30	
Benzene	19.72	0.50	20.0	0	98.6%	74	118	20.2	2.14%	30	
Tert-amyl methyl ether (TAME)	22.37	0.50	20.0	0	112%	71	132	21.9	2.16%	30	
1,2-Dichloroethane	20.92	0.50	20.0	0	105%	68	128	21.0	0.627%	30	
Trichloroethene	20.19	0.50	20.0	0	101%	75	113	20.9	3.33%	30	
1,2-Dichloropropane	21.37	1.0	20.0	0	107%	63	126	21.6	0.828%	30	
Bromodichloromethane	19.48	0.50	20.0	0	97.4%	69	124	19.6	0.578%	30	
cis-1,3-Dichloropropene	21.22	1.0	20.0	0	106%	63	133	21.3	0.379%	30	
Toluene	18.42	0.50	20.0	0	92.1%	76	133	18.8	2.25%	30	
Tetrachloroethene	17.69	0.50	20.0	0	88.4%	60	129	17.6	0.797%	30	
trans-1,3-Dichloropropene	21.00	1.0	20.0	0	105%	66	139	20.7	1.43%	30	
1,1,2-Trichloroethane	17.69	0.50	20.0	0	88.5%	64	132	18.0	1.99%	30	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Dibromochloromethane	25.97	0.50	20.0	0	130%	72	135	25.5	1.83%	30
1,2-Dibromoethane (EDB)	24.64	1.0	20.0	0	123%	73	133	24.4	1.04%	30
Chlorobenzene	21.72	0.50	20.0	0	109%	79	119	21.8	0.231%	30
Ethylbenzene	21.31	0.50	20.0	0	107%	77	129	21.8	2.09%	30
m,p-Xylene	42.69	0.50	40.0	0	107%	82	129	43.6	2.17%	30
o-Xylene	21.39	0.50	20.0	0	107%	84	126	22.0	2.85%	30
Bromoform	24.31	0.50	20.0	0	122%	71	129	23.5	3.42%	30
Isopropylbenzene	20.53	0.50	20.0	0	103%	73	141	21.0	2.27%	30
1,1,2,2-Tetrachloroethane	19.74	0.50	20.0	0	98.7%	62	138	19.4	1.90%	30
1,3-Dichlorobenzene	19.49	0.50	20.0	0	97.4%	73	128	19.7	1.07%	30
1,4-Dichlorobenzene	20.73	0.50	20.0	0	104%	79	121	21.2	2.42%	30
1,2-Dichlorobenzene	20.35	0.50	20.0	0	102%	73	122	20.8	2.20%	30
Surrogate: Dibromofluoromethane	0.987	0.10	1.00	0	98.7%	72	120	1.00	1.60%	30
Surrogate: 1,2-Dichloroethane-d4	1.05	0.10	1.00	0	105%	69	126	1.05	0.161%	30
Surrogate: Toluene-d8	0.938	0.10	1.00	0	93.8%	78	137	0.939	0.0639%	30

Sample ID: **LCS-13304** Batch ID: **R76058** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **10/7/2013 12:20:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131007B** SeqNo: **1104567**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	926.9	50	1,000	0	92.7%	72	124	0			

Sample ID: **LCSD-13304** Batch ID: **R76058** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **10/7/2013 12:48:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS2_131007B** SeqNo: **1104568**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	908.1	50	1,000	0	90.8%	72	124	927	2.05%	20	

Sample ID: **LCS-29687** Batch ID: **29687** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/9/2013 8:29:20 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGC14_131009A** SeqNo: **1105057**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.482	1.0	10.0	0	94.8%	78	115	0			
TPHC Motor Oil	20.72	10	20.0	0	104%	79	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29687** Batch ID: **29687** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/9/2013 8:59:52 PM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGC14_131009A** SeqNo: **1105058**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.327	1.0	10.0	0	93.3%	78	115	9.48	1.65%	30	
TPHC Motor Oil	19.95	10	20.0	0	99.7%	79	130	20.7	3.79%	30	

Sample ID: **LCS-29705** Batch ID: **29705** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/10/2013 3:33:31 AM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131009A** SeqNo: **1105071**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.49	1.0	10.0	0	105%	78	115	0			
TPHC Motor Oil	22.23	10	20.0	0	111%	79	130	0			

Sample ID: **LCSD-29705** Batch ID: **29705** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/10/2013 4:03:36 AM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131009A** SeqNo: **1105072**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.442	1.0	10.0	0	94.4%	78	115	10.5	10.5%	30	
TPHC Motor Oil	20.83	10	20.0	0	104%	79	130	22.2	6.50%	30	

Sample ID: **LCS-29686** Batch ID: **29686** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/5/2013 6:19:31 AM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGC14_131004D** SeqNo: **1104328**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.739	1.0	10.0	0	97.4%	83	122	0			
TPHC Motor Oil	22.27	10	20.0	0	111%	78	131	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310014
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29686** Batch ID: **29686** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/5/2013 6:49:13 AM** Prep Date: **10/3/2013**
Client ID: Run ID: **ORGC14_131004D** SeqNo: **1104329**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.798	1.0	10.0	0	98.0%	83	122	9.74	0.598%	30	
TPHC Motor Oil	22.41	10	20.0	0	112%	78	131	22.3	0.588%	30	

Sample ID: **LCS-29704** Batch ID: **29704** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/7/2013 8:31:57 PM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131007A** SeqNo: **1104551**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.634	1.0	10.0	0	96.3%	83	122	0			
TPHC Motor Oil	21.94	10	20.0	0	110%	78	131	0			

Sample ID: **LCSD-29704** Batch ID: **29704** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/7/2013 9:02:36 PM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131007A** SeqNo: **1104552**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.814	1.0	10.0	0	98.1%	83	122	9.63	1.85%	30	
TPHC Motor Oil	22.58	10	20.0	0	113%	78	131	21.9	2.87%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 131014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 9550
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-engr.com
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

PROJECT INFORMATION
Project Number: 0130606
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica gel Cleanup	ANALYSIS: CAM 5
	TP-01-1.5	10/1/13	09:25	S			X	X
	TP-01-3.0		09:30	S			X	X
	TP-02-1.0		09:55	S			X	X
	TP-02-3.0		10:00	S			X	X
	TP-04-1.0		10:10	S			X	X
	TP-04-3.75		10:15	S			X	X
	TP-03-1.0		10:30	S			X	X
	TP-03-3.0		10:35	S			X	X
	TP-05-1.0		11:15	S			X	X
	TP-05-3.0		11:20	S			X	X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1310014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-Engr.com
Sampler (Sign & Print): Erik Nielsen

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica gel cleanup	CAM 5	Dissolved Metals (Test America)	VOCs	SVOCs (CAL Science)
	TP-06-1.5	10/1/13	11:30	S			X	X			
	TP-06A-1.5		11:33	S			X	X			
	TP-06-3.5		11:35	S			X	X			
	TP-07-1.5		11:50	S			X	X			
	TP-07-3.5		11:55	S			X	X			
	TP-08-1.5		12:35	S			X	X			
	TP-08-3.0		12:40	S			X	X			
	TP-10-1.0		13:25	S			X	X			
	TP-10-3.0		13:30	S			X	X			
	TP-10A-3.0		13:35	S			X	X			

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 13C0014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@shn-engr.com
Sampler (Sign & Print): Erik Nielsen

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/Mo w/ Silica gel Cleanup	CAM 5	SVOCs	VOCs
	TP-09-1.0	10/1/13	13:40	S			X	X		X
	TP-09-3.0		13:45	S			X	X		
	TP-11-1.0		13:55	S			X	X		
	TP-11-3.0		14:00	S			X	X		
	TP-12-1.0		14:15	S			X	X		
	TP-12-3.0		14:20	S			X	X		
	TRIP Blank		14:25	W						X
	TP-13-1.0		14:30	S			X	X		
	TP-13-3.0		14:35	S			X	X		

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2-4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen	10/1/13/1600		10/1/13 1600

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 31004

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka
Phone: 707-441-8855
Copies of Report to:
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

TAT: ☑ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☑ Final Report PDF ☐ FAX By:

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/ Silica Gel Cleanup	ANALYSIS: CAM 5
	TP-14-1.0	10/1/13	14:45	S	a	2	X	X
	TP-14-3.0		14:50		a	2	X	X
	TP-14A-3.0		14:55		a	2	X	X
	TP-15-1.0		15:00		a	2	X	X
	TP-15-3.0		15:05		a	2	X	X
	TP-16-1.0		15:10		a	2	X	X
	TP-16-3.0	↓	16:15	↓	a	2	X	X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1600

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

Blue Lake Arsenic Testing

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 9:29 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Hi Roxanne, please proceed with amending the lab reports to include arsenic in the metals results.

Lab reports include:

- 1309440-soil
- 1309455-water
- 1310014-soil
- 1310035-soil

Thanks, let me know if you have questions.

Erik

Erik J. Nielsen, P.G., C.H.G.
SHN Consulting Engineers & Geologists
812 W. Wabash Ave, Eureka, CA 95501-2238
Phone: 707-441-8855 / Fax: 707-441-8877
email: enielsen@shn-engr.com

Roxanne Golich <rgolich@northcoastlabs.com> Mon, Nov 18, 2013 at 9:50 AM
To: Erik Nielsen <enielsen@shn-engr.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Will do. If we get the results to you by Wednesday is that OK? Roxanne

North Coast Laboratories will close at noon on Wednesday November 27th for the Thanksgiving holiday. We will resume normal business hours Monday Dec 2nd.

rgolich@northcoastlabs.com

Phone: 707-822-4649 Fax: 707-822-6831 Cell: 707-845-2664

www.northcoastlabs.com

[Quoted text hidden]

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 10:14 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>

Wednesday will work.

Thank you

From: Roxanne Golich [mailto:rgolich@northcoastlabs.com]
Sent: Monday, November 18, 2013 9:50 AM
To: Erik Nielsen
Cc: Mike Foget
Subject: Re: Blue Lake Arsenic Testing

[Quoted text hidden]

NORTH COAST LABORATORIES LTD.

RECEIVED NOV 19 2013

November 18, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

Order No.: 1310035
Invoice No.: 111993
PO No.:
ELAP No.1247-Expires July 2014

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	TP-17-1.0
01B	TP-17-1.0
02A	TP-17-3.0
02B	TP-17-3.0
03A	TP-18-8.0
03B	TP-18-8.0
04A	TP-18-10.0
04B	TP-18-10.0
05A	Equipment Blank
05C	Equipment Blank(DISSOLVED)
06A	TP-19-4.5
06B	TP-19-4.5
07A	TP-19-6.0
07B	TP-19-6.0
08A	TP-20-1.0
08B	TP-20-1.0
09A	TP-20-3.0
09B	TP-20-3.0
10A	TP-20A-1.0
10B	TP-20A-1.0

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

North Coast Laboratories, Ltd. **Date:** 18-Nov-2013

CLIENT: SHN Consulting Engineers and Geologists
Project: 013066 Blue Lake Business Park
Lab Order: 1310035

CASE NARRATIVE

THIS IS AN AMENDED REPORT:
Arsenic was added as per client request.

Samples for dissolved metals analysis must be filtered within 15 minutes of collection. Therefore, any samples that were filtered by the laboratory were filtered past the official holding time. Prep Comments for FILMET, Sample 1310035-05C: The prep HoldTime was exceeded by 5 days.

D3: The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.

TPH @ Diesel/Motor Oil with and without Silica Gel Cleanup:
The motor oil recovery for the matrix spike (MS) was outside of acceptance limits. The recovery was within acceptance limits in the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) indicating that the high recovery may be due to matrix effects.

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1310035

ANALYTICAL REPORT

Client Sample ID: TP-17-1.0
Lab ID: 1310035-01A

Received: 10/2/2013
Collected: 10/2/2013 10:25

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	*1.3*	D3	1.0	mg/kg	1.0	10/8/2013	10/11/2013
TPHC Motor Oil	*27*		10	mg/kg	1.0	10/8/2013	10/11/2013

Client Sample ID: TP-17-1.0
Lab ID: 1310035-01B

Received: 10/2/2013
Collected: 10/2/2013 10:25

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.1		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	45		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	8.0		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	51		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	52		1.0	mg/kg	1.0	10/8/2013	10/10/2013

Client Sample ID: TP-17-3.0
Lab ID: 1310035-02A

Received: 10/2/2013
Collected: 10/2/2013 10:30

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/8/2013	10/9/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/8/2013	10/9/2013

Client Sample ID: TP-17-3.0
Lab ID: 1310035-02B

Received: 10/2/2013
Collected: 10/2/2013 10:30

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.3		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	46		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	5.9		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	59		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	46		1.0	mg/kg	1.0	10/8/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-18-8.0
Lab ID: 1310035-03A

Received: 10/2/2013
Collected: 10/2/2013 11:10

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***5.4***	D3	1.0	mg/kg	1.0	10/8/2013	10/11/2013
TPHC Motor Oil	***110***		10	mg/kg	1.0	10/8/2013	10/11/2013

Client Sample ID: TP-18-8.0
Lab ID: 1310035-03B

Received: 10/2/2013
Collected: 10/2/2013 11:10

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.7		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	52		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	20		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	59		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	68		1.0	mg/kg	1.0	10/8/2013	10/10/2013

Client Sample ID: TP-18-10.0
Lab ID: 1310035-04A

Received: 10/2/2013
Collected: 10/2/2013 11:15

Test Name: TPH passed through Silica Gel Column **Reference:** EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/8/2013	10/11/2013
TPHC Motor Oil	***28***		10	mg/kg	1.0	10/8/2013	10/11/2013

Client Sample ID: TP-18-10.0
Lab ID: 1310035-04B

Received: 10/2/2013
Collected: 10/2/2013 11:15

Test Name: EPA 6010B **Reference:** EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	6.1		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	57		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	8.6		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	62		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	53		1.0	mg/kg	1.0	10/8/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: Equipment Blank
Lab ID: 1310035-05A
Received: 10/2/2013
Collected: 10/2/2013 11:20

Test Name: TPH as Diesel/Motor Oil
Reference: LUFT/EPA 3511/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		50	µg/L	1.0	10/7/2013	10/8/2013
TPHC Motor Oil	ND		170	µg/L	1.0	10/7/2013	10/8/2013

Client Sample ID: Equipment Blank(DISSOLVED)
Lab ID: 1310035-05C
Received: 10/2/2013
Collected: 10/2/2013 11:20

Test Name: ICP-MS Metals
Reference: EPA 200.8 Rev 5.4 (1994)

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Cadmium	ND		1.0	µg/L	1.0	10/2/2013	10/8/2013
Chromium	ND		1.0	µg/L	1.0	10/2/2013	10/8/2013
Lead	ND		1.0	µg/L	1.0	10/2/2013	10/8/2013
Nickel	ND		5.0	µg/L	1.0	10/2/2013	10/8/2013
Zinc	ND		5.0	µg/L	1.0	10/2/2013	10/8/2013

Client Sample ID: TP-19-4.5
Lab ID: 1310035-06A
Received: 10/2/2013
Collected: 10/2/2013 11:40

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	***1.0***	D3	1.0	mg/kg	1.0	10/8/2013	10/11/2013
TPHC Motor Oil	***20***		10	mg/kg	1.0	10/8/2013	10/11/2013

Client Sample ID: TP-19-4.5
Lab ID: 1310035-06B
Received: 10/2/2013
Collected: 10/2/2013 11:40

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	4.5		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	54		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	15		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	62		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	71		1.0	mg/kg	1.0	10/8/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

ANALYTICAL REPORT

Client Sample ID: TP-19-6.0
Lab ID: 1310035-07A
Received: 10/2/2013
Collected: 10/2/2013 11:45

Test Name: TPH passed through Silica Gel Column
Reference: EPA 3550/3630/8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/8/2013	10/11/2013
TPHC Motor Oil	***32***		10	mg/kg	1.0	10/8/2013	10/11/2013

Client Sample ID: TP-19-6.0
Lab ID: 1310035-07B
Received: 10/2/2013
Collected: 10/2/2013 11:45

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.9		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	48		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	11		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	49		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	61		1.0	mg/kg	1.0	10/8/2013	10/10/2013

Client Sample ID: TP-20-1.0
Lab ID: 1310035-08A
Received: 10/2/2013
Collected: 10/2/2013 12:15

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/8/2013	10/9/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/8/2013	10/9/2013

Client Sample ID: TP-20-1.0
Lab ID: 1310035-08B
Received: 10/2/2013
Collected: 10/2/2013 12:15

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.0		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	52		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	5.4		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	59		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	48		1.0	mg/kg	1.0	10/8/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 18-Nov-2013
WorkOrder: 1310035

ANALYTICAL REPORT

Client Sample ID: TP-20-3.0
Lab ID: 1310035-09A
Received: 10/2/2013
Collected: 10/2/2013 12:25

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/8/2013	10/9/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/8/2013	10/9/2013

Client Sample ID: TP-20-3.0
Lab ID: 1310035-09B
Received: 10/2/2013
Collected: 10/2/2013 12:25

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	5.0		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	41		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	6.0		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	52		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	46		1.0	mg/kg	1.0	10/8/2013	10/10/2013

Client Sample ID: TP-20A-1.0
Lab ID: 1310035-10A
Received: 10/2/2013
Collected: 10/2/2013 12:20

Test Name: TPH as Diesel/Motor Oil
Reference: EPA 3550/EPA 8015B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND		1.0	mg/kg	1.0	10/8/2013	10/9/2013
TPHC Motor Oil	ND		10	mg/kg	1.0	10/8/2013	10/9/2013

Client Sample ID: TP-20A-1.0
Lab ID: 1310035-10B
Received: 10/2/2013
Collected: 10/2/2013 12:20

Test Name: EPA 6010B
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Arsenic	3.9		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Cadmium	ND		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Chromium	46		2.0	mg/kg	1.0	10/8/2013	10/10/2013
Lead	5.3		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Nickel	57		1.0	mg/kg	1.0	10/8/2013	10/10/2013
Zinc	48		1.0	mg/kg	1.0	10/8/2013	10/10/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-29710** Batch ID: **29710** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/10/2013 12:55:40 P** Prep Date: **10/8/2013**
Client ID: Run ID: **INICP2_131010A** SeqNo: **1105034**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	2.0									
Lead	ND	1.0									
Nickel	ND	1.0									
Zinc	ND	1.0									

Sample ID: **MB-29706** Batch ID: **29706** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 12:47:25 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104693**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	1.0									
Chromium	ND	1.0									
Lead	ND	1.0									
Nickel	ND	5.0									
Zinc	ND	5.0									

Sample ID: **MB-29712** Batch ID: **29712** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/11/2013 4:01:18 PM** Prep Date: **10/8/2013**
Client ID: Run ID: **ORGC14_131011A** SeqNo: **1105268**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29711** Batch ID: **29711** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/8/2013 11:22:21 PM** Prep Date: **10/8/2013**
Client ID: Run ID: **ORGC14_131008A** SeqNo: **1104847**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	1.0									
TPHC Motor Oil	ND	10									

Sample ID: **MB-29700** Batch ID: **29700** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **10/8/2013 10:10:43 AM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131007B** SeqNo: **1104796**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
TPHC Motor Oil	ND	170									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **1310035-05CMS** Batch ID: **29706** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 1:03:49 PM** Prep Date: **10/2/2013**
Client ID: **Equipment Blank(DISSOLVED)** Run ID: **ICPMS2_131008A** SeqNo: **1104697**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	1,012	5.0	1,000	0	101%	70	130	0			
Chromium	992.3	5.0	1,000	0.435	99.2%	70	130	0			
Lead	992.2	5.0	1,000	0	99.2%	70	130	0			
Nickel	985.0	25	1,000	2.71	98.2%	70	130	0			
Zinc	974.8	25	1,000	1.83	97.3%	70	130	0			

Sample ID: **1310035-05CMSD** Batch ID: **29706** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 1:07:55 PM** Prep Date: **10/2/2013**
Client ID: **Equipment Blank(DISSOLVED)** Run ID: **ICPMS2_131008A** SeqNo: **1104698**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	967.0	5.0	1,000	0	96.7%	70	130	1,010	4.56%	20	
Chromium	964.8	5.0	1,000	0.435	96.4%	70	130	992	2.80%	20	
Lead	940.7	5.0	1,000	0	94.1%	70	130	992	5.33%	20	
Nickel	947.3	25	1,000	2.71	94.5%	70	130	985	3.89%	20	
Zinc	961.4	25	1,000	1.83	96.0%	70	130	975	1.38%	20	

Sample ID: **1310035-01AMS** Batch ID: **29712** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/11/2013 5:31:35 PM** Prep Date: **10/8/2013**
Client ID: **TP-17-1.0** Run ID: **ORGC14_131011A** SeqNo: **1105271**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.92	1.0	10.0	1.28	96.4%	78	115	0			
TPHC Motor Oil	54.98	10	20.0	26.6	142%	79	130	0			S

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **1310035-01AMS** Batch ID: **29711** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/9/2013 12:53:13 AM** Prep Date: **10/8/2013**
Client ID: **TP-17-1.0** Run ID: **ORGC14_131008A** SeqNo: **1104850**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.626	1.0	10.0	0	96.3%	83	122	0			
TPHC Motor Oil	52.53	10	20.0	0	263%	78	131	0			S

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-29710** Batch ID: **29710** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/10/2013 12:57:51 P** Prep Date: **10/8/2013**
Client ID: Run ID: **INICP2_131010A** SeqNo: **1105035**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.56	2.0	100	0	99.6%	85	115	0			
Cadmium	96.43	1.0	100	0	96.4%	85	115	0			
Chromium	103.3	2.0	100	0	103%	85	115	0			
Lead	95.33	1.0	100	0	95.3%	85	115	0			
Nickel	97.31	1.0	100	0	97.3%	85	115	0			
Zinc	94.11	1.0	100	0	94.1%	85	115	0			

Sample ID: **LCSD-29710** Batch ID: **29710** Test Code: **6ICPS** Units: **mg/kg** Analysis Date **10/10/2013 1:00:12 PM** Prep Date: **10/8/2013**
Client ID: Run ID: **INICP2_131010A** SeqNo: **1105036**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	98.66	2.0	100	0	98.7%	85	115	99.6	0.911%	20	
Cadmium	96.20	1.0	100	0	96.2%	85	115	96.4	0.240%	20	
Chromium	103.1	2.0	100	0	103%	85	115	103	0.211%	20	
Lead	95.32	1.0	100	0	95.3%	85	115	95.3	0.0132%	20	
Nickel	97.65	1.0	100	0	97.6%	85	115	97.3	0.340%	20	
Zinc	94.12	1.0	100	0	94.1%	85	115	94.1	0.00839%	20	

Sample ID: **LCS-29706** Batch ID: **29706** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 12:51:31 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104694**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	513.4	5.0	500	0	103%	85	115	0			
Chromium	508.6	5.0	500	0	102%	85	115	0			
Lead	491.7	5.0	500	0	98.3%	85	115	0			
Nickel	512.3	25	500	0.629	102%	85	115	0			
Zinc	499.3	25	500	0	99.9%	85	115	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29706** Batch ID: **29706** Test Code: **ICPMSDW** Units: **µg/L** Analysis Date **10/8/2013 12:55:37 PM** Prep Date: **10/2/2013**
Client ID: Run ID: **ICPMS2_131008A** SeqNo: **1104695**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	507.1	5.0	500	0	101%	85	115	513	1.24%	20	
Chromium	524.6	5.0	500	0	105%	85	115	509	3.11%	20	
Lead	490.7	5.0	500	0	98.1%	85	115	492	0.206%	20	
Nickel	513.9	25	500	0.629	103%	85	115	512	0.306%	20	
Zinc	495.1	25	500	0	99.0%	85	115	499	0.849%	20	

Sample ID: **LCS-29712** Batch ID: **29712** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/11/2013 4:31:26 PM** Prep Date: **10/8/2013**
Client ID: Run ID: **ORGC14_131011A** SeqNo: **1105269**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.26	1.0	10.0	0	103%	78	115	0			
TPHC Motor Oil	22.04	10	20.0	0	110%	79	130	0			

Sample ID: **LCSD-29712** Batch ID: **29712** Test Code: **SGTPDMS** Units: **mg/kg** Analysis Date **10/11/2013 5:01:31 PM** Prep Date: **10/8/2013**
Client ID: Run ID: **ORGC14_131011A** SeqNo: **1105270**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	9.656	1.0	10.0	0	96.6%	78	115	10.3	6.07%	30	
TPHC Motor Oil	21.16	10	20.0	0	106%	79	130	22.0	4.08%	30	

Sample ID: **LCS-29711** Batch ID: **29711** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/8/2013 11:52:41 PM** Prep Date: **10/8/2013**
Client ID: Run ID: **ORGC14_131008A** SeqNo: **1104848**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.05	1.0	10.0	0	100%	83	122	0			
TPHC Motor Oil	20.37	10	20.0	0	102%	78	131	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310035
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-29711** Batch ID: **29711** Test Code: **TPHDMS** Units: **mg/kg** Analysis Date **10/9/2013 12:22:59 AM** Prep Date: **10/8/2013**
Client ID: Run ID: **ORGC14_131008A** SeqNo: **1104849**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.97	1.0	10.0	0	110%	83	122	10.0	8.81%	30	
TPHC Motor Oil	21.15	10	20.0	0	106%	78	131	20.4	3.74%	30	

Sample ID: **LCS-29700** Batch ID: **29700** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **10/8/2013 10:40:53 AM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131007B** SeqNo: **1104797**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	490.1	50	500	0	98.0%	75	126	0			
TPHC Motor Oil	1,122	170	1,000	0	112%	80	130	0			

Sample ID: **LCSD-29700** Batch ID: **29700** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **10/8/2013 11:11:08 AM** Prep Date: **10/7/2013**
Client ID: Run ID: **ORGC14_131007B** SeqNo: **1104798**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	489.5	50	500	0	97.9%	75	126	490	0.121%	30	
TPHC Motor Oil	1,131	170	1,000	0	113%	80	130	1,120	0.791%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1310035

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPH(D)/MO w/Silica gel cleanup	ANALYSIS: CAM 5
	TP-17-1.0	10/2/13	10:25	S			X	X
	TP-17-3.0		10:30	S				
	TP-18-8.0		11:10	S				
	TP-18-10.0		11:15	S				
	Equipment Blank		11:20	GW				
	TP-19-4.5		11:40	S				
	TP-19-6.0		11:45	S				
	TP-20-1.0		12:15	S				
	TP-20-3.0		12:25	S				
	TP-20A-1.0		12:20	S				

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
CAM 5 water needs to be filtered	Temperature 4, 4 °C
* preserved as per Brenda Howell. RL	Received On Ice? (Y)/N
	Samples Intact? (Y)/N
	Preserved? Y/(N)
	Preserved @ NCL?
	Y/N/(NA)

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Brenda Howell	10/2/13 12:99		10/2/13 1250

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

Blue Lake Arsenic Testing

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 9:29 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Hi Roxanne, please proceed with amending the lab reports to include arsenic in the metals results.

Lab reports include:

- 1309440-soil
- 1309455-water
- 1310014-soil
- 1310035-soil

Thanks, let me know if you have questions.

Erik

Erik J. Nielsen, P.G., C.H.G.
SHN Consulting Engineers & Geologists
812 W. Wabash Ave, Eureka, CA 95501-2238
Phone: 707-441-8855 / Fax: 707-441-8877
email: enielsen@shn-engr.com

Roxanne Golich <rgolich@northcoastlabs.com> Mon, Nov 18, 2013 at 9:50 AM
To: Erik Nielsen <enielsen@shn-engr.com>
Cc: Mike Foget <mfoget@shn-engr.com>

Will do. If we get the results to you by Wednesday is that OK? Roxanne

North Coast Laboratories will close at noon on Wednesday November 27th for the Thanksgiving holiday. We will resume normal business hours Monday Dec 2nd.

rgolich@northcoastlabs.com

Phone: 707-822-4649 Fax: 707-822-6831 Cell: 707-845-2664

www.northcoastlabs.com

[Quoted text hidden]

Erik Nielsen <enielsen@shn-engr.com> Mon, Nov 18, 2013 at 10:14 AM
To: Roxanne Golich <rgolich@northcoastlabs.com>

Wednesday will work.

Thank you

From: Roxanne Golich [mailto:rgolich@northcoastlabs.com]
Sent: Monday, November 18, 2013 9:50 AM
To: Erik Nielsen
Cc: Mike Foget
Subject: Re: Blue Lake Arsenic Testing

[Quoted text hidden]

RECEIVED NOV - 1 2013

NORTH COAST LABORATORIES LTD.

October 30, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

Order No.: 1310409
Invoice No.: 112234
PO No.:
ELAP No.1247-Expires July 2014

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	TP-03-3.0
02A	TP-07-3.5
03A	TP-14-1.0
04A	TP-15-1.0

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

North Coast Laboratories, Ltd.

Date: 30-Oct-2013

CLIENT: SHN Consulting Engineers and Geologists
Project: 013066 Blue Lake Business Park
Lab Order: 1310409

CASE NARRATIVE

The samples were extracted following the method described in Title 22, CCR 66261.126, Appendix II (CAM WET).

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 30-Oct-2013
WorkOrder: 1310409

ANALYTICAL REPORT

Client Sample ID: TP-03-3.0
Lab ID: 1310409-01A
Received: 10/1/2013
Collected: 10/1/2013 10:35

Test Name: EPA 6010B STLC
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chromium	ND		200	µg/L	10	10/28/2013	10/30/2013

Client Sample ID: TP-07-3.5
Lab ID: 1310409-02A
Received: 10/1/2013
Collected: 10/1/2013 11:55

Test Name: EPA 6010B STLC
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chromium	ND		200	µg/L	10	10/28/2013	10/30/2013

Client Sample ID: TP-14-1.0
Lab ID: 1310409-03A
Received: 10/1/2013
Collected: 10/1/2013 14:45

Test Name: EPA 6010B STLC
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chromium	ND		200	µg/L	10	10/28/2013	10/30/2013

Client Sample ID: TP-15-1.0
Lab ID: 1310409-04A
Received: 10/1/2013
Collected: 10/1/2013 15:00

Test Name: EPA 6010B STLC
Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Lead	4,100		100	µg/L	10	10/28/2013	10/30/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

North Coast Laboratories, Ltd.

Date: 10/30/2013

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310409
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29791** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 13:49:46** Prep Date: **10/28/2013**
Client ID: Run ID: **INICP2_131030A** SeqNo: **1107336**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	200									
Lead	ND	100									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310409
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **1310409-02AMS** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 14:06:15** Prep Date: **10/28/2013**
Client ID: **TP-07-3.5** Run ID: **INICP2_131030A** SeqNo: **1107342**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1,893	200	2,000	137	87.8%	70	130	0			

Sample ID: **1310409-02AMSD** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 14:08:55** Prep Date: **10/28/2013**
Client ID: **TP-07-3.5** Run ID: **INICP2_131030A** SeqNo: **1107343**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1,913	200	2,000	137	88.8%	70	130	1,890	1.06%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310409
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-29791** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 13:52:56** Prep Date: **10/28/2013**
Client ID: Run ID: **INICP2_131030A** SeqNo: **1107337**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1,753	200	2,000	0	87.7%	85	115	0			
Lead	1,745	100	2,000	0	87.3%	85	115	0			

Sample ID: **LCSD-29791** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 13:55:31** Prep Date: **10/28/2013**
Client ID: Run ID: **INICP2_131030A** SeqNo: **1107338**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1,748	200	2,000	0	87.4%	85	115	1,750	0.271%	20	
Lead	1,748	100	2,000	0	87.4%	85	115	1,740	0.149%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.

5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

i310409

LABORATORY NUMBER: ~~1310014~~

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 9550
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-engr.com
Sampler (Sign & Print): [signature] / Erik Nielsen

PROJECT INFORMATION

Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	TPHD/MO w/Silica gel Cleanup	CAM 5
	TP-01-1.5	10/1/13	09:25	S	X	X
	TP-01-3.0	|	09:30	S	X	X
	TP-02-1.0	|	09:55	S	X	X
	TP-02-3.0	|	10:00	S	X	X
	TP-04-1.0	|	10:10	S	X	X
	TP-04-3.75	|	10:15	S	X	X
	TP-03-1.0	|	10:30	S	X	X
	TP-03-3.0	|	10:35	S	X	X
	TP-05-1.0	|	11:15	S	X	X
	TP-05-3.0	|	11:20	S	X	X

SPECIAL INSTRUCTIONS: STLC for Pb

SAMPLE CONDITION
Temperature 4.8 °C
2.4
Received On Ice? Ⓨ/N
Samples Intact? Ⓨ/N
Preserved? Ⓨ/N
Preserved @ NCL? Y/Ⓝ/NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature] / Erik Nielsen	10-1-13/1600	[signature] 10/1/13 1605	

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

1310 409

LABORATORY NUMBER: 1310019

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-Engr.com
Sampler (Sign & Print): Erik Nielsen

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silicagel cleanup	CAM 5	Dissolved Metals (Test America)	VOCs	SVOCs (CAL Science)
	TP-06-1.5	10/1/13	11:30	S			X	X			
	TP-06A-1.5		11:33	S			X	X			
	TP-06-3.5		11:35	S			X	X			
	TP-07-1.5		11:50	S			X	X			
	TP-07-3.5		11:55	S			X	X			
	TP-08-1.5		12:35	S			X	X			
	TP-08-3.0		12:40	S			X	X			
	TP-10-1.0		13:25	S			X	X			
	TP-10-3.0		13:30	S			X	X			
	TP-10A-3.0		13:35	S			X	X			

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

1310469

LABORATORY NUMBER: 1310014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka
Phone: 707-441-8855
Copies of Report to:
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

TAT: ☑ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☑ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHD/MO w/ Silica Gel Clean up; CAM 5
	TP-14-1.0	10/1/13	14:45	S	2	X	X
	TP-14-3.0		14:50		X	X	X
	TP-14A-3.0		14:55		X	X	X
	TP-15-1.0		15:00		X	X	X
	TP-15-3.0		15:05		X	X	X
	TP-16-1.0		15:10		X	X	X
	TP-16-3.0	↓	16:15	↓	X	X	X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1600

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

RECEIVED NOV - 1 2013

NORTH COAST LABORATORIES LTD.

October 30, 2013

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Attn: Erik Nielsen

RE: 013066 Blue Lake Business Park

Order No.: 1310408
Invoice No.: 112233
PO No.:
ELAP No.1247-Expires July 2014

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	WP-3 @ 12

ND = Not Detected at the Reporting Limit
Limit = Reporting Limit
Flag = Explanation in Case Narrative
All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

North Coast Laboratories, Ltd.

Date: 30-Oct-2013

CLIENT: SHN Consulting Engineers and Geologists
Project: 013066 Blue Lake Business Park
Lab Order: 1310408

CASE NARRATIVE

The sample was extracted following the method described in Title 22, CCR 66261.126, Appendix II (CAM WET).

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 30-Oct-2013
WorkOrder: 1310408

ANALYTICAL REPORT

Client Sample ID: WP-3 @ 12
Lab ID: 1310408-01A

Received: 9/25/2013
Collected: 9/25/2013 13:30

Test Name: EPA 6010B STLC

Reference: EPA 6010B

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Chromium	ND		200	µg/L	10	10/28/2013	10/30/2013

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

North Coast Laboratories, Ltd.

Date: 10/30/2013

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310408
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-29791** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 13:49:46** Prep Date: **10/28/2013**
Client ID: Run ID: **INICP2_131030A** SeqNo: **1107336**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	200									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 1310408
Project: 013066 Blue Lake Business Park

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-29791** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 13:52:56** Prep Date: **10/28/2013**
Client ID: Run ID: **INICP2_131030A** SeqNo: **1107337**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1,753	200	2,000	0	87.7%	85	115	0			

Sample ID: **LCSD-29791** Batch ID: **29791** Test Code: **6ICPX** Units: **µg/L** Analysis Date **10/30/2013 13:55:31** Prep Date: **10/28/2013**
Client ID: Run ID: **INICP2_131030A** SeqNo: **1107338**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1,748	200	2,000	0	87.4%	85	115	1,750	0.271%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

Rec'd 10/25/13 1310408

LABORATORY NUMBER: ~~1309440~~

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silicagel Cleanup	CAMS	Dioxins/Furans (Test America)	VOC's	SVOCs (CalScience)
	WP-1 @ 15-16	9/25/13	10:35	S			X	X			
	WP-2 @ 18-19	"	11:50	S							
	WP-3 @ 12	"	13:30	S							
	WP-3 @ 19-20	"	13:40	S							
	WP-4 @ 15.5-16.5	"	14:30	S							
	WP-5 @ 12-16	"	15:30	S							
	WP-6 @ 12-16	"	15:30	S							
	Equipment Blank	"	14:05	W							

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 3.0 °C
STLC-Cr	
	Received On Ice? (Y) N
	Samples Intact? (Y) N
	Preserved? Y / N
	Preserved @ NCL?
Water samples were Field Filtered & Preserved, as per Brenda Howell	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
16:22 9/25/13		RBm	2/25/13 1621

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

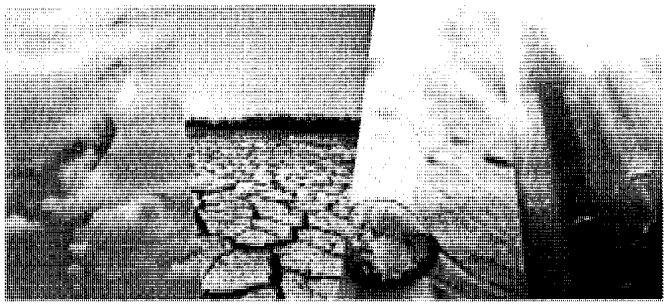
ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 13-10-0377

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: North Coast Laboratories, Ltd.

Client Project Name: 1310014

Attention: Trudie Blasi
5680 West End Road
Arcata, CA 95521-9202

Approved for release on 10/08/2013 by:
Don Burley
Project Manager

ResultLink ▸

Email your PM ▸

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: 1310014
Work Order Number: 13-10-0377

Calscience Environmental Laboratories, Inc.

Work Order Narrative

Work Order: 13-10-0377 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 10/04/13. They were assigned to Work Order 13-10-0377.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Calscience Environmental Laboratories, Inc.

Sample Summary

Client:	North Coast Laboratories, Ltd.	Work Order:	13-10-0377
	5680 West End Road	Project Name:	1310014
	Arcata, CA 95521-9202	PO Number:	
		Date/Time Received:	10/04/13 12:00
		Number of Containers:	1
Attn:	Trudie Blasi		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1310014-21C / TP-09-1.0	13-10-0377-1	10/01/13 13:40	1	Solid

Calscience Environmental Laboratories, Inc.

Analytical Report

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1310014

Date Received: 10/04/13
Work Order: 13-10-0377
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1310014-21C / TP-09-1.0	**13-10-0377-1-A**	**10/01/13 13:40**	**Solid**	**GC/MS EEE**	**10/04/13**	**10/08/13 01:40**	**131004L19**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	0.029	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	0.024	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	73	14-146	
Nitrobenzene-d5	79	18-162	
p-Terphenyl-d14	102	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Analytical Report

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1310014

Date Received: 10/04/13
Work Order: 13-10-0377
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-06-010-1856**	**N/A**	**Solid**	**GC/MS EEE**	**10/04/13**	**10/07/13 23:43**	**131004L19**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	0.020	1	
2-Methylnaphthalene	ND	0.020	1	
1-Methylnaphthalene	ND	0.020	1	
Acenaphthylene	ND	0.020	1	
Acenaphthene	ND	0.020	1	
Fluorene	ND	0.020	1	
Phenanthrene	ND	0.020	1	
Anthracene	ND	0.020	1	
Fluoranthene	ND	0.020	1	
Pyrene	ND	0.020	1	
Benzo (a) Anthracene	ND	0.020	1	
Chrysene	ND	0.020	1	
Benzo (k) Fluoranthene	ND	0.020	1	
Benzo (b) Fluoranthene	ND	0.020	1	
Benzo (a) Pyrene	ND	0.020	1	
Indeno (1,2,3-c,d) Pyrene	ND	0.020	1	
Dibenz (a,h) Anthracene	ND	0.020	1	
Benzo (g,h,i) Perylene	ND	0.020	1	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	82	14-146	
Nitrobenzene-d5	89	18-162	
p-Terphenyl-d14	109	34-148	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1310014

Date Received: 10/04/13
Work Order: 13-10-0377
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Page 1 of 1

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
13-10-0391-1	**Solid**	**GC/MS EEE**	**10/04/13**	**10/07/13 22:56**	**131004S19**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	0.08334	0.2000	0.2433	80	0.3877	152	15-171	46	0-44	4
2-Methylnaphthalene	0.03304	0.2000	0.2352	101	0.2560	111	28-160	8	0-39	
1-Methylnaphthalene	0.02708	0.2000	0.2191	96	0.2409	107	28-154	9	0-40	
Acenaphthylene	ND	0.2000	0.1837	92	0.2040	102	27-153	10	0-41	
Acenaphthene	ND	0.2000	0.1736	87	0.1764	88	33-147	2	0-38	
Fluorene	ND	0.2000	0.1813	91	0.1885	94	12-180	4	0-33	
Phenanthrene	ND	0.2000	0.1758	88	0.2448	122	26-152	33	0-29	4
Anthracene	ND	0.2000	0.1418	71	0.1504	75	10-145	6	0-25	
Fluoranthene	ND	0.2000	0.1600	80	0.2155	108	20-158	30	0-31	
Pyrene	ND	0.2000	0.1662	83	0.2348	117	11-191	34	0-31	4
Benzo (a) Anthracene	ND	0.2000	0.1359	68	0.1430	71	36-150	5	0-32	
Chrysene	ND	0.2000	0.1245	62	0.1317	66	21-189	6	0-29	
Benzo (k) Fluoranthene	ND	0.2000	0.1202	60	0.1213	61	40-148	1	0-32	
Benzo (b) Fluoranthene	ND	0.2000	0.1306	65	0.1515	76	39-147	15	0-28	
Benzo (a) Pyrene	ND	0.2000	0.1115	56	0.1413	71	36-168	24	0-26	
Indeno (1,2,3-c,d) Pyrene	ND	0.2000	0.1122	56	0.1451	73	22-160	26	0-26	
Dibenz (a,h) Anthracene	ND	0.2000	0.07934	40	0.08018	40	27-147	1	0-30	
Benzo (g,h,i) Perylene	ND	0.2000	0.07484	37	0.1159	58	10-152	43	0-28	4

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Quality Control - LCS

North Coast Laboratories, Ltd.
5680 West End Road
Arcata, CA 95521-9202

Project: 1310014

Date Received: 10/04/13
Work Order: 13-10-0377
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Page 1 of 1

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	LCS Batch Number
099-06-010-1856	Solid	GC/MS EEE	10/08/13 00:06	131004L19

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Naphthalene	0.2000	0.1732	87	64-118	55-127	
2-Methylnaphthalene	0.2000	0.1732	87	55-127	43-139	
1-Methylnaphthalene	0.2000	0.1968	98	57-129	45-141	
Acenaphthylene	0.2000	0.1678	84	36-132	20-148	
Acenaphthene	0.2000	0.1716	86	61-121	51-131	
Fluorene	0.2000	0.1741	87	56-128	44-140	
Phenanthrene	0.2000	0.1655	83	56-122	45-133	
Anthracene	0.2000	0.1564	78	11-119	0-137	
Fluoranthene	0.2000	0.1725	86	56-122	45-133	
Pyrene	0.2000	0.1847	92	57-129	45-141	
Benzo (a) Anthracene	0.2000	0.1809	90	49-127	36-140	
Chrysene	0.2000	0.1665	83	60-126	49-137	
Benzo (k) Fluoranthene	0.2000	0.1883	94	54-138	40-152	
Benzo (b) Fluoranthene	0.2000	0.1882	94	46-136	31-151	
Benzo (a) Pyrene	0.2000	0.1911	96	40-148	22-166	
Indeno (1,2,3-c,d) Pyrene	0.2000	0.2396	120	43-163	23-183	
Dibenz (a,h) Anthracene	0.2000	0.1636	82	45-153	27-171	
Benzo (g,h,i) Perylene	0.2000	0.1495	75	38-140	21-157	

Total number of LCS compounds: 18
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

Sample Analysis Summary Report

Work Order: 13-10-0377

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM PAHs	EPA 3545	842	GC/MS EEE	1

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order: 13-10-0377 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

NORTH COAST LABORATORIES LTD.

Sub-Contract Chain of Custody Record

Date Shipped: 10/3/2013
PO #: 1310014

13-10-0377

Subcontractor: Calscience Enironmental Labs
7440 Lincoln Way
Garden Grove, CA 92841

Attn: SAMPLE RECEIVING 714 895-5494

Send Results to: North Coast Labs
5680 West End Road
Arcata, CA 95521
(707) 822-4649

Attn: Trudie Blasi, tblasi@northcoastlabs.com

NCL Sample #	Collection Date	Matrix	State Form System	Sampler	Analysis
Sample ID	Bottle		Source	Employer	Remarks
1310014-21C	10/01/2013 01:40 pm	Soil			Subcontracted Analysis
TP-09-1.0	8-oz soil jar				PAH's by 8270 SIM

	Date/Time		Date/Time
Relinquished by: RS	10/3/13 1010	Received by: Dannyle CH	10/4/13 12:00
Relinquished by:		Received by:	

Special Instructions: Please include NCL Sample #, Sample ID, and QC data on all analytical work; include PO # on invoice.

GSO

GSO
GOLDEN STATE OVERNIGHT

WebShip
800-322-5555 www.gso.com

0377

Ship From:
SAMPLE CONTROL
NORTH COAST LABORATORIES
5680 WEST END RD
ARCATA, CA 95521

Ship To:
SAMPLE RECEIVING
CALSCIENCE ENVIRONMENTAL LABS
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 522892730

PDS

ORC **A**

GARDEN GROVE

D92841A

16697884

Print Date : 10/03/13 10:44 AM

1 of 1

Send Label To Printer ☑ Print All Edit Shipment Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-10-0377

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: North Coast Labs DATE: 10/04/13

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.9 °C - 0.2 °C (CF) = 3.7 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Checked by: 659

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Checked by: 659

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Checked by: 836

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☐	☑	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☑8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Aqueous: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBp ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGJ ☐500AGJs ☐250AGB ☐250CGB ☐250CGBs ☐1PB ☐1PBna ☐500PB ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ Labeled/Checked by: 836

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 228

Preservative: h: HCL n: HNO_3 na_2:$Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered Scanned by: 836

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 13[illegible]

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 9550
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-engr.com
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

PROJECT INFORMATION
Project Number: 0130606
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica gel Cleanup	ANALYSIS: CAM 5
	TP-01-1.5	10/1/13	09:25	S			X	X
	TP-01-3.0		09:30	S			X	X
	TP-02-1.0		09:55	S			X	X
	TP-02-3.0		10:00	S			X	X
	TP-04-1.0		10:10	S			X	X
	TP-04-3.75		10:15	S			X	X
	TP-03-1.0		10:30	S			X	X
	TP-03-3.0		10:35	S			X	X
	TP-05-1.0		11:15	S			X	X
	TP-05-3.0		11:20	S			X	X

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1310014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-Engr.com
Sampler (Sign & Print): Erik Nielsen

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica gel cleanup	CAM 5	Dioxins/Furans (Test America)	VOCs	SVOCs (CALScience)
	TP-06-1.5	10/1/13	11:30	S			X	X			
	TP-06A-1.5		11:33	S			X	X			
	TP-06-3.5		11:35	S			X	X			
	TP-07-1.5		11:50	S			X	X			
	TP-07-3.5		11:55	S			X	X			
	TP-08-1.5		12:35	S			X	X			
	TP-08-3.0		12:40	S			X	X			
	TP-10-1.0		13:25	S			X	X			
	TP-10-3.0		13:30	S			X	X			
	TP-10A-3.0	↓	13:35	S			X	X			

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1605

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 13C0019

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash Ave
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@shn-engr.com
Sampler (Sign & Print): Erik Nielsen

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/Mo w/ Silica gel Cleanup	CAM 5	SVOCs	VOCs
	TP-09-1.0	10/1/13	13:40	S			X	X	X	X
	TP-09-3.0		13:45	S			X	X		
	TP-11-1.0		13:55	S			X	X		
	TP-11-3.0		14:00	S			X	X		
	TP-12-1.0		14:15	S			X	X		
	TP-12-3.0		14:20	S			X	X		
	TRIP Blank		14:25	W					X	
	TP-13-1.0		14:30	S			X	X		
	TP-13-3.0		14:35	S			X	X		

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2-4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen	10/1/13 1600		10/1/13 1600

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 310014

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka
Phone: 707-441-8855
Copies of Report to:
Sampler (Sign & Print): Erik Nielsen / Erik Nielsen

TAT: ☑ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☑ Final Report PDF ☐ FAX By:

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*
	TP-14-1.0	10/1/13	14:45	S
	TP-14-3.0		14:50	
	TP-14A-3.0		14:55	
	TP-15-1.0		15:00	
	TP-15-3.0		15:05	
	TP-16-1.0		15:10	
	TP-16-3.0		16:15	

PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica Gel Cleanup	ANALYSIS: CAM 5
		X	X
		X	X
		X	X
		X	X
		X	X
		X	X
		X	X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
	Temperature 4.8 °C
	2.4
	Received On Ice? Y / N
	Samples Intact? Y / N
	Preserved? Y / N
	Preserved @ NCL?
	Y / N / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Erik Nielsen / Erik Nielsen	10-1-13/1600		10/1/13 1600

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-4303-1
Client Project/Site: 1309455

For:
North Coast Laboratories LTD
5680 West End Road
Arcata, California 95521

Attn: Ms. Trudie Blasi

Karen Dahl

Authorized for release by:
10/18/2013 2:17:43 PM

Karen Dahl, Project Manager II
(916)374-4384
karen.dahl@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Definitions/Glossary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Job ID: 320-4303-1

Laboratory: TestAmerica Sacramento

4

Narrative

Comments
No additional comments.

Receipt
The sample was received on 9/27/2013 9:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

Dioxin
Method(s) 1613B: Some ion abundance ratios are outside criteria for the following samples: Method Blank & WP-3 (1309455-03G) (320-4303-1). Quantitation is based on the theoretical ion abundance ratio; therefore, the affected analytes have been reported as estimated maximum possible concentrations (EMPCs). The affected analytes have been flagged with a "q" qualifier.

No other analytical or quality issues were noted.

Dioxin Prep
No analytical or quality issues were noted.

Detection Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Client Sample ID: WP-3 (1309455-03G)

Lab Sample ID: 320-4303-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,7,8-PeCDF	4.5	J	50	1.2	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	8.0	J	50	0.75	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	9.7	J q B	50	0.71	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	9.3	J q	50	0.66	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	8.9	J B	50	0.64	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	9.0	J B	50	0.57	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	8.6	J q B	50	0.74	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	11	J B	50	0.55	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	15	J B	50	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	11	J q B	50	1.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	16	J B	50	1.6	pg/L	1		1613B	Total/NA
OCDD	36	J B	99	1.9	pg/L	1		1613B	Total/NA
OCDF	31	J B	99	2.1	pg/L	1		1613B	Total/NA
Total PeCDF	4.5	J	50	2.3	pg/L	1		1613B	Total/NA
Total HxCDD	27	J q B	50	0.71	pg/L	1		1613B	Total/NA
Total HxCDF	38	J q B	50	0.63	pg/L	1		1613B	Total/NA
Total HpCDD	15	J B	50	1.1	pg/L	1		1613B	Total/NA
Total HpCDF	27	J q B	50	1.3	pg/L	1		1613B	Total/NA

5

This Detection Summary does not include radiochemical test results.

Client Sample ID: WP-3 (1309455-03G)

Date Collected: 09/26/13 10:00
Date Received: 09/27/13 09:00

Lab Sample ID: 320-4303-1

Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.9	0.65	pg/L		10/02/13 12:03	10/03/13 23:17	1
2,3,7,8-TCDF	ND		9.9	0.78	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,7,8-PeCDD	ND		50	1.9	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,7,8-PeCDF	ND		50	3.3	pg/L		10/02/13 12:03	10/03/13 23:17	1
2,3,4,7,8-PeCDF	**4.5**	**J**	50	1.2	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,4,7,8-HxCDD	**8.0**	**J**	50	0.75	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,6,7,8-HxCDD	**9.7**	**J q B**	50	0.71	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,7,8,9-HxCDD	**9.3**	**J q**	50	0.66	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,4,7,8-HxCDF	**8.9**	**J B**	50	0.64	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,6,7,8-HxCDF	**9.0**	**J B**	50	0.57	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,7,8,9-HxCDF	**8.6**	**J q B**	50	0.74	pg/L		10/02/13 12:03	10/03/13 23:17	1
2,3,4,6,7,8-HxCDF	**11**	**J B**	50	0.55	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	50	1.1	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,4,6,7,8-HpCDF	**11**	**J q B**	50	1.0	pg/L		10/02/13 12:03	10/03/13 23:17	1
1,2,3,4,7,8,9-HpCDF	**16**	**J B**	50	1.6	pg/L		10/02/13 12:03	10/03/13 23:17	1
OCDD	**36**	**J B**	99	1.9	pg/L		10/02/13 12:03	10/03/13 23:17	1
OCDF	**31**	**J B**	99	2.1	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total TCDD	ND		9.9	0.65	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total TCDF	ND		9.9	0.78	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total PeCDD	ND		50	1.9	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total PeCDF	**4.5**	**J**	50	2.3	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total HxCDD	**27**	**J q B**	50	0.71	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total HxCDF	**38**	**J q B**	50	0.63	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total HpCDD	**15**	**J B**	50	1.1	pg/L		10/02/13 12:03	10/03/13 23:17	1
Total HpCDF	**27**	**J q B**	50	1.3	pg/L		10/02/13 12:03	10/03/13 23:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*65*		*25 - 164*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,7,8-PeCDD	*49*		*25 - 181*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*24 - 185*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-2,3,4,7,8-PeCDF	*56*		*21 - 178*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,4,7,8-HxCDD	*54*		*32 - 141*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,6,7,8-HxCDD	*62*		*28 - 130*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,4,7,8-HxCDF	*49*		*26 - 152*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,6,7,8-HxCDF	*61*		*26 - 123*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,7,8,9-HxCDF	*49*		*29 - 147*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-2,3,4,6,7,8-HxCDF	*56*		*28 - 136*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*43*		*23 - 140*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*49*		*28 - 143*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*45*		*26 - 138*	*10/02/13 12:03*	*10/03/13 23:17*	*1*
13C-OCDD	*42*		*17 - 157*	*10/02/13 12:03*	*10/03/13 23:17*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*10/02/13 12:03*	*10/03/13 23:17*	*1*

Toxicity Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Client Sample ID: WP-3 (1309455-03G)

Lab Sample ID: 320-4303-1

Analyte	Result	Qualifier	NONE	NONE	Unit	DLM 1DFB ND = 0 TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		8.3	TEQ

Analyte	Result	Qualifier	RL	EDL	Unit	DLM 1DFB ND = 0 TEF	TEQ	Method
2,3,7,8-TCDD	ND		9.9	0.65	pg/L	1.0	0.00	1613B
2,3,7,8-TCDF	ND		9.9	0.78	pg/L	0.1	0.00	1613B
1,2,3,7,8-PeCDD	ND		50	1.9	pg/L	1.0	0.00	1613B
1,2,3,7,8-PeCDF	ND		50	3.3	pg/L	0.03	0.00	1613B
2,3,4,7,8-PeCDF	**4.5**	**J**	50	1.2	pg/L	0.3	**1.4**	1613B
1,2,3,4,7,8-HxCDD	**8.0**	**J**	50	0.75	pg/L	0.1	**0.80**	1613B
1,2,3,6,7,8-HxCDD	**9.7**	**J q B**	50	0.71	pg/L	0.1	**0.97**	1613B
1,2,3,7,8,9-HxCDD	**9.3**	**J q**	50	0.66	pg/L	0.1	**0.93**	1613B
1,2,3,4,7,8-HxCDF	**8.9**	**J B**	50	0.64	pg/L	0.1	**0.89**	1613B
1,2,3,6,7,8-HxCDF	**9.0**	**J B**	50	0.57	pg/L	0.1	**0.90**	1613B
1,2,3,7,8,9-HxCDF	**8.6**	**J q B**	50	0.74	pg/L	0.1	**0.86**	1613B
2,3,4,6,7,8-HxCDF	**11**	**J B**	50	0.55	pg/L	0.1	**1.1**	1613B
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	50	1.1	pg/L	0.01	**0.15**	1613B
1,2,3,4,6,7,8-HpCDF	**11**	**J q B**	50	1.0	pg/L	0.01	**0.11**	1613B
1,2,3,4,7,8,9-HpCDF	**16**	**J B**	50	1.6	pg/L	0.01	**0.16**	1613B
OCDD	**36**	**J B**	99	1.9	pg/L	0.0003	**0.011**	1613B
OCDF	**31**	**J B**	99	2.1	pg/L	0.0003	**0.0093**	1613B

TEF Reference:

DLM 1DFB = DLM Form 1 CDD-2 (1DFB) WHO 2005, World Health Organization (WHO) 2005

Surrogate Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		37TCDD
Lab Sample ID	**Client Sample ID**	**(35-197)**
320-4303-1	WP-3 (1309455-03G)	94
LCS 320-26558/2-A	Lab Control Sample	93
MB 320-26558/1-A	Method Blank	97

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

8

Isotope Dilution Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF1	PeCDF2	HxCDD1	HxCDD2	HxCDF1
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
320-4303-1	WP-3 (1309455-03G)	65	73	49	57	56	54	62	49
MB 320-26558/1-A	Method Blank	78	86	59	69	69	57	69	55

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxCDF2	HxCDF4	HxCDF3	HpCDD	HpCDF1	HpCDF2	OCDD
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)
320-4303-1	WP-3 (1309455-03G)	61	49	56	43	49	45	42
MB 320-26558/1-A	Method Blank	69	54	63	48	54	48	46

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF1 = 13C-1,2,3,7,8-PeCDF
PeCDF2 = 13C-2,3,4,7,8-PeCDF
HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF1	PeCDF2	HxCDD1	HxCDD2	HxCDF1
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-26558/2-A	Lab Control Sample	61	69	49	56	54	50	63	50

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxCDF2	HxCDF4	HxCDF3	HpCDD	HpCDF1	HpCDF2	OCDD
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)
LCS 320-26558/2-A	Lab Control Sample	61	48	57	44	50	44	44

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF1 = 13C-1,2,3,7,8-PeCDF
PeCDF2 = 13C-2,3,4,7,8-PeCDF
HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
HxCDF3 = 13C-2,3,4,6,7,8-HxCDF

Isotope Dilution Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

9

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-26558/1-A
Matrix: Water
Analysis Batch: 26986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 26558

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.70	pg/L		10/02/13 12:03	10/03/13 18:58	1
2,3,7,8-TCDF	ND		10	0.85	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,7,8-PeCDD	ND		50	1.4	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,7,8-PeCDF	ND		50	0.94	pg/L		10/02/13 12:03	10/03/13 18:58	1
2,3,4,7,8-PeCDF	ND		50	1.2	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,4,7,8-HxCDD	ND		50	0.88	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,6,7,8-HxCDD	1.23	J q	50	0.81	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,7,8,9-HxCDD	ND		50	0.76	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,4,7,8-HxCDF	1.46	J q	50	0.47	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,6,7,8-HxCDF	1.68	J	50	0.42	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,7,8,9-HxCDF	1.54	J	50	0.56	pg/L		10/02/13 12:03	10/03/13 18:58	1
2,3,4,6,7,8-HxCDF	1.31	J q	50	0.40	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,4,6,7,8-HpCDD	4.07	J	50	0.81	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,4,6,7,8-HpCDF	3.38	J	50	0.60	pg/L		10/02/13 12:03	10/03/13 18:58	1
1,2,3,4,7,8,9-HpCDF	2.58	J	50	1.1	pg/L		10/02/13 12:03	10/03/13 18:58	1
OCDD	10.1	J	100	1.2	pg/L		10/02/13 12:03	10/03/13 18:58	1
OCDF	6.12	J	100	1.4	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total TCDD	ND		10	0.70	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total TCDF	ND		10	0.85	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total PeCDD	ND		50	1.4	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total PeCDF	ND		50	1.2	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total HxCDD	1.23	J q	50	0.82	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total HxCDF	5.98	J q	50	0.46	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total HpCDD	4.07	J	50	0.81	pg/L		10/02/13 12:03	10/03/13 18:58	1
Total HpCDF	5.97	J	50	0.84	pg/L		10/02/13 12:03	10/03/13 18:58	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*25 - 164*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-2,3,7,8-TCDF	*86*		*24 - 169*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,7,8-PeCDD	*59*		*25 - 181*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-2,3,4,7,8-PeCDF	*69*		*21 - 178*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,4,7,8-HxCDD	*57*		*32 - 141*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,4,7,8-HxCDF	*55*		*26 - 152*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,7,8,9-HxCDF	*54*		*29 - 147*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-2,3,4,6,7,8-HxCDF	*63*		*28 - 136*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*48*		*23 - 140*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*54*		*28 - 143*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*48*		*26 - 138*	*10/02/13 12:03*	*10/03/13 18:58*	*1*
13C-OCDD	*46*		*17 - 157*	*10/02/13 12:03*	*10/03/13 18:58*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*10/02/13 12:03*	*10/03/13 18:58*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-26558/2-A
Matrix: Water
Analysis Batch: 26986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	180		pg/L		90	67 - 158
2,3,7,8-TCDF	200	172		pg/L		86	75 - 158
1,2,3,7,8-PeCDD	1000	857		pg/L		86	70 - 142
1,2,3,7,8-PeCDF	1000	823		pg/L		82	80 - 134
2,3,4,7,8-PeCDF	1000	871		pg/L		87	68 - 160
1,2,3,4,7,8-HxCDD	1000	855		pg/L		86	70 - 164
1,2,3,6,7,8-HxCDD	1000	776		pg/L		78	76 - 134
1,2,3,7,8,9-HxCDD	1000	806		pg/L		81	64 - 162
1,2,3,4,7,8-HxCDF	1000	876		pg/L		88	72 - 134
1,2,3,6,7,8-HxCDF	1000	853		pg/L		85	84 - 130
1,2,3,7,8,9-HxCDF	1000	859		pg/L		86	78 - 130
2,3,4,6,7,8-HxCDF	1000	842		pg/L		84	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	906		pg/L		91	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	873		pg/L		87	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	901		pg/L		90	78 - 138
OCDD	2000	1700		pg/L		85	78 - 144
OCDF	2000	1600		pg/L		80	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*61*		*20 - 175*
13C-2,3,7,8-TCDF	*69*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*49*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*56*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*54*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*50*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*63*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*50*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*61*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*48*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*57*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*44*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*50*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*44*		*20 - 186*
13C-OCDD	*44*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*

QC Association Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Specialty Organics

Prep Batch: 26558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-4303-1	WP-3 (1309455-03G)	Total/NA	Water	1613B	
LCS 320-26558/2-A	Lab Control Sample	Total/NA	Water	1613B	
MB 320-26558/1-A	Method Blank	Total/NA	Water	1613B	

Analysis Batch: 26986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-4303-1	WP-3 (1309455-03G)	Total/NA	Water	1613B	26558
LCS 320-26558/2-A	Lab Control Sample	Total/NA	Water	1613B	26558
MB 320-26558/1-A	Method Blank	Total/NA	Water	1613B	26558

Lab Chronicle

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Client Sample ID: WP-3 (1309455-03G)
Date Collected: 09/26/13 10:00
Date Received: 09/27/13 09:00

Lab Sample ID: 320-4303-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1006.5 mL	20.00 uL	26558	10/02/13 12:03	CCC	TAL SAC
Total/NA	Analysis	1613B		1			26986	10/03/13 23:17	ALM	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NE-OS-22-13	01-31-14
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-13
Arizona	State Program	9	AZ0708	08-11-14
Arkansas DEQ	State Program	6	88-0691	06-17-14
California	NELAP	9	1119CA	01-31-14
Connecticut	State Program	1	PH-0691	06-30-15
Florida	NELAP	4	E87570	06-30-14
Guam	State Program	9	N/A	08-31-14
Hawaii	State Program	9	N/A	01-31-14
Illinois	NELAP	5	200060	03-17-14
Kansas	NELAP	7	E-10375	10-31-13
Louisiana	NELAP	6	30612	06-30-14
Michigan	State Program	5	9947	01-31-14
Nebraska	State Program	7	NE-OS-22-13	01-31-14
Nevada	State Program	9	CA44	07-31-14
New Jersey	NELAP	2	CA005	06-30-14
New York	NELAP	2	11666	04-01-14
Northern Mariana Islands	State Program	9	MP0007	02-01-14
Oregon	NELAP	10	CA200005	03-28-14
Pennsylvania	NELAP	3	68-01272	03-31-14
South Carolina	State Program	4	87014	06-30-14
Texas	NELAP	6	T104704399-08-TX	05-31-14
US Fish & Wildlife	Federal		LE148388-0	12-31-13
USDA	Federal		P330-11-00436	12-30-14
USEPA UCMR	Federal	1	CA00044	11-06-14
Utah	NELAP	8	QUAN1	01-31-14
Washington	State Program	10	C581	05-05-14
West Virginia	State Program	3	9930C	12-31-13
Wyoming	State Program	8	8TMS-Q	01-31-14

13

Method Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	40CFR136A	TAL SAC

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: North Coast Laboratories LTD
Project/Site: 1309455

TestAmerica Job ID: 320-4303-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-4303-1	WP-3 (1309455-03G)	Water	09/26/13 10:00	09/27/13 09:00

NORTH COAST LABORATORIES LTD.

Sub-Contract Chain of Custody Record

Date Shipped: 9/26/2013
PO #: 1309455

Subcontractor: Test America West Sacramento
880 Riverside Parkway
West Sacramento, CA 95605

Attn: Sample Control 916-373-5600

Send Results to: North Coast Labs
5680 West End Road
Arcata, CA 95521
(707) 822-4649

Attn: Trudie Blasi, tblasi@northcoastlabs.com

NCL Sample #	Collection Date	Matrix	State Form System	Sampler	Analysis
Sample ID	**Bottle**		**Source**	**Employer**	**Remarks**
1309455-03G	9/26/2013 10:00 am	Groundwater			Dioxins - 1613B
WP-3	1 L amber glass				

320-4303 Chain of Custody

	Date/Time		Date/Time
Relinquished by:	9/26/13 1258	**Received by:**	9/27/13 900
Relinquished by:		**Received by:**	

Special Instructions: Please include NCL Sample #, Sample ID, and QC data on all analytical work; include PO # on invoice.

Login Sample Receipt Checklist

Client: North Coast Laboratories LTD

Job Number: 320-4303-1

Login Number: 4303
List Number: 1
Creator: Nelson, Kym D

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

17

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 1309455

Attention: Erik Nielsen
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka CA 95501
Phone: 707-441-8855
Copies of Report to: enielsen@SHN-ENGR.com
Sampler (Sign & Print): Brenda Howell

PROJECT INFORMATION
Project Number: 013066
Project Name: Blue Lake Business Park
Purchase Order Number:

TAT: ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH SAMPLES.

REPORTING REQUIREMENTS:
☐ State Forms
☐ Geotracker ☐ SWAMP ☐ Other EDD:
☒ Final Report PDF ☐ FAX By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—40 ml VOA; 9—60 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other
PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO w/Silica gel Cleanup	CAM 5	Dioxins/Furans (TestAmerica)	SVOCs (CalScience)	VOCs
	WP-1	9/26/13	9:00	GW			X	X			
	WP-2		9:30								
	WP-3		10:00						X	X	X
	WP-4		11:10								
	WP-5		11:35								
	WP-6	↓	10:00	↓							
	Field Blank	↓	11:00	↓			↓	↓			

SPECIAL INSTRUCTIONS	SAMPLE CONDITION
Water Samples were Field Filtered & Preserved as per Brenda Howell.	Temperature 3.8 °C
	Received On Ice? Y / N
	Samples Intact? Y / N
VOC's = List 6	Preserved? Y / N
D/F TEQ WHO 2005	Preserved @ NCL? Y (N) / NA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Brenda Howell	9/26/13 12:23		9/26/13 1223

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; WW=Waste Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Ronald Canady <rcanady@northcoastlabs.com>

Reminder on Dioxin method

2 messages

Ronald Canady <rcanady@northcoastlabs.com> Thu, Sep 26, 2013 at 2:40 PM
To: Brenda Howell <bhowell@shn-engr.com>

Hey again Brenda,

I sent out the Dioxin sample today and told the sub lab to do it by 1613. I didn't give them any TEQ info though. Also, for the VOC's, do you know which one of our lists you need? Trudie may know and I can ask her when she gets back. Thanks again Brenda.

Ron

--
Ron Canady
North Coast Laboratories
5680 West End Rd
Arcata, CA 95521

rcanady@northcoastlabs.com
Phone: 707-822-4649 Fax: 707-822-6831

www.northcoastlabs.com

Brenda Howell <bhowell@shn-engr.com> Thu, Sep 26, 2013 at 2:56 PM
To: Ronald Canady <rcanady@northcoastlabs.com>

Hi Ron,

For the VOCs, we'd like 8260B List 6. Also, all groundwater samples for metals were filtered in the field. Sorry, I forgot to put that on the chain.

I'm not sure about the TEQ. Here is the info I have on methods:

Table 4

Site Constituents of Potential Concern, Laboratory Analytical Methods, Proposed Reporting Limits, and Screening Levels

Blue Lake Business Park, Blue Lake, California

Target Analyses	Analytical	Reporting Limits	Soil Screening	Groundwater

	Method	Soil (ug/g)[1]	Water (ug/L)[2]	Level[3] (ug/g)	Screening Level[4] (ug/L)
Total Petroleum Hydrocarbons as Motor Oil	EPA[5] 8015B	10	170	2,500	100[3]
Total Petroleum Hydrocarbons as Diesel	EPA 8015B	1.0	50	83	100[3]
Total Petroleum Hydrocarbons as Gasoline	EPA 8260B	1.0	50	500	100[3]
Arsenic	EPA 6010B/200.8	2.0	5.0	1.5	10
Cadmium	EPA 6010B/200.8	1.0	5.0	7.4	5
Chromium	EPA 6010B/200.8	2.0	5.0	1,400[6]	50
Nickel	EPA 6010B/200.8	1.0	5.0	150	100
Lead	EPA 6010B/200.8	1.0	5.0	750	15
Zinc	EPA 6010B/200.8	1.0	10	600	5,000[7]
VOCs[8] – Benzene	EPA 8260B	0.005	0.5	0.044	1
VOCs[8] - Toluene	EPA 8260B	0.005	0.5	2.9	150
VOCs[8] - Ethylbenzene	EPA 8260B	0.005	0.5	3.3	1,750
VOCs[8] - Xylenes	EPA 8260B	0.015	1.0	2.3	20
VOCs[8] - MTBE	EPA 8260B	0.02	0.50	.023	13
SVOCs[9] - Naphthalene	EPA 8270C-SIM[10]	0.02	0.20	2.8	NA[11]
Dioxins and furans – 2,3,7,8-TCDD	EPA 1613	1.0×10^{-6}	1.0×10^{-5}	0.000019	0.00003

1. ug/g: micrograms per gram
2. ug/L: micrograms per liter

3. ESLs: environmental screening levels; screening for environmental concerns at sites with contaminated soil and groundwater, shallow soil screening levels, Table A-2 (RWQCB-SF, 2007), unless otherwise noted

4. A compilation of water quality goals; water quality limits for constituents and parameters (RWQCB-Central Valley, 2008), water quality objective based on California Department of Public Health Primary maximum contaminant levels, unless otherwise noted.

5. EPA: U.S. Environmental Protection Agency

6. RSLs: regional screening levels; EPA, Region IX, Industrial Soil Screening Levels (USEPA, 2009)

7. Water quality objective based on California Department of Public Health Secondary maximum contaminant levels.

8. VOCs: volatile organic compounds

9. SVOCs: semi-volatile organic compounds

10. SIM: selective ion monitoring

11. NA: not applicable, or no limit provided

Let me know if that doesn't answer your question, and I will hunt Erik down.

Thanks,

-Brenda

(707) 441-8855

From: Ronald Canady [mailto:rcanady@northcoastlabs.com]
Sent: Thursday, September 26, 2013 2:41 PM
To: Brenda Howell
Subject: Reminder on Dioxin method

[Quoted text hidden]

Ronald Canady <rcanady@northcoastlabs.com>

Blue Lake Bus Park

2 messages

Erik Nielsen <enielsen@shn-engr.com> Mon, Sep 30, 2013 at 8:31 AM
To: Ronald Canady <rcanady@northcoastlabs.com>
Cc: Roxanne Golich <RGolich@northcoastlabs.com>

Hi Ron,

D/F TEQ according to WHO 2005 is good. And 8270-SIM with:

Parameter

Naphthalene
2-Methylnaphthalene
1-Methylnaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene

Thanks

Erik J. Nielsen, P.G., C.H.G.
SHN Consulting Engineers & Geologists
812 W. Wabash Ave, Eureka, CA 95501-2238
Phone: 707-441-8855 / Fax: 707-441-8877
email: enielsen@shn-engr.com

Roxanne Golich <rgolich@northcoastlabs.com> Mon, Sep 30, 2013 at 8:40 AM
To: Erik Nielsen <enielsen@shn-engr.com>
Cc: Ronald Canady <rcanady@northcoastlabs.com>

So it looks like PAH (PNA) SIM is all you need. Thanks, Roxanne

Roxanne Golich-Moore
North Coast Laboratories
5680 West End Rd
Arcata, CA 95521

rgolich@northcoastlabs.com
Phone: 707-822-4649 Fax: 707-822-6831 Cell: 707-845-2664

www.northcoastlabs.com

[Quoted text hidden]