

# **Appendix M**

## **Site Assessment Report for Amanda Estates Development Project**

Tetra Tech 2014

# Site Assessment Report

## Amanda Estates Development Project

2115 Amanda Lane

Escondido, California

#194-5042  
November 17, 2014

### PRESENTED TO

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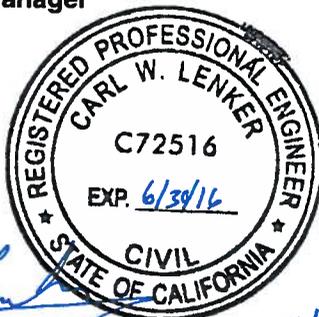


11/17/2014

Derrick Coleman  
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Date

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11/17/14

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## ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
DRO	diesel range
DTSC	Department of Toxic Substances Control
ESA	Environmental Site Assessment
GRO	gasoline range
HASP	Health and Safety Plan
IPA	Isopropanol
OCP	organochlorine pesticide
ORO	oil range
PCB	polychlorinated biphenyl
RSL	Regional Screening Level
SB	soil boring
SV	soil vapor
TPH	total petroleum hydrocarbon
USA	Underground Services Alert of Southern California
VOC	volatile organic compound

## 1.0 INTRODUCTION AND BACKGROUND

Tetra Tech, Inc. (Tetra Tech) has prepared this Site Assessment Report on behalf of Amanda Lane Group, LLC (Amanda Lane Group) to document the results of an investigation at the property known as the Amanda Estates Development Project located at 2115 Amanda Lane in Escondido, California (the "Site"; Figure 1). The Site is designated by Assessor's Parcel Number (APN) 235-202-35-00 (see Figures 2 and 3).

The purpose of this Site Assessment Report is to summarize the results of the soil and soil vapor investigation activities conducted at the Site on August 26 and 27, 2014. The investigation was required by the California Department of Toxic Substances Control (DTSC) and was performed under DTSC's oversight.

The DTSC is providing regulatory oversight for the Site under an Agreement with Amanda Lane Group pursuant to the California Land Reuse and Revitalization Act, entered into on February 3, 2014. The objective of this investigation was to define the extent to which hazardous substances are present in soil and soil vapor at the Site. The Phase II investigation activities were performed in accordance with the Final Site Assessment Work Plan, dated August 8, 2014 (Tetra Tech, 2014), which was approved by DTSC.

### 1.1 SITE DESCRIPTION AND BACKGROUND

The Site covers an area approximately 11-acres in size that was undeveloped in 1938. Based on a review of the earliest available aerial photographs, the Site continued to be unused through the early 1960s. At that time, it was developed into an avocado orchard, which it remained through the late 1980's (GSI, 2011).

Currently, the Site is not used, although several structures remain in place including a split-level single-family residential (constructed in 1961), a detached garage, storage shed, and a small ancillary structure located along the ridge line. Overhead power lines cross the Site in an east-west direction. A single transformer is affixed to the power line pole north of the detached garage. The remaining areas on the Site are undeveloped. Amanda Lane Group plans to develop the Site with single family homes.

Pertinent features in the region of the Site include the former Mayhew Dump, located west of the Site, and the Chatham Barrel Yard property, located approximately ½-mile southeast of the Site.

GeoSoils, Inc. (GSI) conducted an initial Phase I Environmental Site Assessment (ESA) and limited Phase II ESA in 2011 (GSI, 2011). In 2013, GeoSoils prepared an Updated Phase I ESA and conducted an additional Phase II ESA. According to the Phase I ESAs, the Mayhew Dump (also referred to as "the Old Escondido Burn Site") operated on the property adjacent to the Site's western boundary from 1944 to 1949 (GSI, 2013). During the limited Phase II ESA, GSI observed localized thin sections of undocumented fill primarily on the western portion of the Site and Quaternary-age colluvium at the Site down to approximately 2 feet bgs, beneath which is plutonic bedrock consisting of mid-Cretaceous undivided hornblende-biotite tonalite (GSI, 2013). Based on data from private wells in the vicinity of the Site, depth to groundwater is

anticipated to range from approximately 94 to 107 feet bgs and flow to the southwest/southeast (GSI, 2013).

## 1.2 SITE ASSESSMENT OBJECTIVES

The objectives of this site assessment were to address the following requirements from DTSC:

- Sample and analyze soil for lead, organochlorine pesticides (OCPs), and herbicides around the existing structures to evaluate potential impacts to soil as result of historical pesticide or herbicide application and due to lead-based paint from the structures.
- Sample and analyze shallow soil beneath the pole-mounted transformer to determine whether polychlorinated biphenyls (PCBs) are present at elevated levels.
- Sample and analyze soil vapor in the area of the abandoned drums, empty gas can, and other wastes and debris observed near the storage shed on the southwest corner of the Site for the presence of volatile organic compounds (VOCs).
- Sample and analyze soil in the vicinity of the abandoned drums for the presence of total petroleum hydrocarbons (TPH).
- Provide additional site-wide screening for TPH associated with smudge pots (using shallow soil samples) and VOCs, using soil vapor samples.

## **2.0 SAMPLING ACTIVITIES**

Sampling activities were conducted at the Site on August 26 and 27, 2014, to obtain the data required by DTSC. The following discussion summarizes the methods used for sample collection and laboratory analysis.

### **2.1 PRE-FIELD ACTIVITIES**

#### **2.1.1 Health and Safety Plan**

A site-specific Health and Safety Plan (HASP) was developed for the work performed and included the following content:

- Description of the expected hazardous substances that could be encountered during field work;
- Appropriate personal protective equipment levels for the work;
- The monitoring equipment and monitoring procedures for on-site activities;
- Safe work practices around drilling equipment and during sampling activities; and
- Measures to be implemented in the event of an emergency.

On-site personnel and sub-contractors were required to review the HASP prior to the start of field activities; and were required to conduct field activities in accordance with procedures specified in the HASP. Daily tailgate meetings were conducted with applicable personnel prior to starting work to review aspects of the HASP, discuss the scope of work for the day, and discuss potential hazards that may be encountered.

#### **2.1.2 Utility Clearance**

Underground Services Alert of Southern California (USA) Dig Alert was contacted on August 6, 2014 to locate and mark public utilities in the proposed sampling locations (Ticket #B42180182-00B).

## **2.2 FIELD SAMPLING**

The field sampling program consisted of soil and soil vapor sampling. Soil sampling occurred on August 26, 2014 utilizing a Geoprobe 6620 DT truck-mounted rig operated by Strongarm Environmental Services, Inc. Soil samples were collected in acetate sleeves capped with Teflon-lined sheets and tight-fitting plastic end caps. Soil samples were labeled, placed in Ziploc bags and placed in ice-filled coolers for transport to SunStar Laboratories in Lake Forest, California, for analyses.

Soil vapor probes were set between 3 to 5 feet bgs utilizing a porous ceramic tip and ¼-inch Nylaflo tubing. Soil vapor sampling took place on August 27, 2014 by an on-site mobile laboratory, A&R Laboratories. Soil vapor samples were collected by the mobile laboratory technician utilizing a vapor sample pump and a glass bulb. Isopropanol (IPA) was used as a tracer gas during vapor sampling activities to evaluate whether leakage was occurring. All

samples were tracked and monitored under standard chain-of-custody procedures. Sample locations are shown on Figure 3.

The nomenclature used to identify samples was of the form “TtXX-YY-ZZ,” where “Tt” specifies Tetra Tech as the organization responsible for sampling, “XX” indicates the type of sample collected [e.g. soil boring (SB) for soils or soil vapor (SV) for gas], “YY” provides the sample location number, and “ZZ” gives the depth of sample collection (in feet). All holes were backfilled with bentonite chips and then hydrated.

### **2.2.1 Vicinity of Structures**

Soil samples were collected from four locations around the residence building (TtSB-1 through TtSB-4) at two depths (0.5 and 2.5 feet bgs). Composite samples were made from the same-depth samples of each location and the composite samples (TtSB-1-4-COMP at 0.5-foot and 2.5-foot bgs) were analyzed for OCPs. Only the 0.5-foot bgs composite sample was analyzed for herbicides. The discrete soil samples from the 0.5 foot depth from each location were analyzed for lead.

Additional soil samples were collected at two locations near the shed (TtSB-5 and TtSB-6), and at two depths in each location (0.5 and 2.5-foot bgs). Only samples from TtSB-5 were analyzed, while the samples from TtSB-6 were held pending analytical results from TtSB-5. The soil samples from both depths at location TtSB-5 were analyzed for OCPs, and only the 0.5-foot sample was analyzed for herbicides and lead.

### **2.2.2 Trash and Debris Areas**

There are two general areas of trash and/or debris on the Site, and a third area thought to be associated with trash or debris from the former Mayhew dump. The first is located near the shed (north of the residence); the second is in the southwest corner of the property (south and slightly west of the residence); and the third is west of the residence at the western boundary of the Site. The first area had two soil sample locations (TtSB-8 and TtSB-9) and the second area also had two sample locations (TtSB-7 and TtSB-10). Soil samples from TtSB-7 through TtSB-9 were analyzed for TPH only, while the soil sample from TtSB-10 was analyzed for both TPH and VOCs.

Soil vapor samples were collected from the first trash/debris area (TtSV-1 and TtSV-2); the second trash/debris area (TtSV-3, TtSV-4, and TtSV-5); and the third area (TtSV-6). All of these samples were analyzed for VOCs. In addition, the last sample (TtSV-6) was also analyzed for methane.

### **2.2.3 Transformer Area**

One soil sample location (TtSB-11) was located beneath the electrical transformer mounted on a power-company pole north of the residence and east of the shed. One soil sample was collected from this location at 0.5-foot bgs and analyzed for PCBs.

## **2.2.4 Site-Wide Screening**

A total of eight (8) sample locations (TtSB-12 through TtSB-19) were evenly distributed on a grid across the Site to provide shallow (0.5 bgs) soil samples used to evaluate possible TPH accumulation from the use of smudge pots in the avocado orchard.

At five of the soil sample locations, additional soil gas samples were collected (TtSV-7 through TtSV-11) and analyzed for VOCs.

## **2.3 LABORATORY ANALYSES**

After receipt by the laboratory, all samples were handled using standard laboratory protocol and analyzed according to instructions on the chain-of-custody. Samples not required to be analyzed were stored in the freezer until needed or expiration. Compositing of soil samples was completed by the laboratory.

### **2.3.1 Soil Sample Analyses**

The following laboratory methods were applied to the soil samples:

- OCPs by USEPA Method 8081A;
- Herbicides by USEPA Method 8151A;
- PCBs by USEPA Method 8082;
- VOCs by USEPA Method 8260/5035;
- Lead by USEPA Method 6010B; and
- TPH-gasoline range (GRO), diesel range (DRO), and oil range (ORO) by USEPA Method 8015B.

### **2.3.2 Soil Vapor Sample Analyses**

The following laboratory methods were applied to soil vapor samples:

- VOCs by USEPA Method 8260B; and
- Methane by USEPA Method 8015B.

## **2.4 DEVIATIONS**

Due to refusal conditions caused by the presence of bedrock, it was not possible to collect deeper soil vapor samples at 15 feet bgs at boring locations TtSV-1 through TtSV-5 or at the exact depth of 5 feet bgs at other locations (TtSV-7, TtSV-8, TtSV-9, and TtSV-10). Due to the absence of debris at the subsurface at the locations specified as TtSV-1 and TtSV-2, and based on the results of methane sampling at TtSV-6, no methane samples were collected at those locations. There were no other deviations from the Site Assessment Work Plan.

### **3.0 SITE ASSESSMENT RESULTS**

The analytical results for soil samples were generally compared to the USEPA Regional Screening Levels (RSLs) for residential soil (USEPA, 2014). Regional Screening Levels combine human health toxicity values with standard exposure factors to estimate chemical concentrations that are considered to be health-protective for human exposures over a lifetime through direct-contact exposure pathways (e.g., via inhalation and/or ingestion of and/or dermal contact with impacted soil). Therefore, these standards account for potential exposure pathways and resulting human health risks, and the application of the above-cited standards has been approved by DTSC. However, two exceptions are the screening values for TPH and lead. A screening level of 100 milligrams per kilogram (mg/kg) was utilized for both TPH-GRO and TPH-DRO, and 1,000 mg/kg was utilized for TPH-ORO per Table 4-1 of the California RWQCB 1996 Interim Site Assessment and Cleanup Guidebook (RWQCB, 1996). The California Human Health Screening Level (CHHSL) of 80 mg/kg was applied for lead (OEHHA, 2009). Pertinent analytical results for the soil and soil vapor samples collected at the Site are provided in Tables 1 and 2; the complete laboratory analyses reports are provided in Appendices A and B.

#### **3.1 VICINITY OF STRUCTURES**

Analytical results for the soil samples collected surrounding the residential structure at the Site showed detectable levels of chlordane and 4,4'-dichlorodiphenyldichloroethylene (4,4'-DDE) in the shallow composite sample (TtSB-1-4-COMP-0.5), but non-detectable levels in the deeper composite sample (TtSB-1-4-COMP-2.5). Chlordane was detected at a concentration of 0.085 mg/kg and 4,4'-DDE was detected at a concentration of 0.12 mg/kg, well below their respective RSL of 1.8 mg/kg and 1.6 mg/kg. Results for both the shallow and deeper samples from location TtSB-5, near the shed, were non-detect for OCPs. Further, the sampling results were also non-detect for herbicides.

Lead was detected in four of the five shallow samples at concentrations ranging from 5.2 mg/kg to 10 mg/kg, which is well below the screening level of 80 mg/kg.

#### **3.2 TRASH AND DEBRIS AREA**

The analytical results for all four soil samples collected at the trash and debris areas were non-detect for TPH and VOCs.

Soil vapor samples were collected from six locations within the trash and debris areas at depths of 4 feet to 5 feet bgs. No VOCs were detected in any of these samples. Further, no methane gas was detected in the primary or duplicate vapor sample collected at TtSV-6.

#### **3.3 TRANSFORMER AREA**

One soil sample at 0.5 feet bgs from the area below the pole-mounted transformer (TtSB-11) was analyzed for PCBs. The analytical results were non-detect for PCBs in that sample.

### **3.4 SITE-WIDE SCREENING**

Analytical results for all of the shallow soil samples collected at 0.5 feet bgs for site-wide screening were non-detect for TPH (for the gas, diesel, and oil ranges).

Soil vapor sample analyses were performed at the five locations that coincided with soil sample locations on the eastern side of the Site. The analytical results were non-detect for VOCs in all samples, which were taken from depths ranging from 3 feet bgs to 5 feet bgs.

#### 4.0 CONCLUSIONS AND RECOMMENDATION

The site assessment activities, conducted under the regulatory oversight of DTSC pursuant to a DTSC-approved workplan, have satisfied the agency's requirements for further investigation of the Site. In the areas specified by DTSC for further investigation, the additional data obtained by this investigation clearly indicates that there are no elevated levels of the following constituents (and, in most cases, the results were "non-detect"):

- **Lead.** A total of 5 soil samples were tested for lead, and the maximum detection of 10 mg/kg is well below the screening level of 80 mg/kg.
- **OCPs.** Three of the four soil samples analyzed for OCPs were non-detect for individual OCPs. The two OCPs that were identified had concentrations that were either one or two orders of magnitude below the screening level values.
- **Herbicides.** No herbicides were detected in any of the soil samples tested.
- **PCBs.** No PCBs were detected.
- **VOCs.** No VOCs were detected in either the soil sample or the 14 soil vapor samples.
- **TPH.** No TPH was detected in any of the 12 soil samples.
- **Methane.** No methane gas was detected in the primary or duplicate soil vapor sample collected.

Based on the results of this site assessment, Tetra Tech concludes that the environmental condition of the Site has been sufficiently characterized, and recommends no further investigation of the Site. A Response Plan will be developed to address the impacted soils at the western portion of the Site (Figure 3) and will be provided to DTSC for review.

## 5.0 REFERENCES

Department of Toxic Substances (DTSC), 2014. Human Health Risk Assessment (HHRA) Note Number 3 Issued May 21, 2013. Revised July 14, 2014.

Geosoils, Inc. (GSI). 2014, Location of Mayhew Dump Site, West of Adjacent 11-Acre Property, APN 235-202-35-00, 2115 Amanda Lane, Escondido, San Diego County, California 92027 (the "Property"), March 25.

GSI, 2013. Revised Update Phase I and Limited Phase II Environmental Site Assessment, 11-Acre Property, APN 235-202-35-00, 2115 Amanda Lane, Escondido, San Diego County, California 92027, July 19.

GSI, 2011. Phase I Environmental Site Assessment, Limited Site Characterization, and Preliminary Asbestos and Lead-Based Paint Survey, 11-Acre Property, APN 235-202-35-00, 2115 Amanda Lane, Escondido, San Diego County, California 92027, July 22.

Office of Environmental Health Hazard Assessment (OEHHA), 2009. Revised California Human Health Screening Levels for Lead. September 2009.

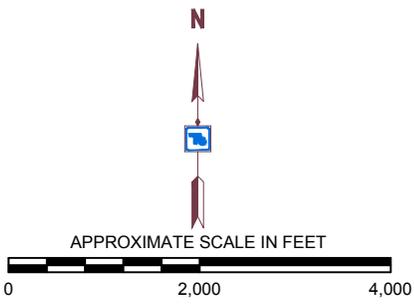
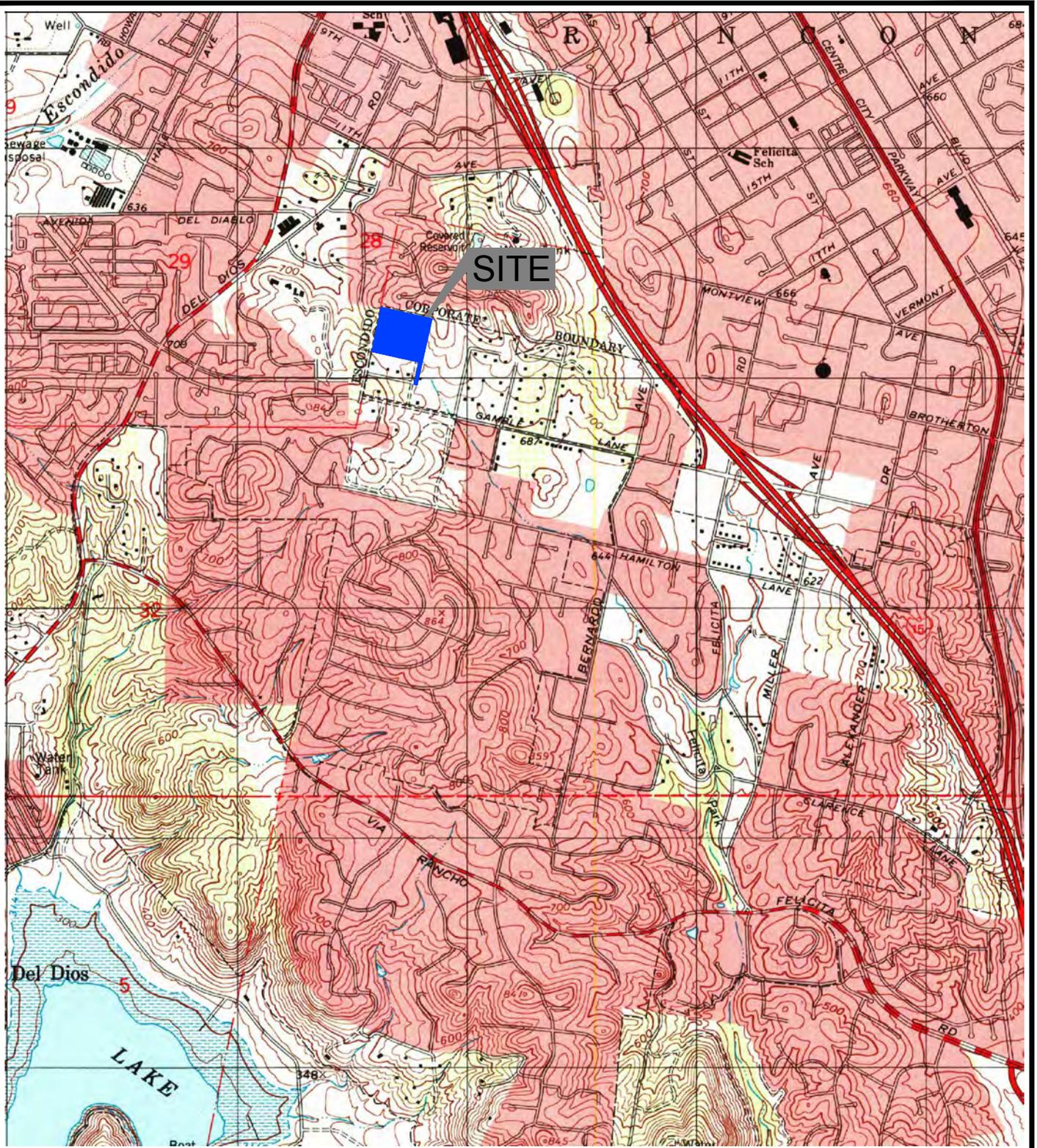
Regional Water Quality Control Board (RWQCB), 1996. Interim Site Assessment & Cleanup Guidebook, California Regional Water Quality Control Board, Los Angeles and Ventura Counties, Region 4. May 1996.

Tetra Tech, 2014. Final Site Assessment Work Plan, Amanda Estates Property, 2115 Amanda Lane, Escondido, California 92029. SITE CODE: 401662-11.

U.S. Environmental Protection Agency (USEPA), 2014. Regional Screening Levels for Chemical Contaminants at Superfund Sites. Residential Soil. Traditional Tables. <http://www.epa.gov/Region9/superfund/prg/>

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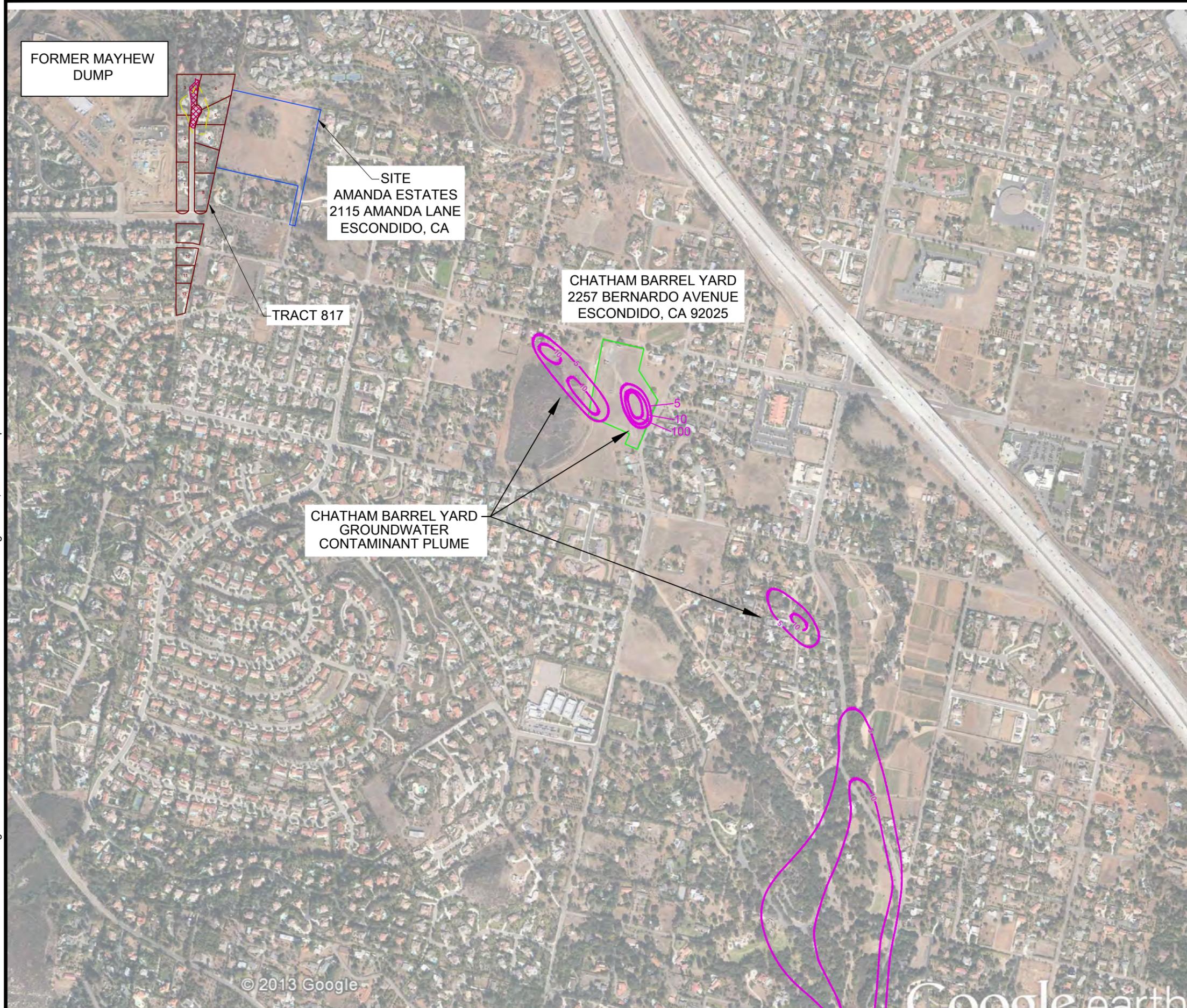
# FIGURES



SOURCE: THE USGS STORE; ESCONDIDO QUADRANGLE; 1955

NEW URBAN WEST, INC.				
SITE LOCATION MAP				
2115 AMANDA LANE			ESCONDIDO, CA	
		PREPARED BY:		
		<b>TETRA TECH, INC.</b>		
<small>17885 VON KARMAN AVENUE, SUITE, 500 IRVINE, CA 92614-6213 Phone (949) 809-5000 Fax (949) 809-5004</small>				
PROJECT NUMBER	APPROVED BY	DRAWN BY	DATE	FIGURE <b>1</b>
194-5042	MC	WRI	SEP 2014	

P:\5041-NUWI - Oak Creek\Working\CAD\FIGURE 2 - REGIONAL SITE LAYOUT OCT 2014.dwg Oct 28, 2014 - 8:48pm rick.ikemoto

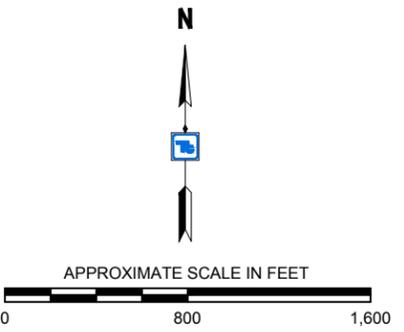


**LEGEND**

-  SITE BOUNDARY
-  CHATHAM BARREL YARD, 2257 BERNARDO AVE, ESCONDIDO, CA, 92025
-  LIMITS OF MAYHEW DUMP DESIGNATED BY GSI, 2014
-  CONTOUR LINE OF ESTIMATED EQUAL CONCENTRATION OF TRICHLOROETHYLENE IN GROUNDWATER (MICROGRAMS PER LITER), DASHED WHERE APPROXIMATE
-  LIMITS OF BURN ASH BURIAL NOTED BY THE PLANNING CENTER, 2010
-  "LOT OUTLINE FROM TRACT 817, APN 235-55" (LOT NUMBERS PROVIDED ON FIGURE 2)

**NOTES:**

1. "ESCONDIDO, CA." MAP. GOOGLE EARTH PRO; IMAGERY DATE 11-2-2012.
2. ALL LOCATIONS ARE APPROXIMATE.



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**REGIONAL SITE LAYOUT**

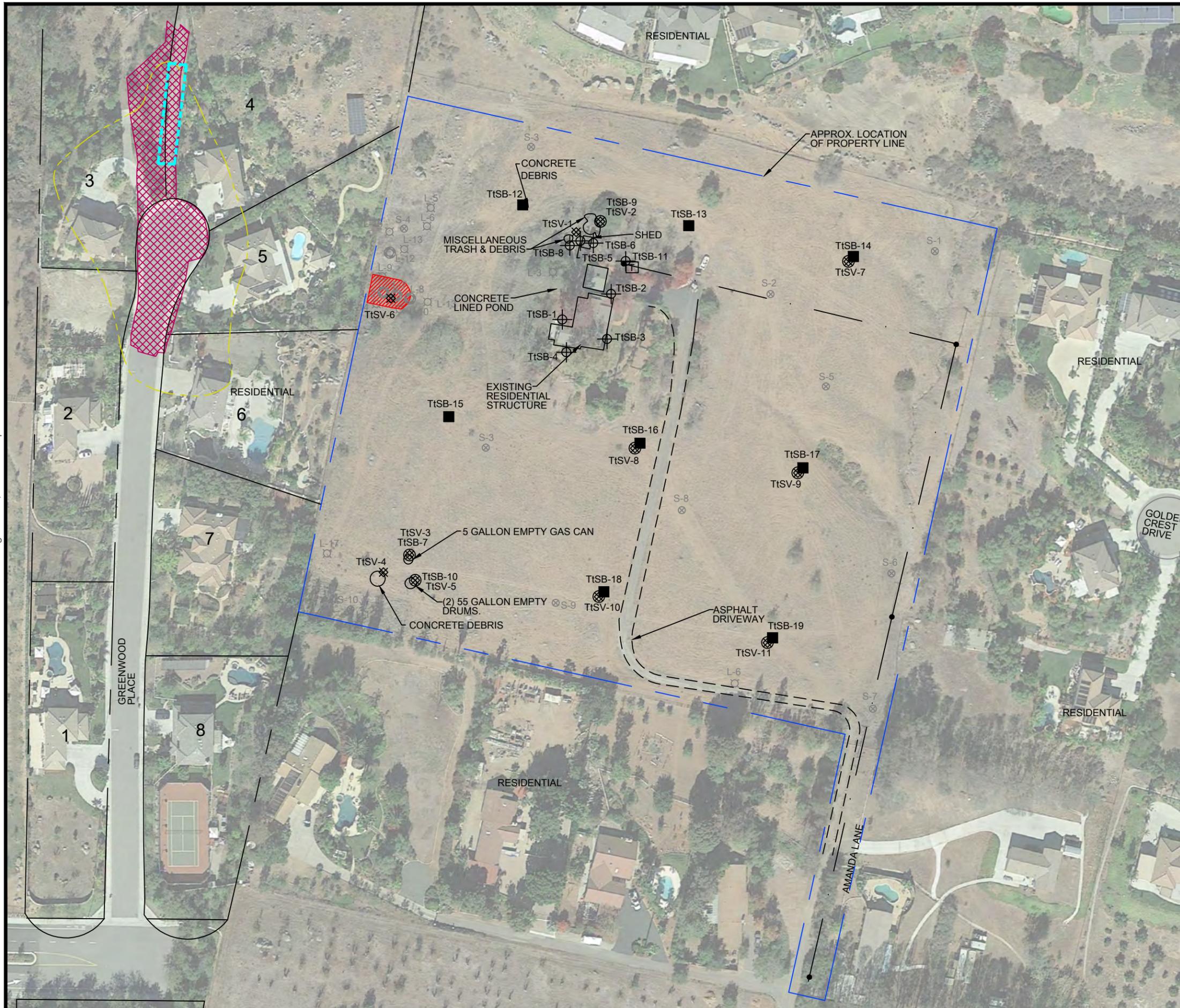
2115 AMANDA LANE ESCONDIDO, CA



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PROJECT NUMBER	APPROVED BY	DRAWN BY	DATE	FIGURE
194-5042	MC	WRI	OCT 2014	<b>2</b>

P:\5042-NUWI - Amanda Estates\CAD\FIGURE 1 - SITE PLAN WITH BORING LOCATIONS.dwg Oct 28, 2014 - 8:59pm rick.ikemoto

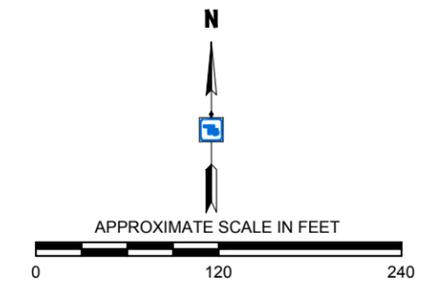


**LEGEND**

- SOIL BORING LOCATION
- SOIL VAPOR BORING LOCATION
- CO-LOCATED SOIL BORING / SOIL VAPOR BORING LOCATION
- SITE-WIDE GRID BORING LOCATION
- SOIL SAMPLE LOCATION FOR ORGANOCHLORINE PESTICIDE TESTING (GSI, 2011)
- SOIL SAMPLE LOCATION FOR VARIOUS ENVIRONMENTAL TESTING (GSI, 2013)
- TEST PIT LOCATION WHERE UNDOCUMENTED FILL WITH TRASH IDENTIFIED (GSI, 2013)
- APPROXIMATE AREA OF IMPACTED SOIL (GSI, 2013)
- POWER POLE
- POWER POLE WITH TRANSFORMER
- LIMITS OF BURN ASH BURIAL NOTED BY THE PLANNING CENTER, 2010
- "LOT NUMBER DESIGNATION AND OUTLINE FROM TRACT 817 (TRACT LOCATION IDENTIFIED ON FIG. 2)
- LIMITS OF MAYHEW DUMP DESIGNATED BY GSI, 2014
- UTILITY EASEMENT NOTED BY GSI, 2013

**NOTES:**

1. "ESCONDIDO, CA." MAP. GOOGLE EARTH PRO; IMAGERY DATE 11-2-2012.
2. ALL LOCATIONS ARE APPROXIMATE.
3. SITE FEATURES NOTED TAKEN FROM GEO SOILS, INC., 2011/2013.
4. LIMITS OF BURN ASH. FIGURE 2. SZYTEL ENGINEERING AND SURVEYING, INC. PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT. JANUARY 27, 2010. BY THE PLANNING CENTER.



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**SITE PLAN WITH BORING LOCATIONS**

2115 AMANDA LANE

ESCONDIDO, CA



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PROJECT NUMBER	APPROVED BY	DRAWN BY	DATE	FIGURE
194-5042	MC	WRI	SEP 2014	<b>3</b>

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# TABLES

**Table 1. Summary of Soil Analytical Results**

Sample ID	Sample Depth (ft bgs)	Sample Location and Rationale	Date Sampled	Detected OCPs USEPA Method 8081 (mg/kg)		Chlorinated Herbicides USEPA Method 8151A (mg/kg)	PCBs USEPA Method 8082 (mg/kg)	VOCs USEPA Method 8260/5035 (mg/kg)	TPH USEPA Method 8015B (mg/kg)			Detected Metals USEPA Method 6010B (mg/kg)
				Chlordane (Total)	4,4'-DDE				GRO (C <sub>6</sub> -C <sub>12</sub> )	DRO (C <sub>13</sub> -C <sub>28</sub> )	ORO (C <sub>29</sub> -C <sub>40</sub> )	
TtSB-1-4-COMP-0.5	0.5	Building 1: Lead, Pesticides, and Herbicides Assessment	8/26/2014	<b>0.085</b>	<b>0.12</b>	<0.030	--	--	--	--	--	--
TtSB-1-4-COMP-2.5	2.5		8/26/2014	<0.005	<0.005	--	--	--	--	--	--	--
TtSB-1-0.5	0.5		8/26/2014	--	--	--	--	--	--	--	--	<b>5.2</b>
TtSB-2-0.5	0.5		8/26/2014	--	--	--	--	--	--	--	--	<b>9.3</b>
TtSB-3-0.5	0.5		8/26/2014	--	--	--	--	--	--	--	--	<b>7.5</b>
TtSB-4-0.5	0.5		8/26/2014	--	--	--	--	--	--	--	--	<3.0
TtSB-5-0.5	0.5	Shed 1: Lead, Pesticides, and Herbicides Assessment	8/26/2014	<0.005	<0.005	<0.030	--	--	--	--	--	<b>10</b>
TtSB-5-2.5	2.5		8/26/2014	<0.005	<0.005	--	--	--	--	--	--	--
TtSB-7-0.5	0.5	Empty Gas Can	8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-8-0.5	0.5	Waste/Debris Pile	8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-9-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-10-4.5	4.5	Abandoned 55-Gallon Drum	8/26/2014	--	--	--	--	<0.010	<10	<10	<10	--
TtSB-11-0.5	0.5	Pole-Mounted Transformer	8/26/2014	--	--	--	<0.010	--	--	--	--	--
TtSB-12-0.5	0.5	Site-Wide: Possible Use of Smudge Pots	8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-13-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-14-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-15-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-16-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-17-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-18-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
TtSB-19-0.5	0.5		8/26/2014	--	--	--	--	--	<10	<10	<10	--
<b>Screening Levels</b>				<b>Residential RSLs<sup>1</sup></b>		<b>Residential RSLs<sup>1</sup></b>	<b>Residential RSLs<sup>1</sup></b>	<b>Residential RSLs<sup>1</sup></b>	<b>Maximum Soil Screening Levels<sup>2</sup></b>			<b>CHHSL<sup>3</sup></b>
				1.8	1.6	Varies	Varies	Varies	100	100	1,000	80

Notes and abbreviations:

- USEPA United States Environmental Protection Agency
- VOC Volatile Organic Compound
- TPH Total Petroleum Hydrocarbon
- DDE Dichlorodiphenyldichloroethylene
- PCB Polychlorinated Biphenyl
- GRO Gasoline Range Organics
- DRO Diesel Range Organics
- ORO Oil Range Organics
- OCF Organo-chlorine Pesticides
- COMP Compositated sample
- mg/kg milligrams per kilogram
- RSLs Regional Screening Levels
- <0.005 Denotes value is less than the laboratory reporting limit
- Not analyzed
- Bold** Denotes detected concentrations above the laboratory reporting limits.

References:

- <sup>1</sup> EPA 2014. Region 9, May 2014 Regional Screening Levels for Chemical Contaminants at Superfund Sites.
- <sup>2</sup> California Regional Water Quality Control Board, 1996. Interim Site Assessment and Cleanup Guidebook.
- <sup>3</sup> Revised California Human Health Screening Level for lead.



**Table 2.** Summary of Soil Vapor Analytical Results

Sample ID	Sample Location and Rationale	Sample Depth (ft bgs)	Date Sampled	VOCs USEPA Method 8260B (µg/L)	Methane USEPA Method 8015B (µg/L)
TtSV-1	Potential Vapor Impacts Around Abandoned Drums, Gas Can, and Waste/Debris Pile	5.0	8/27/2014	<2.0	--*
TtSV-2		5.0	8/27/2014	<2.0	--*
TtSV-3		5.0	8/27/2014	<2.0	--
TtSV-4		5.0	8/27/2014	<2.0	--
TtSV-5		4.0	8/27/2014	<2.0	--
TtSV-6	Methane Near Waste/Debris Pile	5.0	8/27/2014	<2.0	<10
TtSV-6-DUP		5.0	8/27/2014	<2.0	<10
TtSV-7	Assess Shallow Soil Vapor for VOC Impacts	4.0	8/27/2014	<2.0	--
TtSV-8-1PV		3.0	8/27/2014	<2.0	--
TtSV-8-3PV		3.0	8/27/2014	<2.0	--
TtSV-8-10PV		3.0	8/27/2014	<2.0	--
TtSV-9		3.0	8/27/2014	<2.0	--
TtSV-10		4.0	8/27/2014	<2.0	--
TtSV-11		5.0	8/27/2014	<2.0	--

Notes and abbreviations:

- USEPA United States Environmental Protection Agency.
- VOC Volatile Organic Compound.
- µg/L Micrograms per liter.
- ft bgs feet below ground surface.
- DUP Indicates duplicate sample.
- PV Indicates number of purge volumes removed before sampling (1, 3, and 10); if no PV value is given, default value is 3.
- <2.0 Denotes value is less than the highest laboratory detection limit indicated (refer to laboratory report for individual analyte detection limits).
- Not analyzed.
- \* Not analyzed based on TtSV-6 methane results and absence of debris in the subsurface.



---

# Appendix A Soil Laboratory Analytical Reports



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05 September 2014

Mike Crews  
Tetra Tech -- Irvine  
17885 Von Karman Ave. #500  
Irvine, CA 92614  
RE: Amanda Estates

Enclosed are the results of analyses for samples received by the laboratory on 08/27/14 12:43. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daniel Chavez  
Project Manager



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 Lake Forest, California 92630  
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 949.297.5027 Fax

Tetra Tech -- Irvine  
 17885 Von Karman Ave. #500  
 Irvine CA, 92614

Project: Amanda Estates  
 Project Number: 194-5042  
 Project Manager: Mike Crews

**Reported:**  
 09/05/14 11:54

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TtSB-1-0.5	T141761-01	Soil	08/26/14 13:45	08/27/14 12:43
TtSB-2-0.5	T141761-03	Soil	08/26/14 13:00	08/27/14 12:43
TtSB-3-0.5	T141761-05	Soil	08/26/14 13:15	08/27/14 12:43
TtSB-4-0.5	T141761-07	Soil	08/26/14 13:28	08/27/14 12:43
TtSB-1-4-COMP-0.5	T141761-09	Soil	08/26/14 13:50	08/27/14 12:43
TtSB-1-4-COMP-2.5	T141761-10	Soil	08/26/14 13:51	08/27/14 12:43
TtSB-5-0.5	T141761-11	Soil	08/26/14 13:37	08/27/14 12:43
TtSB-5-2.5	T141761-12	Soil	08/26/14 13:38	08/27/14 12:43
TtSB-7-0.5	T141761-15	Soil	08/26/14 10:12	08/27/14 12:43
TtSB-8-0.5	T141761-17	Soil	08/26/14 11:16	08/27/14 12:43
TtSB-9-0.5	T141761-19	Soil	08/26/14 11:32	08/27/14 12:43
TtSB-10-4.5	T141761-21	Soil	08/26/14 09:50	08/27/14 12:43
TtSB-11-0.5	T141761-22	Soil	08/26/14 11:41	08/27/14 12:43
TtSB-12-0.5	T141761-24	Soil	08/26/14 10:58	08/27/14 12:43
TtSB-13-0.5	T141761-26	Soil	08/26/14 08:52	08/27/14 12:43
TtSB-14-0.5	T141761-28	Soil	08/26/14 08:37	08/27/14 12:43
TtSB-15-0.5	T141761-30	Soil	08/26/14 10:45	08/27/14 12:43
TtSB-16-0.5	T141761-32	Soil	08/26/14 09:20	08/27/14 12:43
TtSB-17-0.5	T141761-34	Soil	08/26/14 08:14	08/27/14 12:43
TtSB-18-0.5	T141761-36	Soil	08/26/14 09:46	08/27/14 12:43
T@SB-19-0.5	T141761-38	Soil	08/26/14 08:10	08/27/14 12:43

**DETECTIONS SUMMARY**

SunStar Laboratories, Inc.

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Tetra Tech -- Irvine  
17885 Von Karman Ave. #500  
Irvine CA, 92614

Project: Amanda Estates  
Project Number: 194-5042  
Project Manager: Mike Crews

**Reported:**  
09/05/14 11:54

**Sample ID:** TtSB-12-0.5

**Laboratory ID:** T141761-24

No Results Detected

**Sample ID:** TtSB-13-0.5

**Laboratory ID:** T141761-26

No Results Detected

**Sample ID:** TtSB-14-0.5

**Laboratory ID:** T141761-28

No Results Detected

**Sample ID:** TtSB-15-0.5

**Laboratory ID:** T141761-30

No Results Detected

**Sample ID:** TtSB-16-0.5

**Laboratory ID:** T141761-32

No Results Detected

**Sample ID:** TtSB-17-0.5

**Laboratory ID:** T141761-34

No Results Detected

**Sample ID:** TtSB-18-0.5

**Laboratory ID:** T141761-36

No Results Detected

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



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Tetra Tech -- Irvine  
17885 Von Karman Ave. #500  
Irvine CA, 92614

Project: Amanda Estates  
Project Number: 194-5042  
Project Manager: Mike Crews

**Reported:**  
09/05/14 11:54

**Sample ID:** T@SB-19-0.5

**Laboratory ID:** T141761-38

**No Results Detected**

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



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Tetra Tech -- Irvine 17885 Von Karman Ave. #500 Irvine CA, 92614	Project: Amanda Estates Project Number: 194-5042 Project Manager: Mike Crews	<b>Reported:</b> 09/05/14 11:54
--	--	------------------------------------

**TtSB-1-0.5**  
**T141761-01 (Soil)**

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

**Metals by EPA 6010B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	5.2	3.0	mg/kg	1	4082731	08/27/14	08/28/14	EPA 6010B	

SunStar Laboratories, Inc.

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**TtSB-2-0.5**  
**T141761-03 (Soil)**

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

**Metals by EPA 6010B**

<b>Lead</b>	<b>9.3</b>	3.0	mg/kg	1	4082731	08/27/14	08/28/14	EPA 6010B	
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**TtSB-3-0.5**  
**T141761-05 (Soil)**

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

**Metals by EPA 6010B**

<b>Lead</b>	<b>7.5</b>	3.0	mg/kg	1	4082731	08/27/14	08/28/14	EPA 6010B	
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**TtSB-4-0.5**  
**T141761-07 (Soil)**

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

**Metals by EPA 6010B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Lead	ND	3.0	mg/kg	1	4082731	08/27/14	08/28/14	EPA 6010B	

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Project: Amanda Estates  
 Project Number: 194-5042  
 Project Manager: Mike Crews

Reported:  
 09/05/14 11:54

**TtSB-1-4-COMP-0.5**  
**T141761-09 (Soil)**

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

**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	5.0	ug/kg	1	4082735	08/27/14	08/30/14	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
<b>gamma-Chlordane</b>	<b>24</b>	5.0	"	"	"	"	"	"	
<b>alpha-Chlordane</b>	<b>61</b>	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
<b>4,4'-DDE</b>	<b>120</b>	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene 75.1 % 35-140 " " " "

**Chlorinated Herbicides by EPA Method 8151A**

2,4,5-T	ND	5.00	ug/kg	1	4082813	08/28/14	09/02/14	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	

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--	--	------------------------------------

**TtSB-1-4-COMP-0.5**  
**T141761-09 (Soil)**

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

**Chlorinated Herbicides by EPA Method 8151A**

Dalapon	ND	30.0	ug/kg	1	4082813	08/28/14	09/02/14	8151	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		53.1 %		35-150	"	"	"	"	

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Daniel Chavez, Project Manager



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 Irvine CA, 92614

Project: Amanda Estates  
 Project Number: 194-5042  
 Project Manager: Mike Crews

Reported:  
 09/05/14 11:54

**TtSB-1-4-COMP-2.5**  
**T141761-10 (Soil)**

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

**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	5.0	ug/kg	1	4082735	08/27/14	08/30/14	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		70.7 %		35-140		"	"	"	"

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Tetra Tech -- Irvine 17885 Von Karman Ave. #500 Irvine CA, 92614	Project: Amanda Estates Project Number: 194-5042 Project Manager: Mike Crews	Reported: 09/05/14 11:54
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**TtSB-5-0.5**  
**T141761-11 (Soil)**

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

**Metals by EPA 6010B**

<b>Lead</b>	<b>10</b>	3.0	mg/kg	1	4082731	08/27/14	08/28/14	EPA 6010B	
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**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	5.0	ug/kg	1	4082735	08/27/14	08/30/14	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		66.5 %		35-140	"	"	"	"	

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



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Tetra Tech -- Irvine 17885 Von Karman Ave. #500 Irvine CA, 92614	Project: Amanda Estates Project Number: 194-5042 Project Manager: Mike Crews	Reported: 09/05/14 11:54
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**TtSB-5-0.5**  
**T141761-11 (Soil)**

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

**Chlorinated Herbicides by EPA Method 8151A**

2,4,5-T	ND	5.00	ug/kg	1	4082813	08/28/14	09/02/14	8151	
2,4,5-TP (Silvex)	ND	5.00	"	"	"	"	"	"	
2,4-D	ND	5.00	"	"	"	"	"	"	
2,4-DB	ND	5.00	"	"	"	"	"	"	
3,5-Dichlorobenzoic acid	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	5.00	"	"	"	"	"	"	
Acifluorfen	ND	5.00	"	"	"	"	"	"	
Bentazon	ND	5.00	"	"	"	"	"	"	
Chloramben	ND	5.00	"	"	"	"	"	"	
Dalapon	ND	30.0	"	"	"	"	"	"	
DCPA diacid	ND	5.00	"	"	"	"	"	"	
Dicamba	ND	5.00	"	"	"	"	"	"	
Dichloroprop	ND	5.00	"	"	"	"	"	"	
Dinoseb	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	5.00	"	"	"	"	"	"	
Picloram	ND	5.00	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		44.0 %	35-150		"	"	"	"	

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**TtSB-5-2.5**  
**T141761-12 (Soil)**

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

**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	5.0	ug/kg	1	4082735	08/27/14	08/30/14	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4'-DDE	ND	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4'-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4'-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		66.3 %		35-140		"	"	"	"

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**TtSB-7-0.5**  
**T141761-15 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		88.5 %		65-135		"	"	"	"

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**TtSB-8-0.5**  
**T141761-17 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		85.1 %		65-135		"	"	"	"

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**TtSB-9-0.5**  
**T141761-19 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		89.0 %		65-135	"	"	"	"	

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Project: Amanda Estates  
 Project Number: 194-5042  
 Project Manager: Mike Crews

Reported:  
 09/05/14 11:54

**TtSB-10-4.5**  
**T141761-21 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		86.1 %	65-135		"	"	"	"	

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

Bromobenzene	ND	5.0	ug/kg	1	4082734	08/27/14	08/28/14	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	

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Project: Amanda Estates  
 Project Number: 194-5042  
 Project Manager: Mike Crews

Reported:  
 09/05/14 11:54

**TtSB-10-4.5**  
**T141761-21 (Soil)**

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
cis-1,2-Dichloroethene	ND	5.0	ug/kg	1	4082734	08/27/14	08/28/14	EPA 8260B	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	

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**TtSB-10-4.5**  
**T141761-21 (Soil)**

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
o-Xylene	ND	5.0	ug/kg	1	4082734	08/27/14	08/28/14	EPA 8260B
Surrogate: 4-Bromofluorobenzene	91.6 %	81.2-123			"	"	"	"
Surrogate: Dibromofluoromethane	130 %	95.7-135			"	"	"	"
Surrogate: Toluene-d8	89.6 %	85.5-116			"	"	"	"

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**TtSB-11-0.5**  
**T141761-22 (Soil)**

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

**Polychlorinated Biphenyls by EPA Method 8082**

PCB-1016	ND	10	ug/kg	1	4082733	08/27/14	08/30/14	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
<i>Surrogate: Tetrachloro-meta-xylene</i>		172 %	35-140		"	"	"	"	S-12

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**TtSB-12-0.5**  
**T141761-24 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		87.8 %		65-135		"	"	"	"

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**TtSB-13-0.5**  
**T141761-26 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		<i>91.4 %</i>		<i>65-135</i>					

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**TtSB-14-0.5**  
**T141761-28 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		85.3 %		65-135		"	"	"	"

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**TtSB-15-0.5**  
**T141761-30 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		91.8 %		65-135		"	"	"	"

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**TtSB-16-0.5**  
**T141761-32 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		99.1 %		65-135		"	"	"	"

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**TtSB-17-0.5**  
**T141761-34 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		104 %		65-135		"	"	"	"

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Tetra Tech -- Irvine 17885 Von Karman Ave. #500 Irvine CA, 92614	Project: Amanda Estates Project Number: 194-5042 Project Manager: Mike Crews	<b>Reported:</b> 09/05/14 11:54
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**TtSB-18-0.5**  
**T141761-36 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		91.2 %		65-135		"	"	"	"

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**T@SB-19-0.5**  
**T141761-38 (Soil)**

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

**Extractable Petroleum Hydrocarbons by 8015C**

C6-C12 (GRO)	ND	10	mg/kg	1	4082817	08/28/14	08/30/14	EPA 8015C	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		86.7 %		65-135		"	"	"	"

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 Project Number: 194-5042  
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Reported:  
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082817 - EPA 3550B GC**

**Blank (4082817-BLK1)**

Prepared: 08/28/14 Analyzed: 08/30/14

C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	93.2		"	100		93.2	65-135			

**LCS (4082817-BS1)**

Prepared: 08/28/14 Analyzed: 08/30/14

C13-C28 (DRO)	460	10	mg/kg	500		91.4	75-125			
Surrogate: p-Terphenyl	91.0		"	100		91.0	65-135			

**Matrix Spike (4082817-MS1)**

Source: T141761-15

Prepared: 08/28/14 Analyzed: 08/30/14

C13-C28 (DRO)	440	10	mg/kg	500	ND	88.3	75-125			
Surrogate: p-Terphenyl	88.4		"	100		88.4	65-135			

**Matrix Spike Dup (4082817-MSD1)**

Source: T141761-15

Prepared: 08/28/14 Analyzed: 08/30/14

C13-C28 (DRO)	460	10	mg/kg	500	ND	92.6	75-125	4.72	20	
Surrogate: p-Terphenyl	88.0		"	100		88.0	65-135			

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**Metals by EPA 6010B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082731 - EPA 3051**

<b>Blank (4082731-BLK1)</b>				Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	ND	3.0	mg/kg							
<b>LCS (4082731-BS1)</b>				Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	108	3.0	mg/kg	100		108	75-125			
<b>Matrix Spike (4082731-MS1)</b>				Source: T141759-02 Prepared: 08/27/14 Analyzed: 08/28/14						
Lead	106	3.0	mg/kg	100	2.14	104	75-125			

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Reported:  
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**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082735 - EPA 3550 ECD/GCMS**

**Blank (4082735-BLK1)**

Prepared: 08/27/14 Analyzed: 08/30/14

alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4'-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4'-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4'-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							

*Surrogate: Tetrachloro-meta-xylene*      7.35      "      10.0      73.5      35-140

**LCS (4082735-BS1)**

Prepared: 08/27/14 Analyzed: 08/30/14

gamma-BHC (Lindane)	52.2	5.0	ug/kg	100		52.2	40-120
Heptachlor	53.2	5.0	"	100		53.2	40-120
Aldrin	51.0	5.0	"	100		51.0	40-120
Dieldrin	58.8	5.0	"	100		58.8	40-120
Endrin	58.7	5.0	"	100		58.7	40-120
4,4'-DDT	68.5	5.0	"	100		68.5	33-147

*Surrogate: Tetrachloro-meta-xylene*      6.81      "      10.0      68.1      35-140

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**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082735 - EPA 3550 ECD/GCMS**

<b>Matrix Spike (4082735-MS1)</b>		<b>Source: T141761-09</b>			Prepared: 08/27/14		Analyzed: 08/30/14	
gamma-BHC (Lindane)	59.2	5.0	ug/kg	100	ND	59.2	30-120	
Heptachlor	61.7	5.0	"	100	ND	61.7	30-120	
Aldrin	56.3	5.0	"	100	ND	56.3	30-120	
Dieldrin	68.2	5.0	"	100	ND	68.2	30-120	
Endrin	67.0	5.0	"	100	ND	67.0	30-120	
4,4'-DDT	50.2	5.0	"	100	ND	50.2	30-120	
<i>Surrogate: Tetrachloro-meta-xylene</i>	7.82		"	10.0		78.2	35-140	
<b>Matrix Spike Dup (4082735-MSD1)</b>		<b>Source: T141761-09</b>			Prepared: 08/27/14		Analyzed: 08/30/14	
gamma-BHC (Lindane)	56.5	5.0	ug/kg	100	ND	56.5	30-120	4.63 30
Heptachlor	58.1	5.0	"	100	ND	58.1	30-120	5.98 30
Aldrin	53.6	5.0	"	100	ND	53.6	30-120	4.83 30
Dieldrin	66.2	5.0	"	100	ND	66.2	30-120	2.91 30
Endrin	63.2	5.0	"	100	ND	63.2	30-120	5.86 30
4,4'-DDT	85.5	5.0	"	100	ND	85.5	30-120	52.1 30
<i>Surrogate: Tetrachloro-meta-xylene</i>	6.52		"	10.0		65.2	35-140	

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**Polychlorinated Biphenyls by EPA Method 8082 - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082733 - EPA 3550 ECD/GCMS**

**Blank (4082733-BLK1)**

Prepared: 08/27/14 Analyzed: 08/30/14

PCB-1016	ND	10	ug/kg							
PCB-1221	ND	10	"							
PCB-1232	ND	10	"							
PCB-1242	ND	10	"							
PCB-1248	ND	10	"							
PCB-1254	ND	10	"							
PCB-1260	ND	10	"							
Surrogate: Tetrachloro-meta-xylene	1.58		"	1.00		158	35-140			S-12

**LCS (4082733-BS1)**

Prepared: 08/27/14 Analyzed: 08/30/14

PCB-1016	102	10	ug/kg	100		102	40-130			
PCB-1260	55.8	10	"	100		55.8	40-130			
Surrogate: Tetrachloro-meta-xylene	1.92		"	1.00		192	35-140			S-12

**Matrix Spike (4082733-MS1)**

Source: T141761-22

Prepared: 08/27/14 Analyzed: 08/30/14

PCB-1016	44.4	10	ug/kg	100	ND	44.4	40-130			
PCB-1260	44.8	10	"	100	ND	44.8	40-130			
Surrogate: Tetrachloro-meta-xylene	1.46		"	1.00		146	35-140			S-12

**Matrix Spike Dup (4082733-MSD1)**

Source: T141761-22

Prepared: 08/27/14 Analyzed: 08/30/14

PCB-1016	41.6	10	ug/kg	100	ND	41.6	40-130	6.63	30	
PCB-1260	41.3	10	"	100	ND	41.3	40-130	8.22	30	
Surrogate: Tetrachloro-meta-xylene	1.28		"	1.00		128	35-140			

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Reported:  
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**Chlorinated Herbicides by EPA Method 8151A - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082813 - EPA 3550 ECD/GCMS**

**Blank (4082813-BLK1)**

Prepared: 08/28/14 Analyzed: 09/02/14

2,4,5-T	ND	5.00	ug/kg							
2,4,5-TP (Silvex)	ND	5.00	"							
2,4-D	ND	5.00	"							
2,4-DB	ND	5.00	"							
3,5-Dichlorobenzoic acid	ND	5.00	"							
4-Nitrophenol	ND	5.00	"							
Acifluorfen	ND	5.00	"							
Bentazon	ND	5.00	"							
Chloramben	ND	5.00	"							
Dalapon	ND	30.0	"							
DCPA diacid	ND	5.00	"							
Dicamba	ND	5.00	"							
Dichloroprop	ND	5.00	"							
Dinoseb	ND	5.00	"							
Pentachlorophenol	ND	5.00	"							
Picloram	ND	5.00	"							

Surrogate: 2,4-DCAA

14.3 " 20.0 71.6 35-150

**LCS (4082813-BS1)**

Prepared: 08/28/14 Analyzed: 09/02/14

2,4,5-T	128	5.00	ug/kg	100		128	20-150			
2,4,5-TP (Silvex)	133	5.00	"	100		133	20-150			
2,4-D	147	5.00	"	100		147	20-150			

Surrogate: 2,4-DCAA

17.4 " 20.0 87.2 35-150

**LCS Dup (4082813-BSD1)**

Prepared: 08/28/14 Analyzed: 09/02/14

2,4,5-T	102	5.00	ug/kg	100		102	20-150	22.6	30	
2,4,5-TP (Silvex)	102	5.00	"	100		102	20-150	27.0	30	
2,4-D	99.0	5.00	"	100		99.0	20-150	38.8	30	QM-14

Surrogate: 2,4-DCAA

11.7 " 20.0 58.5 35-150

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

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082734 - EPA 5030 GCMS**

**Blank (4082734-BLK1)**

Prepared: 08/27/14 Analyzed: 08/28/14

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082734 - EPA 5030 GCMS**

**Blank (4082734-BLK1)**

Prepared: 08/27/14 Analyzed: 08/28/14

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: 4-Bromofluorobenzene	38.2		"	40.0		95.4	81.2-123			
Surrogate: Dibromofluoromethane	51.0		"	40.0		128	95.7-135			
Surrogate: Toluene-d8	37.8		"	40.0		94.5	85.5-116			

**LCS (4082734-BS1)**

Prepared: 08/27/14 Analyzed: 08/28/14

Chlorobenzene	113	5.0	ug/kg	100		113	75-125			
1,1-Dichloroethene	119	5.0	"	100		119	75-125			
Trichloroethene	116	5.0	"	100		116	75-125			
Benzene	118	5.0	"	100		118	75-125			
Toluene	91.5	5.0	"	100		91.5	75-125			
Surrogate: 4-Bromofluorobenzene	42.3		"	40.0		106	81.2-123			
Surrogate: Dibromofluoromethane	51.0		"	40.0		127	95.7-135			
Surrogate: Toluene-d8	36.6		"	40.0		91.4	85.5-116			

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Project: Amanda Estates  
 Project Number: 194-5042  
 Project Manager: Mike Crews

Reported:  
 09/05/14 11:54

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

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4082734 - EPA 5030 GCMS**

**Matrix Spike (4082734-MS1)**

Source: T141761-21

Prepared: 08/27/14 Analyzed: 08/28/14

Chlorobenzene	118	5.0	ug/kg	100	ND	118	75-125			
1,1-Dichloroethene	118	5.0	"	100	ND	118	75-125			
Trichloroethene	119	5.0	"	100	ND	119	75-125			
Benzene	111	5.0	"	100	ND	111	75-125			
Toluene	94.3	5.0	"	100	ND	94.3	75-125			
Surrogate: 4-Bromofluorobenzene	42.0		"	40.0		105	81.2-123			
Surrogate: Dibromofluoromethane	53.2		"	40.0		133	95.7-135			
Surrogate: Toluene-d8	35.9		"	40.0		89.8	85.5-116			

**Matrix Spike Dup (4082734-MSD1)**

Source: T141761-21

Prepared: 08/27/14 Analyzed: 08/28/14

Chlorobenzene	117	5.0	ug/kg	100	ND	117	75-125	0.849	20	
1,1-Dichloroethene	109	5.0	"	100	ND	109	75-125	7.59	20	
Trichloroethene	118	5.0	"	100	ND	118	75-125	0.762	20	
Benzene	109	5.0	"	100	ND	109	75-125	1.68	20	
Toluene	102	5.0	"	100	ND	102	75-125	7.40	20	
Surrogate: 4-Bromofluorobenzene	42.0		"	40.0		105	81.2-123			
Surrogate: Dibromofluoromethane	51.9		"	40.0		130	95.7-135			
Surrogate: Toluene-d8	35.1		"	40.0		87.8	85.5-116			

SunStar Laboratories, Inc.

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

Daniel Chavez, Project Manager

Tetra Tech -- Irvine 17885 Von Karman Ave. #500 Irvine CA, 92614	Project: Amanda Estates Project Number: 194-5042 Project Manager: Mike Crews	<b>Reported:</b> 09/05/14 11:54
--	--	------------------------------------

### Notes and Definitions

- S-12 The surrogate recovery in the LCS/LCSD, MS and/or MSD was bias high. The surrogate recovery in associated samples was bias high and the samples were ND. No negative impact on data is expected.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-14 The LCS and LCSD were above acceptance criteria. The method blank and sample were ND for the analyte in question. The CCV was within acceptance criteria. No negative impact on data is expected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

SunStar Laboratories, Inc.



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

Daniel Chavez, Project Manager

SunStar Laboratories, Inc.  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 949-297-5020

### Chain of Custody Record

Client: TRITECH  
 Address: 17885 VAN KARMAR #500 IRVINE, CA  
 Phone: 949-809-5000 Fax: ---  
 Project Manager: MIKE CROW

Date: AUG. 26, 2014 Page: 1 Of 3  
 Project Name: ARMAND ESTABES  
 Collector: D. McALISTER Client Project #: 194-5042  
 Batch #: TH1761 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals (Pb only)	HOLD	8081A - PEST.	8151 - HERB.	Laboratory ID #	Comments/Preservative	Total # of containers
TC5B-1-0.5	8-26-14	1345	SOIL	ACETATE								X					01		
TC5B-1-2.5		1346											X				02		
TC5B-2-0.5		1300											X				03		
TC5B-2-2.5		1301											X				04		
TC5B-3-0.5		1315											X				05		
TC5B-3-2.5		1316											X				06		
TC5B-4-0.5		1328											X				07		
TC5B-4-2.5		1329											X				08		
TC5B-1-4-comp-0.5		1350	SOIL	JAR									X		X	X	09		
TC5B-1-4-comp-2.5		1351		JAR									X		X	X	10		
TC5B-5-0.5		1337		ACETATE									X	X	X	X	11		
TC5B-5-2.5		1338											X	X	X	X	12		
TC5B-6-0.5		1138											X	X	X	X	13		
TC5B-6-2.5		1139											X	X	X	X	14		
TC5B-7-0.5		1012											X	X	X	X	15		
Relinquished by: (signature)		Date / Time		Received by: (signature)		Date / Time		Total # of containers		Notes									
		8-27-14 1243				8/27/14 1243		4.0		Chain of Custody seals Y/N/NA		Y							
Relinquished by: (signature)		Date / Time		Received by: (signature)		Date / Time		Seals intact? Y/N/NA		Received good condition/cold									
								Y		4.0									
Relinquished by: (signature)		Date / Time		Received by: (signature)		Date / Time		Turn around time: 3-DAY											

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

COC 134643

SunStar Laboratories, Inc.  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 949-297-5020

### Chain of Custody Record

Client: TETRA TECH  
 Address: 17885 VON KARLMAN #500 IRVINE, CA  
 Phone: 949-809-5000 Fax: —  
 Project Manager: MIKE CREWS

Date: Aug 26, 2014 Page: 2 Of 3  
 Project Name: AMANDA ESTATES  
 Collector: AMPLURER Client Project #:             
 Batch #: 7141761 EDF #:           

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	HOLD	8082-PCBs	Laboratory ID #	Comments/Preservative	Total # of containers			
TCSB-7-2.5	8-26-14	1013	SOIL	ACETATE										X		16					
TCSB-8-0.5	[Signature]	1116	[Signature]	[Signature]								X		X		17					
TCSB-8-2.5		1119												X		X		18			
TCSB-9-0.5		1132													X		X		19		
TCSB-9-2.5		1133														X			20		
<del>TCSB-10-0.5</del>																					
TCSB-10-2.5		980						X							X		X		21		
TCSB-11-0.5		1141															X		22		
TCSB-11-2.5		1142															X		23		
TCSB-12-0.5		1058													X		X		24		
TCSB-12-2.5		1059															X		25		
TCSB-13-0.5		852													X		X		26		
TCSB-13-2.5		853															X		27		
TCSB-14-0.5		837													X		X		28		
TCSB-14-2.5		838															X		29		

Relinquished by: (signature) <u>[Signature]</u>	Date / Time <u>8-27-14 1243</u>	Received by: (signature) <u>[Signature]</u>	Date / Time <u>8/27/14 1243</u>	Total # of containers		Notes
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Chain of Custody seals Y/N/NA	<u>Y</u>	
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Seals intact? Y/N/NA	<u>Y/NA</u>	
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Received good condition/cold	<u>Y</u> 4.0	
				Turn around time: <u>3-DAY</u>		

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

COC 134644

SunStar Laboratories, Inc.  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 949-297-5020

### Chain of Custody Record

Client: TETRATECH  
 Address: 17885 VON KARLMAN #500 IRVINE, CA  
 Phone: 949-809-5000 Fax: —  
 Project Manager: MIKE CREWS

Date: AUG 26, 2014 Page: 3 Of 3  
 Project Name: AMANDA ESTATES  
 Collector: D. McALISTER Client Project #: 194-5042  
 Batch #: T141761 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	Laboratory ID #	Comments/Preservative	Total # of containers
TESB-15-0.5	8-26-14	8:10	SOIL	MCETATE								X		30		
TESB-15-2.5		8:10											X	31		
TESB-16-0.5		9:20										X		32		
TESB-16-2.5		9:21										X		33		
TESB-17-0.5		8:14										X		34		
TESB-17-2.5		8:15										X		35		
TESB-18-0.5		9:46										X		36		
TESB-18-2.5		9:47										X		37		
TESB-19-0.5		8:10										X		38		
TESB-19-2.5		8:12										X		39		

Relinquished by: (signature) <i>[Signature]</i>	Date / Time 8-27-14 12:43	Received by: (signature) <i>[Signature]</i>	Date / Time 8/27/14 12:43	Total # of containers	Notes 4.0
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Chain of Custody seals Y/N/NA Seals intact? Y/N/NA	
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time	Received good condition/cold	
				Turn around time: <u>3-DAY</u>	

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

COC 134645

## SAMPLE RECEIVING REVIEW SHEET

BATCH # T141761

Client Name: TETRA TECH

Project: AMANDA ESTATES

Received by: Dan

Date/Time Received: 8.27.14 / 12:43

Delivered by :  Client  SunStar Courier  GSO  FedEx  Other \_\_\_\_\_

Total number of coolers received 1 Temp criteria = 6°C > 0°C (no frozen containers)

Temperature: cooler #1 4.2 °C +/- the CF (- 0.2°C) = 4.0 °C corrected temperature

cooler #2 \_\_\_\_\_ °C +/- the CF (- 0.2°C) = \_\_\_\_\_ °C corrected temperature

cooler #3 \_\_\_\_\_ °C +/- the CF (- 0.2°C) = \_\_\_\_\_ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.  Yes  No\*  N/A

Custody Seals Intact on Cooler/Sample  Yes  No\*  N/A

Sample Containers Intact  Yes  No\*

Sample labels match COC ID's  Yes  No\*

Total number of containers received match COC  Yes  No\*

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

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

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

\* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date SL 8.27.14

Comments:

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# **Appendix B Soil Vapor Laboratory Analytical Reports**



## A & R Laboratories

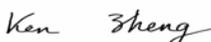
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### CASE NARRATIVE

Authorized Signature Name / Title (print)	Ken Zheng, President
Signature / Date	 Ken Zheng, President 08/29/2014 19:44:45
Laboratory Job No. (Certificate of Analysis No.)	1408-00111
Project Name / No.	2115 Amanda Ln., Escondido, CA 1108157
Dates Sampled (from/to)	08/27/14 To 08/27/14
Dates Received (from/to)	08/27/14 To 08/27/14
Dates Reported (from/to)	08/29/14 To 8/29/2014
Chains of Custody Received	Yes

Comments:

Subcontracting	
Organic Analyses	No analyses sub-contracted
Other Analyses	No analyses sub-contracted

Sample Condition(s)

All samples intact

Positive Results (Organic Compounds)

Sample	Analyte	Result	Qual	Units	RL	Sample	Analyte	Result	Qual	Units	RL
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## CERTIFICATE OF ANALYSIS

**1408-00111**

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 001 TtSV-8-1PV								Date & Time Sampled: 08/27/14 @ 11:04		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 1										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	11:23	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:23	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:23	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:23	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:23	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:23	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:23	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:23	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:23	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE

The data and information on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon condition that it is not to be reproduced, wholly or in part, for advertising or other purposes without approval from the laboratory.

USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research



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## CERTIFICATE OF ANALYSIS

**1408-00111**

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 001 TtSV-8-1PV								Date & Time Sampled: 08/27/14 @ 11:04		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 1										
.....continued										
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:23	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	11:23	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:23	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:23	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:23	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE



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**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
 Date Received 08/27/14  
 Invoice No. 72196  
 Cust # T081  
 Permit Number  
 Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 001 TtSV-8-1PV Date & Time Sampled: 08/27/14 @ 11:04										
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 1										
.....continued										
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	11:23	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:23	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:23	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:23	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	11:23	HXE
[VOC Surrogates]										
Dibromofluoromethane	97		%REC	EPA 8260B			70-130	08/27/14	11:23	HXE
Toluene-D8	101		%REC	EPA 8260B			70-130	08/27/14	11:23	HXE
Bromofluorobenzene	87		%REC	EPA 8260B			70-130	08/27/14	11:23	HXE
Sample: 002 TtSV-8-3PV Date & Time Sampled: 08/27/14 @ 11:29										
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	11:48	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:48	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE



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## CERTIFICATE OF ANALYSIS

**1408-00111**

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 002 TtSV-8-3PV								Date & Time Sampled: 08/27/14 @ 11:29		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:48	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:48	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:48	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:48	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:48	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:48	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:48	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE

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### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 002 TtSV-8-3PV								Date & Time Sampled: 08/27/14 @ 11:29		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:48	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	11:48	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	11:48	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:48	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:48	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	11:48	HXE

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**TETRA TECH, INC.**  
**MICHAEL CREWS**  
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**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 002 TtSV-8-3PV					Date & Time Sampled:		08/27/14		@	11:29
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	11:48	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	11:48	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	11:48	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	11:48	HXE
[VOC Surrogates]										
Dibromofluoromethane		95	%REC	EPA 8260B			70-130	08/27/14	11:48	HXE
Toluene-D8		101	%REC	EPA 8260B			70-130	08/27/14	11:48	HXE
Bromofluorobenzene		86	%REC	EPA 8260B			70-130	08/27/14	11:48	HXE
Sample: 003 TtSV-8-10PV					Date & Time Sampled:		08/27/14		@	11:53
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 10										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	12:14	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	12:14	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	12:14	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	12:14	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	12:14	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	12:14	HXE

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**MICHAEL CREWS**  
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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 003 TtSV-8-10PV								Date & Time Sampled: 08/27/14 @ 11:53		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 10										
.....continued										
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	12:14	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	12:14	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	12:14	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Diisopropyl Ether (DIPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE



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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 003 TtSV-8-10PV								Date & Time Sampled: 08/27/14 @ 11:53		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 10										
.....continued										
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	12:14	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	12:14	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	12:14	HXE
Methyl-t-butyl Ether (MTBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	12:14	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	12:14	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	12:14	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	12:14	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	12:14	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	12:14	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	12:14	HXE



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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 003 TtSV-8-10PV Date & Time Sampled: 08/27/14 @ 11:53 Sample Matrix: Soil Vapor Purge Volume Sampled: 10 .....continued										
[VOC Surrogates]										
Dibromofluoromethane	97	%REC		EPA 8260B			70-130	08/27/14	12:14	HXE
Toluene-D8	105	%REC		EPA 8260B			70-130	08/27/14	12:14	HXE
Bromofluorobenzene	88	%REC		EPA 8260B			70-130	08/27/14	12:14	HXE
Sample: 004 TtSV-7 Date & Time Sampled: 08/27/14 @ 12:45 Sample Matrix: Soil Vapor Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	1:03	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:03	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:03	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:03	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:03	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:03	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:03	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:03	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE

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**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 004 TtSV-7								Date & Time Sampled: 08/27/14 @ 12:45		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:03	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:03	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	1:03	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:03	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE

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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 004 TtSV-7								Date & Time Sampled:		08/27/14 @ 12:45
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:03	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:03	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	1:03	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:03	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:03	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:03	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	1:03	HXE
[VOC Surrogates]										
Dibromofluoromethane	96		%REC	EPA 8260B			70-130	08/27/14	1:03	HXE
Toluene-D8	102		%REC	EPA 8260B			70-130	08/27/14	1:03	HXE
Bromofluorobenzene	88		%REC	EPA 8260B			70-130	08/27/14	1:03	HXE

Sample: 005 TtSV-9  
Sample Matrix: Soil Vapor

Date & Time Sampled: 08/27/14 @ 13:11



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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
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Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 005 TtSV-9								Date & Time Sampled: 08/27/14 @ 13:11		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	1:31	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:31	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:31	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:31	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:31	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:31	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:31	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:31	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:31	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE

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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
 Date Received 08/27/14  
 Invoice No. 72196  
 Cust # T081  
 Permit Number  
 Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 005 TtSV-9								Date & Time Sampled: 08/27/14 @ 13:11		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:31	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	1:31	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:31	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:31	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:31	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE



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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 005 TtSV-9								Date & Time Sampled:		08/27/14 @ 13:11
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	1:31	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:31	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:31	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:31	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	1:31	HXE
[VOC Surrogates]										
Dibromofluoromethane	102		%REC	EPA 8260B			70-130	08/27/14	1:31	HXE
Toluene-D8	106		%REC	EPA 8260B			70-130	08/27/14	1:31	HXE
Bromofluorobenzene	90		%REC	EPA 8260B			70-130	08/27/14	1:31	HXE
Sample: 006 TtSV-11								Date & Time Sampled:		08/27/14 @ 13:37
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	1:57	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:57	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE



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## CERTIFICATE OF ANALYSIS

**1408-00111**

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 006 TtSV-11								Date & Time Sampled: 08/27/14 @ 13:37		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:57	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:57	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:57	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:57	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:57	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:57	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:57	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE

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Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 006 TtSV-11								Date & Time Sampled: 08/27/14 @ 13:37		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:57	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	1:57	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	1:57	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:57	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:57	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	1:57	HXE



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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**

**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 006 TtSV-11								Date & Time Sampled:		08/27/14 @ 13:37
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	1:57	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	1:57	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	1:57	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	1:57	HXE
[VOC Surrogates]										
Dibromofluoromethane	100		%REC	EPA 8260B			70-130	08/27/14	1:57	HXE
Toluene-D8	107		%REC	EPA 8260B			70-130	08/27/14	1:57	HXE
Bromofluorobenzene	91		%REC	EPA 8260B			70-130	08/27/14	1:57	HXE
Sample: 007 TtSV-10								Date & Time Sampled:		08/27/14 @ 13:58
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	2:22	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	2:22	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	2:22	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	2:22	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	2:22	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	2:22	HXE

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### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 007 TtSV-10								Date & Time Sampled: 08/27/14 @ 13:58		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	2:22	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	2:22	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	2:22	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Diisopropyl Ether (DIPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE

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**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
 Date Received 08/27/14  
 Invoice No. 72196  
 Cust # T081  
 Permit Number  
 Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 007 TtSV-10								Date & Time Sampled: 08/27/14 @ 13:58		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	2:22	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	2:22	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	2:22	HXE
Methyl-t-butyl Ether (MTBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	2:22	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	2:22	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	2:22	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	2:22	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	2:22	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	2:22	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	2:22	HXE



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Date Reported 08/29/14  
Date Received 08/27/14  
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Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 007 TtSV-10 Sample Matrix: Soil Vapor Purge Volume Sampled: 3 .....continued Date & Time Sampled: 08/27/14 @ 13:58										
[VOC Surrogates]										
Dibromofluoromethane	96	%REC		EPA 8260B			70-130	08/27/14	2:22	HXE
Toluene-D8	105	%REC		EPA 8260B			70-130	08/27/14	2:22	HXE
Bromofluorobenzene	87	%REC		EPA 8260B			70-130	08/27/14	2:22	HXE
Sample: 008 TtSV-1 Sample Matrix: Soil Vapor Purge Volume Sampled: 3 Date & Time Sampled: 08/27/14 @ 14:28										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/29/14	7:31	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE



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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
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Invoice No. 72196  
Cust # T081  
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Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 008 TtSV-1								Date & Time Sampled: 08/27/14 @ 14:28		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE

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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**

**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech	
Sample: 008 TtSV-1								Date & Time Sampled:	08/27/14	@	14:28
Sample Matrix: Soil Vapor											
Purge Volume Sampled: 3											
.....continued											
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE	
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE	
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/29/14	7:31	HXE	
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE	
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE	
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
[VOC Vapor Sampling Tracer]											
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/29/14	7:31	HXE	
[VOC Surrogates]											
Dibromofluoromethane	95		%REC	EPA 8260B			70-130	08/29/14	7:31	HXE	
Toluene-D8	101		%REC	EPA 8260B			70-130	08/29/14	7:31	HXE	
Bromofluorobenzene	86		%REC	EPA 8260B			70-130	08/29/14	7:31	HXE	

Sample: 009 TtSV-2  
Sample Matrix: Soil Vapor

Date & Time Sampled: 08/27/14 @ 14:55



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**1408-00111**

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech	
Sample: 009 TtSV-2								Date & Time Sampled:	08/27/14	@	14:55
Sample Matrix: Soil Vapor											
Purge Volume Sampled: 3											
[VOCs by GCMS]											
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/29/14	7:31	HXE	
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE	
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE	
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE	
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE	
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE	
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE	
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE	
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE	
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	

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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 009 TtSV-2								Date & Time Sampled: 08/27/14 @ 14:55		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/29/14	7:31	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/29/14	7:31	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE

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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech	
Sample: 009 TtSV-2								Date & Time Sampled:		08/27/14 @ 14:55	
Sample Matrix: Soil Vapor											
Purge Volume Sampled: 3											
.....continued											
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/29/14	7:31	HXE	
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/29/14	7:31	HXE	
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/29/14	7:31	HXE	
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/29/14	7:31	HXE	
[VOC Vapor Sampling Tracer]											
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/29/14	7:31	HXE	
[VOC Surrogates]											
Dibromofluoromethane	102		%REC	EPA 8260B			70-130	08/29/14	7:31	HXE	
Toluene-D8	106		%REC	EPA 8260B			70-130	08/29/14	7:31	HXE	
Bromofluorobenzene	90		%REC	EPA 8260B			70-130	08/29/14	7:31	HXE	
Sample: 010 TtSV-3								Date & Time Sampled:		08/27/14 @ 15:17	
Sample Matrix: Soil Vapor											
Purge Volume Sampled: 3											
[VOCs by GCMS]											
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	3:38	HXE	
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE	
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	3:38	HXE	
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE	
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE	
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE	
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE	



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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 010 TtSV-3								Date & Time Sampled: 08/27/14 @ 15:17		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	3:38	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	3:38	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	3:38	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	3:38	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	3:38	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	3:38	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	3:38	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE

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Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 010 TtSV-3								Date & Time Sampled: 08/27/14 @ 15:17		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	3:38	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	3:38	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	3:38	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	3:38	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	3:38	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	3:38	HXE



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Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 010 TtSV-3 Date & Time Sampled: 08/27/14 @ 15:17										
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	3:38	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	3:38	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	3:38	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	3:38	HXE
[VOC Surrogates]										
Dibromofluoromethane	104		%REC	EPA 8260B			70-130	08/27/14	3:38	HXE
Toluene-D8	106		%REC	EPA 8260B			70-130	08/27/14	3:38	HXE
Bromofluorobenzene	88		%REC	EPA 8260B			70-130	08/27/14	3:38	HXE
Sample: 011 TtSV-4 Date & Time Sampled: 08/27/14 @ 15:40										
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	4:02	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:02	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:02	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:02	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:02	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:02	HXE



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**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
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Date Reported 08/29/14  
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 Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 011 TtSV-4								Date & Time Sampled: 08/27/14 @ 15:40		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:02	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:02	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:02	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Diisopropyl Ether (DIPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE



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Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 011 TtSV-4								Date & Time Sampled: 08/27/14 @ 15:40		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:02	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	4:02	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:02	HXE
Methyl-t-butyl Ether (MTBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:02	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:02	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	4:02	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:02	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:02	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:02	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	4:02	HXE

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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 011 TtSV-4 Date & Time Sampled: 08/27/14 @ 15:40 Sample Matrix: Soil Vapor Purge Volume Sampled: 3 .....continued										
[VOC Surrogates]										
Dibromofluoromethane	97	%REC		EPA 8260B			70-130	08/27/14	4:02	HXE
Toluene-D8	103	%REC		EPA 8260B			70-130	08/27/14	4:02	HXE
Bromofluorobenzene	88	%REC		EPA 8260B			70-130	08/27/14	4:02	HXE
Sample: 012 TtSV-5 Date & Time Sampled: 08/27/14 @ 15:59 Sample Matrix: Soil Vapor Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	4:33	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:33	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:33	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:33	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:33	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:33	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:33	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:33	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE

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### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 012 TtSV-5								Date & Time Sampled: 08/27/14 @ 15:59		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:33	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:33	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:33	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE



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## CERTIFICATE OF ANALYSIS

### 1408-00111

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 012 TtSV-5								Date & Time Sampled: 08/27/14 @ 15:59		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:33	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:33	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	4:33	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:33	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:33	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:33	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	4:33	HXE
[VOC Surrogates]										
Dibromofluoromethane	98		%REC	EPA 8260B			70-130	08/27/14	4:33	HXE
Toluene-D8	103		%REC	EPA 8260B			70-130	08/27/14	4:33	HXE
Bromofluorobenzene	86		%REC	EPA 8260B			70-130	08/27/14	4:33	HXE

Sample: 013 TtSV-6  
Sample Matrix: Soil Vapor

Date & Time Sampled: 08/27/14 @ 16:31



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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 013 TtSV-6								Date & Time Sampled: 08/27/14 @ 16:31		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	4:58	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:58	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:58	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:58	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:58	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:58	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:58	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:58	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:58	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE

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## CERTIFICATE OF ANALYSIS

**1408-00111**

**TETRA TECH, INC.**  
**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
 Date Received 08/27/14  
 Invoice No. 72196  
 Cust # T081  
 Permit Number  
 Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 013 TtSV-6								Date & Time Sampled: 08/27/14 @ 16:31		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:58	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	4:58	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	4:58	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:58	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:58	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE



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**MICHAEL CREWS**  
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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
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Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 013 TtSV-6								Date & Time Sampled:		08/27/14 @ 16:31
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	4:58	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	4:58	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	4:58	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	4:58	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	4:58	HXE
[VOC Surrogates]										
Dibromofluoromethane	96		%REC	EPA 8260B			70-130	08/27/14	4:58	HXE
Toluene-D8	102		%REC	EPA 8260B			70-130	08/27/14	4:58	HXE
Bromofluorobenzene	85		%REC	EPA 8260B			70-130	08/27/14	4:58	HXE
Methane	<10		ppmv	EPA 8015B	1	10	15	08/27/14	4:35	HXE
Sample: 014 TtSV-6-DUP								Date & Time Sampled:		08/27/14 @ 16:31
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
[VOCs by GCMS]										
Acetone	<2.00		µg/L	EPA 8260B	0	2.0	4.0	08/27/14	5:24	HXE
t-Amyl Methyl Ether (TAME)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Benzene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	5:24	HXE
Bromobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Bromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Bromodichloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE



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**MICHAEL CREWS**  
**17885 VON KARMAN AVENUE**  
**SUITE 500**  
**IRVINE, CA 92614**  
**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
Permit Number  
Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 014 TtSV-6-DUP								Date & Time Sampled: 08/27/14 @ 16:31		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Bromoform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Bromomethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	5:24	HXE
t-Butanol (TBA)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	5:24	HXE
2-Butanone (MEK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	5:24	HXE
n-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
sec-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
tert-Butylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Carbon Disulfide	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	5:24	HXE
Carbon Tetrachloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	5:24	HXE
Chlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Chloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Chloroform	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Chloromethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	5:24	HXE
2-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
4-Chlorotoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Dibromochloromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2-Dibromoethane (EDB)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2-Dibromo-3-Chloropropane	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	5:24	HXE
Dibromomethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,3-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,4-Dichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Dichlorodifluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2-Dichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
cis-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
trans-1,2-Dichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE

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**TETRA TECH, INC.**  
**MICHAEL CREWS**  
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**Project: 2115 Amanda Ln., Escondido, CA**

Date Reported 08/29/14  
Date Received 08/27/14  
Invoice No. 72196  
Cust # T081  
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Customer P.O. 1108157

Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 014 TtSV-6-DUP								Date & Time Sampled: 08/27/14 @ 16:31		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
1,3-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
2,2-Dichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
cis-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
trans-1,3-Dichloropropene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Diisopropyl Ether (DiPE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Ethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Ethyl-t-Butyl Ether (EtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Hexachlorobutadiene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
2-Hexanone	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	5:24	HXE
Isopropylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
4-Isopropyltoluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Methylene Chloride	<0.02		µg/L	EPA 8260B	0	0.020	0.04	08/27/14	5:24	HXE
4-Methyl-2-Pentanone (MIBK)	<0.20		µg/L	EPA 8260B	0	0.20	0.40	08/27/14	5:24	HXE
Methyl-t-butyl Ether (MtBE)	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Naphthalene	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	5:24	HXE
n-Propylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Styrene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1,1,2-Tetrachloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1,2,2-Tetrachloroethane	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	5:24	HXE
Tetrachloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Toluene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2,3-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2,4-Trichlorobenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1,1-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,1,2-Trichloroethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Trichloroethene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,2,3-Trichloropropane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Trichlorofluoromethane	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE

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Analysis	Result	Qual	Units	Method	DF	MDL	RL	Date	Time	Tech
Sample: 014 TtSV-6-DUP								Date & Time Sampled: 08/27/14 @ 16:31		
Sample Matrix: Soil Vapor										
Purge Volume Sampled: 3										
.....continued										
Trichlorotrifluoroethane	<0.08		µg/L	EPA 8260B	0	0.080	0.080	08/27/14	5:24	HXE
1,2,4-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
1,3,5-Trimethylbenzene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
Vinyl Chloride	<0.01		µg/L	EPA 8260B	0	0.010	0.020	08/27/14	5:24	HXE
m,p-Xylenes	<0.04		µg/L	EPA 8260B	0	0.040	0.080	08/27/14	5:24	HXE
o-Xylene	<0.02		µg/L	EPA 8260B	0	0.020	0.040	08/27/14	5:24	HXE
[VOC Vapor Sampling Tracer]										
Isopropanol (IPA)	<4.00		µg/L	EPA 8260B	0	4.0	4.0	08/27/14	5:24	HXE
[VOC Surrogates]										
Dibromofluoromethane	97		%REC	EPA 8260B			70-130	08/27/14	5:24	HXE
Toluene-D8	104		%REC	EPA 8260B			70-130	08/27/14	5:24	HXE
Bromofluorobenzene	85		%REC	EPA 8260B			70-130	08/27/14	5:24	HXE
Methane	<10		ppmv	EPA 8015B	1	10	15	08/27/14	4:39	HXE

Respectfully Submitted:

*Ken Zheng*  
 Ken Zheng - President

### QUALIFIERS

B = Detected in the associated Method Blank at a concentration above the routine RL.  
 B1 = BOD dilution water is over specifications . The reported result may be biased high.  
 D = Surrogate recoveries are not calculated due to sample dilution.  
 E = Estimated value; Value exceeds calibration level of instrument.  
 H = Analyte was prepared and/or analyzed outside of the analytical method holding time  
 I = Matrix Interference.  
 J = Analyte concentration detected between RL and MDL.  
 Q = One or more quality control criteria did not meet specifications. See Comments for further explanation.  
 S = Customer provided specification limit exceeded.

### ABBREVIATIONS

DF = Dilution Factor  
 RL = Reporting Limit, Adjusted by DF  
 MDL = Method Detection Limit, Adjusted by DF  
 Qual = Qualifier  
 Tech = Technician



## A & R Laboratories

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FDA#	2030513
LA City#	10261
ELAP#s	2789
	2790
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*As regulatory limits change frequently, A & R Laboratories advises the recipient of this report to confirm such limits with the appropriate federal, state, or local authorities before acting in reliance on the regulatory limits provided.*

*For any feedback concerning our services, please contact Marilu Escher, Project Manager at 951.779.0310. You may also contact Ken Zheng, President at arlab@arlaboratories.com.*



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## QUALITY CONTROL DATA REPORT

**TETRA TECH, INC.**  
**IRVINE, CA 92614**

**1408-00111**

**Date Reported 08/29/2014**  
**Date Received 08/27/2014**  
**Date Sampled 08/27/2014**  
**Invoice No. 72196**  
**Customer # T081**  
**Customer P.O. 1108157**

**Project: 2115 Amanda Ln., Escondido, CA**

Method #	EPA 8015B															
QC Reference #	44234	Date Analyzed: 8/27/2014										Technician: HXE				
Samples	013	014														
Results												Control Ranges				
	LCS % REC	LCS % DUP	LCS % RPD												LCS % REC	LCS % RPD
Methane	101	96	5.4												70 - 130	0 - 25

Method #	EPA 8260B														
QC Reference #	44233	Date Analyzed: 8/29/2014										Technician: HXE			
Samples	001	002	003	004	005	006	007	008	009	010	011	012	013	014	
Results												Control Ranges			
	LCS % REC	LCS % DUP	LCS % RPD	BLKSRR% REC							LCS % REC	LCS % RPD	BLKSRR% REC		
1,1-Dichloroethene	108	107	0.9								70 - 130	0 - 25			
Benzene	103	103	0.2								70 - 130	0 - 25			
Bromofluorobenzene													70 - 130		
Chlorobenzene	105	112	6.2								70 - 130	0 - 25			
Dibromofluorometha													70 - 130		
Toluene	100	99	1.0								70 - 130	0 - 25			
Toluene-D8													70 - 130		
Trichloroethene	90	93	2.8								70 - 130	0 - 25			



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1408-00111

Date Reported

08/29/2014

Date Received

08/27/2014

Date Sampled

08/27/2014

### Project: 2115 Amanda Ln., Escondido, CA

#### Method blank results

Ref	Test Name	Result	Qualif	Units	MDL	Ref	Test Name	Result	Qualif	Units	MDL
44233	Acetone	<5.0		µg/L	5.0		2-Hexanone	<0.50		µg/L	0.50
	t-Amyl Methyl Ether (TAME)	<0.050		µg/L	0.050		Isopropylbenzene	<0.050		µg/L	0.050
	Benzene	<0.036		µg/L	0.036		4-Isopropyltoluene	<0.050		µg/L	0.050
	Bromobenzene	<0.050		µg/L	0.050		Methylene Chloride	<0.05		µg/L	0.05
	Bromochloromethane	<0.050		µg/L	0.050		4-Methyl-2-Pentanone (MIBK)	<0.50		µg/L	0.50
	Bromodichloromethane	<0.050		µg/L	0.050		Methyl-t-butyl Ether (MtBE)	<0.050		µg/L	0.050
	Bromoform	<0.050		µg/L	0.050		Naphthalene	<0.032		µg/L	0.032
	Bromomethane	<0.10		µg/L	0.10		n-Propylbenzene	<0.050		µg/L	0.050
	t-Butanol (TBA)	<0.50		µg/L	0.50		Styrene	<0.050		µg/L	0.050
	2-Butanone (MEK)	<0.50		µg/L	0.50		1,1,1,2-Tetrachloroethane	<0.050		µg/L	0.050
	n-Butylbenzene	<0.050		µg/L	0.050		1,1,2,2-Tetrachloroethane	<0.10		µg/L	0.10
	sec-Butylbenzene	<0.050		µg/L	0.050		Tetrachloroethene	<0.050		µg/L	0.050
	tert-Butylbenzene	<0.050		µg/L	0.050		Toluene	<0.050		µg/L	0.050
	Carbon Disulfide	<0.50		µg/L	0.50		1,2,3-Trichlorobenzene	<0.050		µg/L	0.050
	Carbon Tetrachloride	<0.025		µg/L	0.025		1,2,4-Trichlorobenzene	<0.050		µg/L	0.050
	Chlorobenzene	<0.050		µg/L	0.050		1,1,1-Trichloroethane	<0.050		µg/L	0.050
	Chloroethane	<0.050		µg/L	0.050		1,1,2-Trichloroethane	<0.050		µg/L	0.050
	Chloroform	<0.050		µg/L	0.050		Trichloroethene	<0.050		µg/L	0.050
	Chloromethane	<0.10		µg/L	0.10		1,2,3-Trichloropropane	<0.050		µg/L	0.050
	2-Chlorotoluene	<0.050		µg/L	0.050		Trichlorofluoromethane	<0.050		µg/L	0.050
	4-Chlorotoluene	<0.050		µg/L	0.050		Trichlorotrifluoroethane	<0.20		µg/L	0.20
	Dibromochloromethane	<0.050		µg/L	0.050		1,2,4-Trimethylbenzene	<0.050		µg/L	0.050
	1,2-Dibromoethane (EDB)	<0.050		µg/L	0.050		1,3,5-Trimethylbenzene	<0.050		µg/L	0.050
	1,2-Dibromo-3-Chloropropane	<0.50		µg/L	0.50		Vinyl Chloride	<0.013		µg/L	0.013
	Dibromomethane	<0.050		µg/L	0.050		m,p-Xylenes	<0.10		µg/L	0.10
	1,2-Dichlorobenzene	<0.050		µg/L	0.050		o-Xylene	<0.050		µg/L	0.050
	1,3-Dichlorobenzene	<0.050		µg/L	0.050		Isopropanol (IPA)	<10		µg/L	10
	1,4-Dichlorobenzene	<0.050		µg/L	0.050	44234	Methane	<10		ppmv	10
	Dichlorodifluoromethane	<0.050		µg/L	0.050						
	1,1-Dichloroethane	<0.050		µg/L	0.050						
	1,2-Dichloroethane	<0.050		µg/L	0.050						
	1,1-Dichloroethene	<0.050		µg/L	0.050						
	cis-1,2-Dichloroethene	<0.050		µg/L	0.050						
	trans-1,2-Dichloroethene	<0.050		µg/L	0.050						
	1,2-Dichloropropane	<0.050		µg/L	0.050						
	1,3-Dichloropropane	<0.050		µg/L	0.050						
	2,2-Dichloropropane	<0.050		µg/L	0.050						
	1,1-Dichloropropene	<0.050		µg/L	0.050						
	cis-1,3-Dichloropropene	<0.050		µg/L	0.050						
	trans-1,3-Dichloropropene	<0.050		µg/L	0.050						
	Diisopropyl Ether (DIPE)	<0.050		µg/L	0.050						
	Ethylbenzene	<0.050		µg/L	0.050						
	Ethyl-t-Butyl Ether (EtBE)	<0.050		µg/L	0.050						
	Hexachlorobutadiene	<0.050		µg/L	0.050						



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*Respectfully Submitted:*

*Ken Zheng*

Ken Zheng - President

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