

# **Implementation Summary Report for a Time-Critical Removal Action at Two Campfire Locations in the Western Transition Area**

University of California, Berkeley  
Richmond Field Station, Richmond, California

February 23, 2009

*Prepared for*  
Office of Environment, Health and Safety  
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## ACRONYMS AND ABBREVIATIONS

§	Section
40 CFR	Title 40, <i>Code of Federal Regulations</i>
Ca-HSC	<i>California Health and Safety Code</i>
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DTSC	Department of Toxic Substances Control
mg/kg	Milligrams per kilogram
MSRI	Math Sciences Research Institute
PAH	Polyaromatic hydrocarbons
PSC	PSC Environmental
RFS	Richmond Field Station
TCRA	Time-critical removal action
Tetra Tech	Tetra Tech EM Inc.
UC Berkeley	University of California, Berkeley
WTA	Western Transition Area

## 1.0 INTRODUCTION

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This report describes a time-critical removal action (TCRA) carried out on behalf of The Regents of the University of California (UC) in accordance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), Site Investigation and Remediation Order, Docket No. ISE-RAO 06/07-004, dated September 15, 2006. The TCRA was conducted on October 1, 2008, at two campfire locations in the Western Transition Area (WTA) at the University of California, Berkeley (UC Berkeley), Richmond Field Station (RFS), Richmond, California.

This summary report presents (1) the RFS site history and background of the WTA, (2) the regulatory history and reasons for performing the TCRA, (3) actions taken during the TCRA, and (4) the results. The report appendices provide background information and data for the TCRA, including photo documentation ([Appendix A](#)), confirmation sampling results ([Appendix B](#)), the DTSC approval of backfill soil ([Appendix C](#)), waste characterization results ([Appendix D](#)), and final disposal manifests ([Appendix E](#)).

## 2.0 SITE BACKGROUND

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This section discusses the site history, background, and regulatory framework for the TCRA.

The RFS property is owned by The Regents of the University of California and is located at 1301 South 46th Street in Richmond, California, in western Contra Costa County. RFS is bordered by Meade Street, off Interstate 580, to the north; by South 46th Street to the east; by the East Bay Regional District Bay Trail to the south; and by Meeker Slough and Regatta Boulevard to the west. Residences, public areas, and commercial facilities are within a 1-mile radius of RFS. Prior to UC's purchase of the RFS property, the California Cap Company used the property for manufacturing of explosives from the late 1800s until 1948. In 1950, UC purchased the property primarily for research facilities for the UC Berkeley College of Engineering; later, other campus departments used portions of RFS.

The 170-acre property consists of four main areas:

- 96 acres of uplands, used for academic institutional activities
- approximately 7.5 acres of tidal salt marsh
- 5.5 acres of marsh-edge habitat and transition area
- approximately 61 acres south of the East Bay Regional Park District's Bay Trail, known as the outboard area, consisting of tidal mud flats, marsh, and open water

The two campfire locations are located in the transition area and adjacent to Meeker Slough.

The WTA comprises mostly non-native ruderal habitat, which creates a transition zone between the upland areas and the Western Stege Marsh. The area consists of about 5 feet of fill material placed onto a former tidal mudflat beginning in the late 1950s.

In January 2008, on behalf of UC Berkeley, Tetra Tech collected surface soil samples in the WTA to evaluate the potential human health risk posed to workers performing weed abatement in the area. During the sampling activities, two small adjacent areas were identified (designated as Campfire Areas I and II) which appeared to be the result of previous, unauthorized campfires (samples WTAA-001 and WTAA-002; see [Figure 1](#)). The two small areas contained visual surficial ash and debris such as empty cans and bottles. The two areas are located within the WTA, which is surrounded by a fence, restricting access.

A review of the soil sample results from the two campfire locations indicated elevated concentrations of polychlorinated biphenyls (PCB), which could potentially pose a risk to on-site workers conducting weed abatement or other work at the site. On May 16 and July 10, 2008, UC Berkeley representatives met with DTSC staff to discuss the PCB

concentrations reported in soil samples from the two campfire areas. DTSC agreed that a TCRA was necessary to remove the PCBs in soil at the two campfire locations and that the TCRA would be conducted under the authority of the DTSC Site Investigation and Remediation Order, Docket No. ISE-RAO 06/07-004, dated September 15, 2006. This removal action was designed to be consistent with *California Health and Safety Code* (Ca-HSC) Section (§) 25356.1 and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 104(a). The potential threats to public health or welfare and the environment posed by the site prior to the TCRA are discussed in the TCRA Memorandum ([Tetra Tech 2008](#)).

### **3.0 REMOVAL ACTION ACTIVITIES AND RESULTS**

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This section describes the TCRA activities. UC Berkeley contracted with PSC Environmental (PSC) to perform all excavation activities. 4LEAF, Inc. (4LEAF) performed oversight, and Tetra Tech collected soil confirmation samples from the excavation. 4LEAF contracted with Muir Consulting, Inc. to perform a land survey of the final excavation boundary and soil confirmation sample locations (see [Figure 2](#)).

#### **3.1 SITE PREPARATION**

PSC mobilized equipment to the site, including four, 1-cubic yard soil containers and hand shovels, as well as water jugs and hand pumps for dust suppression. PSC's staff wore Level D personal protective equipment (PPE) during the excavation activities and were required to wash their work boots and remove all PPE and dispose of the PPE in the waste bins.

#### **3.2 SOIL EXCAVATION**

All excavation activities for the TCRA took place on October 1, 2008. The extent of the two campfire areas were identified visually. The proposed excavations were intended to fully remove visual ash and debris unless the extent of debris exceeded the TCRA depth and volume limits. The depth limit each site was 2 feet and/or a combined total volume limit of 4 cubic yards of excavated material.

Removal activities consisted of using hand tools to excavate PCB-containing soil at the two campfire locations. Before beginning work, PSC and 4LEAF staff conducted a tailgate safety meeting to go over PSC's Health and Safety Plan and to remind on-site workers about potential physical and chemical hazards and dust suppression requirements. The excavation was completed using hand-held tools, in accordance with the TCRA Memorandum ([Tetra Tech 2008](#)). Dust emissions were minimized during the excavation by spraying water from a jug with a hand pump.

PSC began the work by excavating at Campfire Area I. Campfire Area I was excavated to depths between 1 and 1.5 feet below ground surface (bgs), where the soil was found to be free of ashes or other debris. All excavation spoils (approximately 1 cubic yard) were placed in a container.

PSC then began excavating Campfire Area II. The surficial ash was well defined; however, the surrounding soil was littered with debris. During the course of the excavation, glass bottles and metallic objects were unearthed (see [Appendix A](#), photographs 6 through 10). As the excavation depth neared 2 feet bgs, 3 cubic yards of excavation spoils were generated. The maximum excavation volume limit of 4 cubic yards of soil was achieved and the excavation was halted. Visible debris remained at the excavation sidewalls.

Following the excavation activities, PSC transported the four, 1-cubic yard soil containers to the fenced hazardous waste accumulation area at Building 120 for temporary storage until the results for the bin contents' samples were received to characterize the material for off-site disposal. The container contents were sampled and profiled for waste characterization as discussed in Section 3.5.

DTSC staff performed a site visit on October 2, 2008 to observe the excavation sites. DTSC staff verbally approved the two sites to be backfilled with clean soils from the on-site Math Sciences Research Institute (MSRI) soil stockpile as outlined in Section 3.5.

### 3.3 CONFIRMATION SAMPLING

The excavations were completed to meet the TCRA objective of removing soil with visible ash and debris, with an approximate maximum volume of 4 cubic yards. At the completion of the excavations, Tetra Tech staff collected five confirmation soil samples at the sidewalls and bottoms of the excavation areas (see [Figure 2](#)). Four samples were collected from Campfire Area I and one sample was collected from the bottom of Campfire Area II. These soil samples were delivered to a state-certified laboratory for analysis of PCBs and metals. The soil confirmation sample results are summarized in the table below, and the complete laboratory analytical results are provided in [Appendix B](#).

Confirmation samples were collected from the sidewalls and bottom of the excavations by scraping a few centimeters of soil away from the surface at each soil sample location prior to collecting the samples. The underlying soil was then scraped with a decontaminated spoon and placed into a clean 8-ounce wide-mouth glass jar provided by the analytical laboratory. All sample locations were demarcated by placing a survey flag marked with each sample number. The soil confirmation sample locations were later surveyed by a licensed land surveyor from Muir Consulting, Inc. to document the exact sample locations (see [Figure 2](#)).

#### **Total PCB Confirmation Sampling Results**

<b>Sample Id</b>	<b>Sample Location</b>	<b>PCB Concentration (mg/kg)</b>
RFS-WTAA-001-CONF01	Campfire Area I, bottom	2.80
RFS-WTAA-001-CONF02	Campfire Area I, sidewall	2.07
RFS-WTAA-001-CONF03	Campfire Area I, sidewall	4.30
RFS-WTAA-001-CONF04	Campfire Area I, sidewall	6.24
RFS-WTAA-002-CONF05	Campfire Area II, bottom	0.89



On October 2, 2008, the campus Office of Environment, Health and Safety requested radiological sampling assistance from Jim Reese of ERS Solutions. Mr. Reese completed a radiation meter survey using a Geiger Muller detector, collected swipes of debris for analysis using a liquid scintillation counter, and soil samples for analysis by gamma spectroscopy. No radiation or radioactive materials in excess of background were found.

### 3.4 BACKFILLING

The two campfire area excavations were backfilled using clean materials from the MSRI soil stockpile, which was generated from grading conducted during the construction of the new MSRI on the UC Berkeley Central Campus. The MSRI soil stockpile was sampled in June 2006 using the guidelines set forth in the DTSC fact sheet, "Information Advisory, Clean Imported Fill Material" (DTSC 2001). An additional composite soil sample was collected by Tetra Tech from the MSRI stockpile on October 4, 2007, for analysis of polyaromatic hydrocarbons (PAH) by EPA 8270C SIM Method in order to obtain lower detection limits than were achieved for the June 2006 sample. DTSC reviewed the stockpile soil sample results and approved the use of the MSRI stockpile as clean backfill for the TCRA excavation (see Appendix C). At the request of DTSC, each of the excavations were first lined with clear 6 mil plastic to demarcate the extent of each excavation and then backfilled with the MSRI soil by RFS staff on October 23, 2008.

### 3.5 WASTE CHARACTERIZATION

The soil and materials excavated during the TCRA activities were separated into four bins. During the excavation activities, three multi-incremental samples for waste characterization were collected by Tetra Tech staff: one sample from the soil excavated from Campfire Area I, and two samples from the soil excavated from Campfire Area II. Each multi-incremental sample was made up of 50 discrete soil samples collected per the multi-incremental/decision unit sampling method (Hawaii State Department of Health 2008). The soil was sampled incrementally during the excavation process, using a disposable scoop to take material from the shovels prior to the excavated soil being placed in the four containers. The 50 incremental samples were then combined in a decontaminated stainless steel bowl and the composite sample was collected and placed in a clean 8-ounce jar. The samples were submitted to Curtis & Tompkins, a state-certified laboratory, for analysis of metals, semivolatile organic compounds, pesticides, PCBs, and TPH. In addition, one discrete waste characterization sample, RFS-WTAA-002-WASTE02, was analyzed for volatile organic compounds (VOC) and purgeable total petroleum hydrocarbons (TPH), and was taken from one of the three containers with soil from Campfire Area II.

The sample analysis results were compared with hazardous and nonhazardous waste disposal criteria and presented to the landfill (See Appendix D). The one container with soil from Area I was profiled as TSCA waste due to the PCB concentration (80.4 mg/kg) found in the January 2008 site investigation sample. The three soil bins from Area II

were profiled as Class I RCRA-hazardous waste due to concentrations of lead, mercury, silver, heptachlor and chlordane.

### 3.6 WASTE DISPOSAL

On December 15, 2008, the four bins containing soil were manifested under the approved waste profile and transported off site by 21st Century Environmental Management of Nevada, LLC to the Burlington Environmental, LLC Kent Facility in Kent, Washington. [Appendix E](#) provides the approved waste profile and waste manifests.

## **4.0 SUMMARY**

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The TCRA was successfully completed under the DTSC Site Investigation and Remediation Order, Docket No. ISE-RAO 06/07-004, dated September 15, 2006. This removal action was consistent with Ca-HSC § 25356.1 and CERCLA § 104(a). All wastes generated during excavation activities were profiled as hazardous waste and were manifested and transported off site for disposal to the Burlington Environmental, LLC Kent Facility in Kent, Washington for disposal at Class I landfills.

On October 23, 2008, RFS maintenance staff lined the excavation areas with clear 6 mil plastic and backfilled the TCRA excavation areas using the clean, DTSC-approved MSRI soil that was stockpiled on site.

## 5.0 REFERENCES

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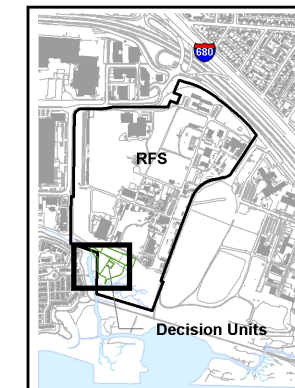
California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2001. "Information Advisory, Clean Imported Fill Material."

Hawaii State Department of Health. 2008. "Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan: Section 4, Soil Sample Collection Approaches." October 22.

Tetra Tech EM Inc. (Tetra Tech) 2008. "Memorandum for a Time-Critical Removal Action at Two Campfire Locations in the Western Transition Area, University of California, Berkeley, Richmond Field Station, Richmond, California." July 11.

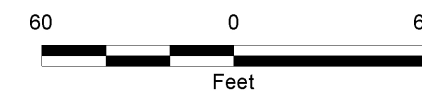
## **FIGURES**

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● Campfire Sampling Locations

Note:  
Image date March 2005, courtesy of BBL Inc.



Richmond Field Station  
University of California, Berkeley

**FIGURE 1**

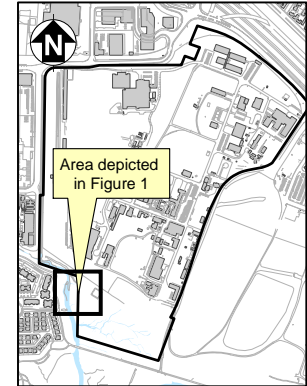
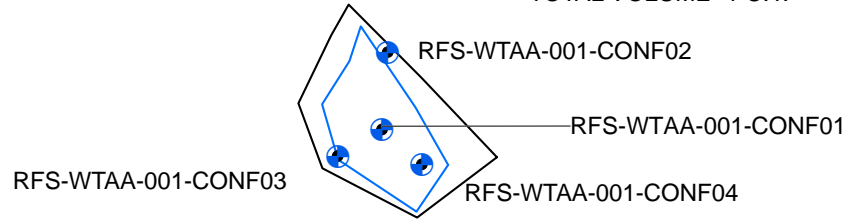
**SITE LOCATION MAP**

Implementation Summary Report for a Time-Critical Removal Action at Two Campfire Locations in the Western Transition Area



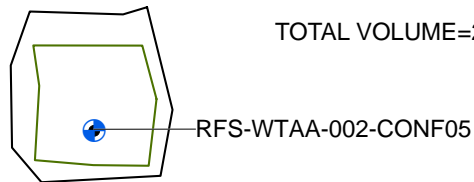
# Campfire Area I





TOTAL VOLUME=1 C.Y.



# Campfire Area II

TOTAL VOLUME=2 C.Y.



-  Confirmation Sample Location
-  Perimeter of Excavation at Ground Surface
-  Lower Perimeter of Campfire I Excavation, Approximately 1ft bgs
-  Lower Perimeter of Campfire Area II Excavation, Approximately 1.3-2ft bgs

Note:  
 bgs Below ground surface  
 C.Y. Cubic yard



Reference:  
 Campfire area generated by  
 Muir Consulting Inc., Dec. 2008

**Richmond Field Station**  
**University of California, Berkeley**  
**FIGURE 2**

**TCRA EXCAVATION AND  
 CONFIRMATION SAMPLE LOCATIONS**  
 Implementation Summary Report for a Time-  
 Critical Removal Action at Two  
 Campfire Locations in the Western Transition Area

**APPENDIX A**  
**TCRA EXCAVATION PHOTO LOG**

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Picture 1. Visually identifying the sites



Picture 2. Wetting the site



Picture 3. Hand excavation of Campfire Area I



Picture 4. Excavation of Campfire Area I



Picture 5. Excavation of Campfire Area II



Picture 6. Debris in Campfire Area II



Picture 7. Campfire Area II



Picture 8. Debris from Campfire  
Area II





Picture 9. Debris from Campfire Area II



Picture 10. Debris from Campfire Area II



Picture 11. Extent of excavation, Campfire Area II



Picture 12. Loading excavated material onto truck



Picture 13. Confirmation sampling in Campfire Area I



Picture 14. Confirmation sampling in Campfire Area II

**APPENDIX B**  
**CONFIRMATION SAMPLING RESULTS**

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**Tetra Tech EM Inc.**  
San Francisco Office

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San Francisco, CA 94105  
415-543-4880  
Fax 415-543-5480

# Chain of Custody Record No. 6687

206500

Page \_\_\_\_\_ of \_\_\_\_\_

Lab PO#: _____		Lab: <u>CTI</u>		
Project name: <u>Campfire T2RA</u>		Field samplers: <u>Carolyn Feliz</u>		
Project (CTO) number: <u>103DS1518019</u>		Field samplers' signatures: <u>Carolyn Feliz</u>		
TTEMI technical contact: <u>Sara Wolley</u>		MS / MSD		
TTEMI project manager: <u>Jason Braderson</u>				
Sample ID	Sample Location (Pt. ID)	Date	Time	Matrix
1 RFS-WTAA-001-CONF01		10/11/08	10:56	Soil
2 RFS-WTAA-001-CONF02			11:00	
3 RFS-WTAA-001-CONF03			11:01	
4 RFS-WTAA-001-CONF04			11:02	
5 RFS-WTAA-002-CONF05			11:25	

No./Container Types	Analysis Required	Preservative Added
40 ml VOA	VOA	
1 liter Amber	SVOA	
500 ml Poly	PCBs	
Sleeve	Metals	
Class Jar 802	TPH Purgeables	
	TPH Extractables	

Relinquished by:	Name (print)	Company Name	Date	Time
<u>Carolyn Feliz</u>	<u>CAROLYN FELIZ</u>	<u>TTEMI</u>	<u>10/11/08</u>	<u>14:25</u>
<u>Anna Keth</u>	<u>A. KATHAIN</u>			
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:  
Metals - CAM 17 by 6010  
5-day TAT

11/11/08  
or  
10/11/08



**Polychlorinated Biphenyls (PCBs)**

Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-001-CONF01	Batch#:	143159
Lab ID:	206500-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	10.00		

Moisture: 11%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	74
Aroclor-1221	ND	150
Aroclor-1232	ND	74
Aroclor-1242	ND	74
Aroclor-1248	2,100	74
Aroclor-1254	560	74
Aroclor-1260	140	74

Surrogate	%REC	Limits
TCMX	DO	68-139
Decachlorobiphenyl	DO	52-147

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-001-CONF02	Batch#:	143159
Lab ID:	206500-002	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	10.00		

Moisture: 7%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	72
Aroclor-1221	ND	140
Aroclor-1232	ND	72
Aroclor-1242	ND	72
Aroclor-1248	1,300	72
Aroclor-1254	670	72
Aroclor-1260	100	72

Surrogate	%REC	Limits
TCMX	DO	68-139
Decachlorobiphenyl	DO	52-147

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-001-CONF03	Batch#:	143159
Lab ID:	206500-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	15.00		

Moisture: 11%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	110
Aroclor-1221	ND	220
Aroclor-1232	ND	110
Aroclor-1242	ND	110
Aroclor-1248	3,600	110
Aroclor-1254	1,500	110
Aroclor-1260	200	110

Surrogate	%REC	Limits
TCMX	DO	68-139
Decachlorobiphenyl	DO	52-147

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-001-CONF04	Batch#:	143159
Lab ID:	206500-004	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	15.00		

Moisture: 8%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	110
Aroclor-1221	ND	220
Aroclor-1232	ND	110
Aroclor-1242	ND	110
Aroclor-1248	4,600	110
Aroclor-1254	1,400	110
Aroclor-1260	240	110

Surrogate	%REC	Limits
TCMX	DO	68-139
Decachlorobiphenyl	DO	52-147

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-002-CONF05	Batch#:	143159
Lab ID:	206500-005	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	1.000		

Moisture: 23%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	16
Aroclor-1221	ND	31
Aroclor-1232	ND	16
Aroclor-1242	ND	16
Aroclor-1248	45	16
Aroclor-1254	27	16
Aroclor-1260	17	16

Surrogate	%REC	Limits
TCMX	104	68-139
Decachlorobiphenyl	87	52-147

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463134	Batch#:	143159
Matrix:	Soil	Prepared:	10/01/08
Units:	ug/Kg	Analyzed:	10/02/08
Basis:	as received		

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	12
Aroclor-1221	ND	24
Aroclor-1232	ND	12
Aroclor-1242	ND	12
Aroclor-1248	ND	12
Aroclor-1254	ND	12
Aroclor-1260	ND	12

Surrogate	%REC	Limits
TCMX	96	68-139
Decachlorobiphenyl	115	52-147

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463135	Batch#:	143159
Matrix:	Soil	Prepared:	10/01/08
Units:	ug/Kg	Analyzed:	10/02/08
Basis:	as received		

Cleanup Method: EPA 3665A

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	166.5	189.4	114	73-139
Aroclor-1260	166.5	196.2	118	76-143

Surrogate	%REC	Limits
TCMX	125	68-139
Decachlorobiphenyl	143	52-147





**California Title 22 Metals**

Lab #:	206500	Project#:	103DS1518019
Client:	Tetra Tech EMI	Location:	Campfire TCRA
Field ID:	RFS-WTAA-002-CONF05	Basis:	dry
Lab ID:	206500-005	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg		

Moisture: 23%

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	5.9	0.65	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Arsenic	47	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Barium	290	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Beryllium	0.29	0.13	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Cadmium	9.4	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Chromium	87	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Cobalt	14	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Copper	820	6.4	20.00		143168	10/01/08	10/05/08	EPA 3050B	EPA 6010B
Lead	390	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Mercury	23	0.50	20.00		143223	10/03/08	10/03/08	METHOD	EPA 7471A
Molybdenum	32	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Nickel	62	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Selenium	0.58 J	0.65	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Silver	23	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Thallium	ND	0.65	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Vanadium	35	0.32	1.000		143168	10/01/08	10/04/08	EPA 3050B	EPA 6010B
Zinc	2,900	26	20.00		143168	10/01/08	10/05/08	EPA 3050B	EPA 6010B

J= Estimated value

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463175	Batch#:	143168
Matrix:	Soil	Prepared:	10/01/08
Units:	mg/Kg	Analyzed:	10/04/08
Basis:	as received		

Analyte	Result	RL
Antimony	ND	0.50
Arsenic	ND	0.25
Barium	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.25
Lead	ND	0.25
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	0.50
Silver	ND	0.25
Thallium	ND	0.50
Vanadium	ND	0.25
Zinc	ND	1.0

ND= Not Detected

RL= Reporting Limit

**Batch QC Report**

California Title 22 Metals			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	143168
Units:	mg/Kg	Prepared:	10/01/08
Basis:	as received	Analyzed:	10/04/08
Diln Fac:	1.000		

Type: BS Lab ID: QC463176

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	91.01	91	80-120
Arsenic	50.00	45.82	92	80-120
Barium	100.0	88.66	89	80-120
Beryllium	2.500	2.299	92	80-120
Cadmium	10.00	9.034	90	80-120
Chromium	100.0	88.26	88	80-120
Cobalt	25.00	21.39	86	80-120
Copper	12.50	10.67	85	80-120
Lead	100.0	92.48	92	80-120
Molybdenum	20.00	18.66	93	80-120
Nickel	25.00	21.44	86	80-120
Selenium	50.00	45.33	91	80-120
Silver	10.00	8.905	89	80-120
Thallium	50.00	45.46	91	80-120
Vanadium	25.00	22.16	89	80-120
Zinc	25.00	22.01	88	80-120

Type: BSD Lab ID: QC463177

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	94.99	95	80-120	4	20
Arsenic	50.00	47.72	95	80-120	4	20
Barium	100.0	93.05	93	80-120	5	20
Beryllium	2.500	2.415	97	80-120	5	20
Cadmium	10.00	9.380	94	80-120	4	20
Chromium	100.0	92.41	92	80-120	5	20
Cobalt	25.00	22.28	89	80-120	4	20
Copper	12.50	11.21	90	80-120	5	20
Lead	100.0	97.17	97	80-120	5	20
Molybdenum	20.00	19.48	97	80-120	4	20
Nickel	25.00	22.40	90	80-120	4	20
Selenium	50.00	46.62	93	80-120	3	20
Silver	10.00	9.258	93	80-120	4	20
Thallium	50.00	47.06	94	80-120	3	20
Vanadium	25.00	23.23	93	80-120	5	20
Zinc	25.00	22.98	92	80-120	4	20

RPD= Relative Percent Difference



**Batch QC Report**

<b>California Title 22 Metals</b>			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	RFS-WTAA-002-CONF05	Units:	mg/Kg
Type:	Serial Dilution	Basis:	dry
MSS Lab ID:	206500-005	Batch#:	143168
Lab ID:	QC463180	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08

Moisture: 23%

Analyte	MSS Result	MSS RL	Result	RL	% Diff	Lim	Diln	Fac	Analyzed
Antimony	5.899	0.6494	5.175	2.978	NC	10	5.000		10/04/08
Arsenic	47.34	0.3247	47.14	1.607	0	10	5.000		10/04/08
Barium	290.2	0.3247	293.1	1.607	1	10	5.000		10/04/08
Beryllium	0.2887	0.1299	0.2677 J	0.6429	NC	10	5.000		10/04/08
Cadmium	9.448	0.3247	9.579	1.607	1	10	5.000		10/04/08
Chromium	87.47	0.3247	88.42	1.607	1	10	5.000		10/04/08
Cobalt	13.84	0.3247	14.81	1.607	7	10	5.000		10/04/08
Copper	823.6	6.429	833.6	32.15	1	10	100.0		10/05/08
Lead	387.6	0.3247	391.7	1.077	1	10	5.000		10/04/08
Molybdenum	32.27	0.3247	31.21	1.607	3	10	5.000		10/04/08
Nickel	61.77	0.3247	62.98	1.607	2	10	5.000		10/04/08
Selenium	0.5818	0.6494	1.831 J	1.943	NC	10	5.000		10/04/08
Silver	23.40	0.3247	22.00	1.607	6	10	5.000		10/04/08
Thallium	ND	0.6494	ND	2.090	NC	10	5.000		10/04/08
Vanadium	34.81	0.3247	34.31	1.607	1	10	5.000		10/04/08
Zinc	2,855	25.72	2,929	128.6	3	10	100.0		10/05/08

J= Estimated value

NC= Not Calculated

ND= Not Detected

RL= Reporting Limit

**Batch QC Report**

<b>California Title 22 Metals</b>			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	RFS-WTAA-002-CONF05	Units:	mg/Kg
Type:	Post Digest Spike	Basis:	dry
MSS Lab ID:	206500-005	Batch#:	143168
Lab ID:	QC463181	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08

Moisture: 23%

Analyte	MSS Result	Spiked	Result	%REC	Limits	Diln	Fac	Analyzed
Antimony	5.899	128.6	119.1	88	75-125	1.000		10/04/08
Arsenic	47.34	64.29	103.1	87	75-125	1.000		10/04/08
Barium	290.2	128.6	396.4	83	75-125	1.000		10/04/08
Beryllium	0.2887	3.215	3.162	89	75-125	1.000		10/04/08
Cadmium	9.448	12.86	20.21	84	75-125	1.000		10/04/08
Chromium	87.47	128.6	196.6	85	75-125	1.000		10/04/08
Cobalt	13.84	32.15	39.57	80	75-125	1.000		10/04/08
Copper	823.6	321.5	1,253	134 *	75-125	20.00		10/05/08
Lead	387.6	128.6	483.2	74 *	75-125	1.000		10/04/08
Molybdenum	32.27	25.72	55.09	89	75-125	1.000		10/04/08
Nickel	61.77	32.15	86.77	78	75-125	1.000		10/04/08
Selenium	0.5818	64.29	59.61	92	75-125	1.000		10/04/08
Silver	23.40	12.86	34.70	88	75-125	1.000		10/04/08
Thallium	<0.1394	64.29	49.66	77	75-125	1.000		10/04/08
Vanadium	34.81	32.15	62.91	87	75-125	1.000		10/04/08
Zinc	2,855	642.9	3,774	143 NM	75-125	20.00		10/05/08

\*= Value outside of QC limits; see narrative

NM= Not Meaningful: Sample concentration &gt; 4X spike concentration

## Batch QC Report

California Title 22 Metals			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Basis:	as received
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463413	Batch#:	143223
Matrix:	Soil	Prepared:	10/03/08
Units:	mg/Kg	Analyzed:	10/03/08

Result	RL
ND	0.020

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143223
Units:	mg/Kg	Prepared:	10/03/08
Basis:	as received	Analyzed:	10/03/08

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC463414	0.5000	0.4980	100	80-120		
BSD	QC463415	0.5000	0.4920	98	80-120	1	20

RPD= Relative Percent Difference



## Batch QC Report

California Title 22 Metals			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Basis:	dry
Field ID:	ZZZZZZZZZZ	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	143223
MSS Lab ID:	206482-001	Sampled:	09/29/08
Lab ID:	QC463416	Received:	10/01/08
Matrix:	Soil	Analyzed:	10/03/08
Units:	mg/Kg		

MSS Result	MSS RL	Result	RL	Moisture %	Diff	Lim
0.02623	0.02418	ND	0.1209	12%	NC	10

NC= Not Calculated  
 ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	206500	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	143223
MSS Lab ID:	206482-001	Sampled:	09/29/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg	Prepared:	10/03/08
Basis:	dry	Analyzed:	10/03/08

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
MS	QC463417	0.02623	0.5570	0.5816	100	66-138	12%		
MSD	QC463418		0.5261	0.5892	107	66-138	12%	7	24

RPD= Relative Percent Difference

**APPENDIX C**  
**DEPARTMENT OF TOXIC SUBSTANCES CONTROL APPROVAL OF MATH**  
**SCIENCES RESEARCH INSTITUTE STOCKPILE**

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Linda S. Adams  
Secretary for  
Environmental Protection



## Department of Toxic Substances Control

Maureen F. Gorsen, Director  
700 Heinz Avenue  
Berkeley, California 94710-2721



Arnold Schwarzenegger  
Governor

October 23, 2007

RECEIVED

OCT 23 2007

Environmental Health  
and Safety

Mr. Greg Haet  
Associate Director, Environmental Protection  
Office of Environment, Health & Safety  
University of California, Berkeley  
317 University Hall #1150  
Berkeley, California 94720-1150

Dear Mr. Haet,

The Department of Toxic Substances Control (DTSC) received via electronic mail on October 22, 2007 tables indicating the analytical results of the Mathematical Sciences Research Institute (MSRI) soil stockpile. The University of California has requested that this stockpile be allowed for backfilling the excavation associated with the former Forest Products Laboratory Wood Treatment Laboratory area Time Critical Removal Action. The MSRI soil stockpile was obtained from the main University of California Berkeley campus as part of a building construction project. DTSC has reviewed the tables and finds that the MSRI soil is acceptable as backfill material in the excavated area.

If you have any questions regarding this letter, please contact Lynn Nakashima of my staff at (510) 540-3839.

Sincerely,

Barbara J. Cook, P.E., Chief  
Northern California – Coastal Cleanup  
Operations Branch

**APPENDIX D**  
**SOIL BIN CONTENTS CHARACTERIZATION SAMPLING RESULTS**

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**Total Volatile Hydrocarbons**

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8015B
Field ID:	RFS-WTAA-002-WASTE02	Diln Fac:	1.000
Lab ID:	206501-002	Batch#:	143242
Matrix:	Soil	Sampled:	10/01/08
Units:	mg/Kg	Received:	10/01/08
Basis:	dry	Analyzed:	10/04/08

Moisture: 18%

Analyte	Result	RL
Gasoline C7-C12	ND	1.2

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	55-151
Bromofluorobenzene (FID)	100	55-153

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8015B
Type:	BLANK	Basis:	as received
Lab ID:	QC463492	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143242
Units:	mg/Kg	Analyzed:	10/03/08

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	55-151
Bromofluorobenzene (FID)	98	55-153

ND= Not Detected  
 RL= Reporting Limit



## Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC463493	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143242
Units:	mg/Kg	Analyzed:	10/03/08

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	5.000	4.396	88	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	55-151
Bromofluorobenzene (FID)	107	55-153

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	206562-006	Batch#:	143242
Matrix:	Soil	Sampled:	10/01/08
Units:	mg/Kg	Received:	10/02/08
Basis:	as received	Analyzed:	10/03/08

Type: MS Lab ID: QC463496

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.09784	9.259	8.312	89	29-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	155 *	55-151
Bromofluorobenzene (FID)	120	55-153

Type: MSD Lab ID: QC463497

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.99	9.866	89	29-120	0	34

Surrogate	%REC	Limits
Trifluorotoluene (FID)	149	55-151
Bromofluorobenzene (FID)	122	55-153

\*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

**Total Extractable Hydrocarbons**

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	SHAKER TABLE
Project#:	103DS1518019	Analysis:	EPA 8015B
Field ID:	RFS-WTAA-002-WASTE01	Batch#:	143582
Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg	Prepared:	10/13/08
Basis:	dry	Analyzed:	10/14/08
Diln Fac:	3.000		

Moisture: 19%

Analyte	Result	RL
Diesel C10-C24	470 Y	3.7
Motor Oil C24-C36	290	18

Surrogate	%REC	Limits
Hexacosane	99	46-130

Y= Sample exhibits chromatographic pattern which does not resemble standard  
 RL= Reporting Limit

**Total Extractable Hydrocarbons**

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	SHAKER TABLE
Project#:	103DS1518019	Analysis:	EPA 8015B
Field ID:	RFS-WTAA-001-WASTE04	Batch#:	143582
Lab ID:	206501-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg	Prepared:	10/13/08
Basis:	dry	Analyzed:	10/14/08
Diln Fac:	5.000		

Moisture: 11%

Analyte	Result	RL
Diesel C10-C24	76 Y	5.6
Motor Oil C24-C36	460	28

Surrogate	%REC	Limits
Hexacosane	104	46-130

Y= Sample exhibits chromatographic pattern which does not resemble standard  
 RL= Reporting Limit

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	SHAKER TABLE
Project#:	103DS1518019	Analysis:	EPA 8015B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC464915	Batch#:	143582
Matrix:	Soil	Prepared:	10/13/08
Units:	mg/Kg	Analyzed:	10/13/08
Basis:	as received		

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	94	46-130

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	SHAKER TABLE
Project#:	103DS1518019	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC464916	Batch#:	143582
Matrix:	Soil	Prepared:	10/13/08
Units:	mg/Kg	Analyzed:	10/13/08
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.80	57.89	116	51-123

Surrogate	%REC	Limits
Hexacosane	116	46-130

**Batch QC Report**

<b>Total Extractable Hydrocarbons</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	SHAKER TABLE
Project#:	103DS1518019	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	206585-003	Batch#:	143582
Matrix:	Soil	Sampled:	10/02/08
Units:	mg/Kg	Received:	10/03/08
Basis:	as received	Prepared:	10/13/08

Type: MS Analyzed: 10/13/08  
 Lab ID: QC464917

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	204.2	49.67	246.0	84 NM	38-140

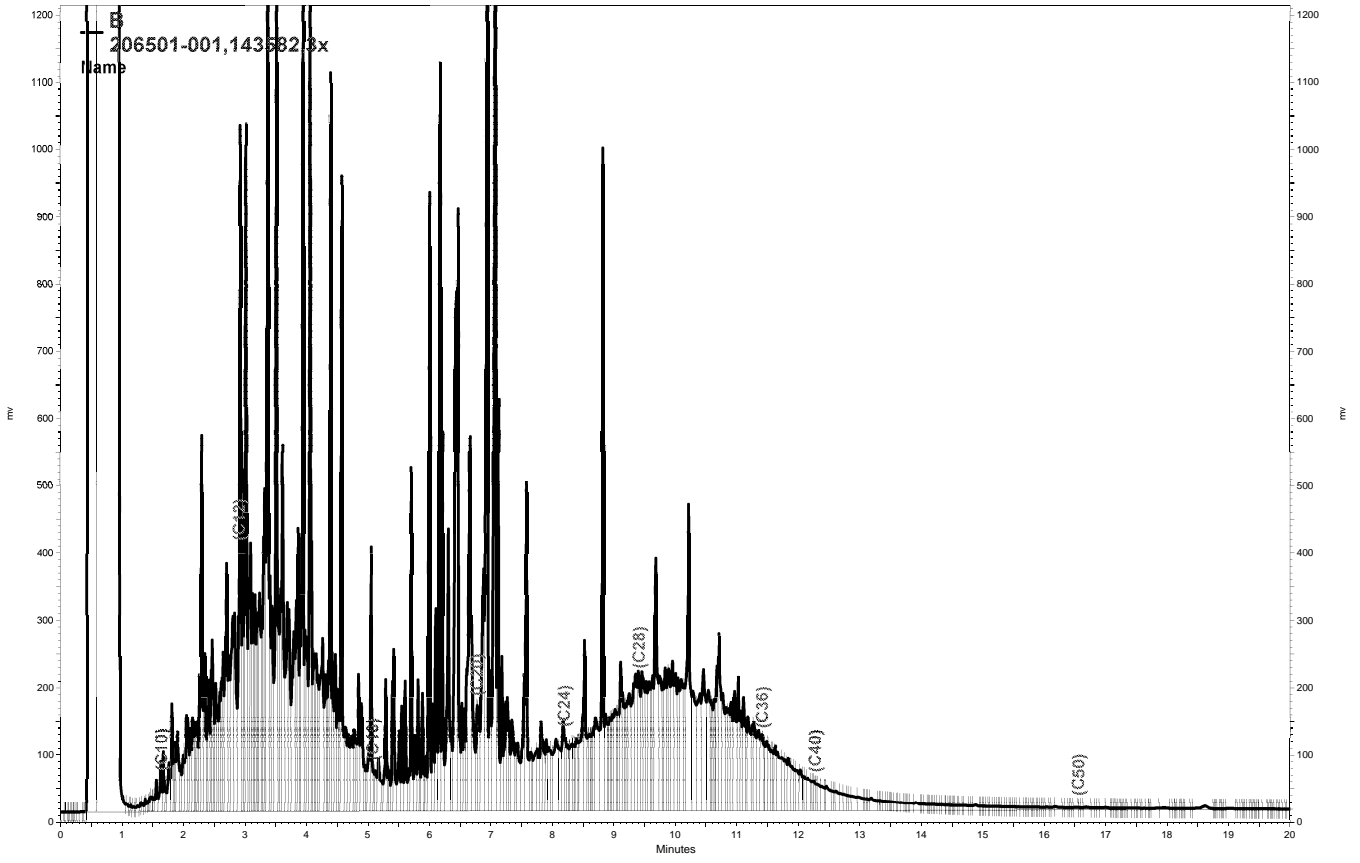
Surrogate	%REC	Limits
Hexacosane	105	46-130

Type: MSD Analyzed: 10/14/08  
 Lab ID: QC464918

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.77	245.2	82 NM	38-140	0	49

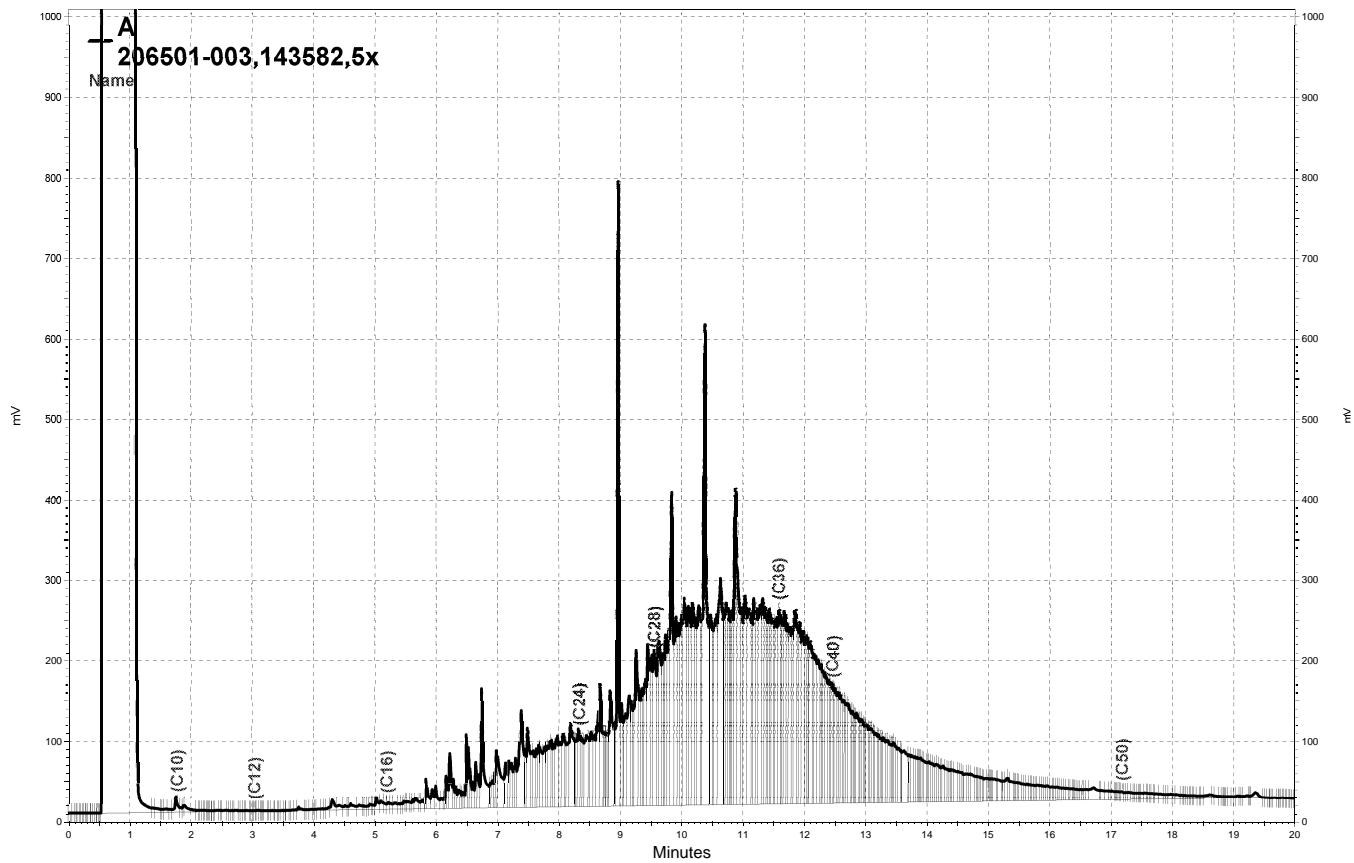
Surrogate	%REC	Limits
Hexacosane	103	46-130

NM= Not Meaningful: Sample concentration > 4X spike concentration  
 RPD= Relative Percent Difference

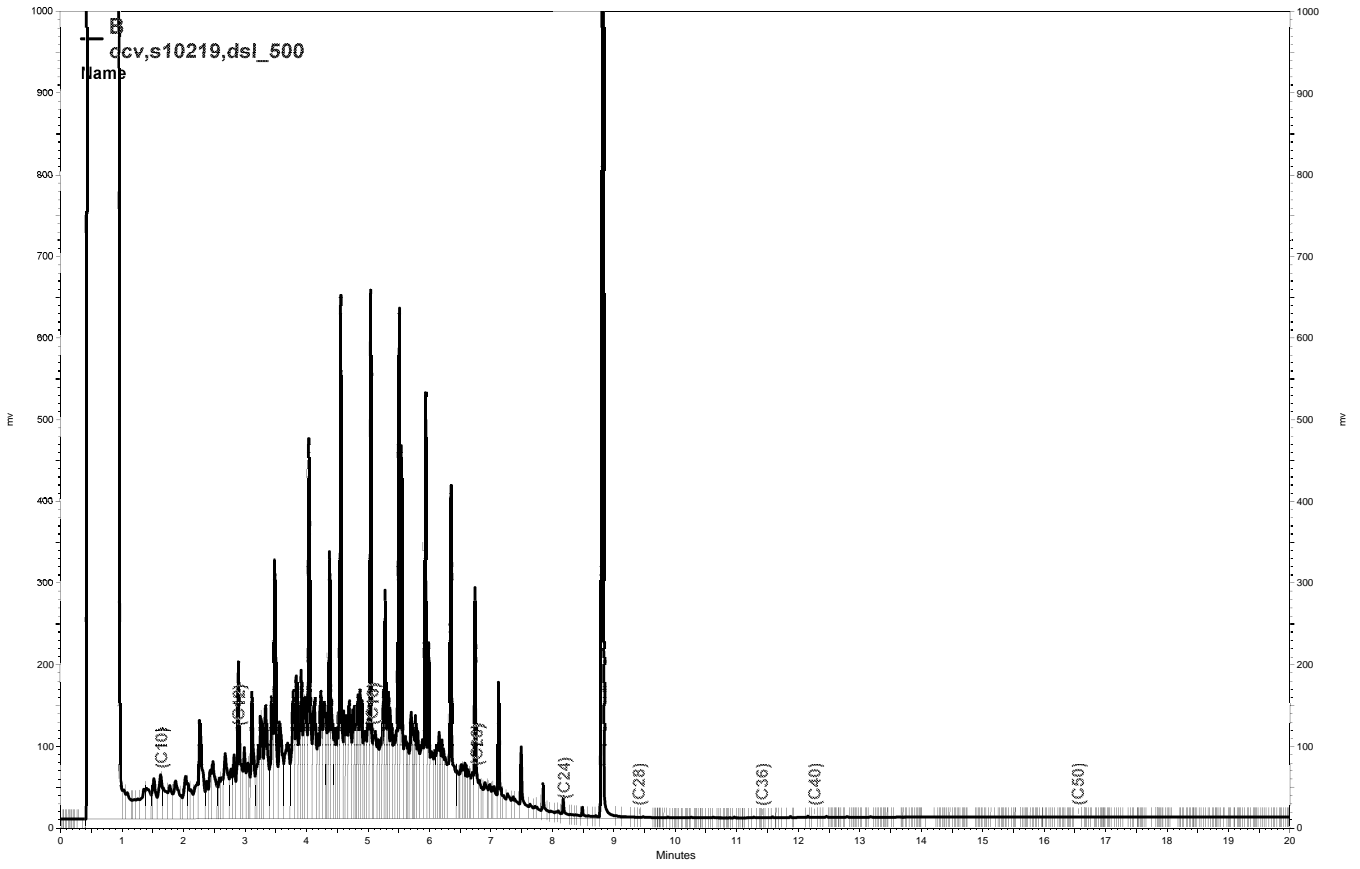


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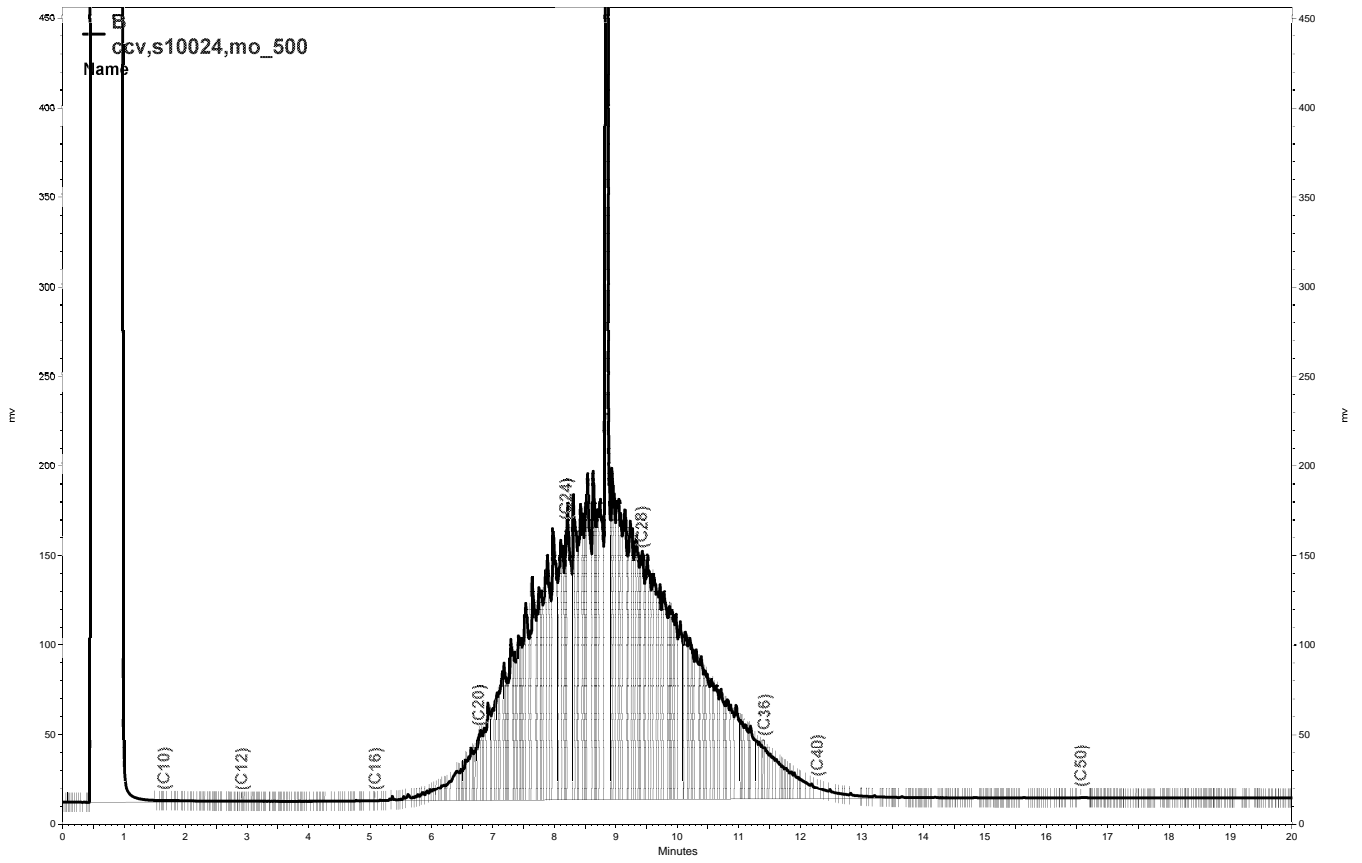




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### Purgeable Organics by GC/MS

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8260B
Field ID:	RFS-WTAA-002-WASTE02	Diln Fac:	0.9107
Lab ID:	206501-002	Batch#:	143174
Matrix:	Soil	Sampled:	10/01/08
Units:	ug/Kg	Received:	10/01/08
Basis:	dry	Analyzed:	10/02/08

Moisture: 18%

Analyte	Result	RL	MDL
Freon 12	ND	11	1.1
Chloromethane	ND	11	1.1
Vinyl Chloride	ND	11	1.1
Bromomethane	ND	11	1.1
Chloroethane	ND	11	1.1
Trichlorofluoromethane	ND	5.6	1.1
Acetone	ND	22	2.2
Freon 113	ND	5.6	1.1
1,1-Dichloroethene	ND	5.6	1.1
Methylene Chloride	16 J	22	2.2
Carbon Disulfide	ND	5.6	1.1
MTBE	ND	5.6	1.1
trans-1,2-Dichloroethene	ND	5.6	1.1
Vinyl Acetate	ND	56	2.2
1,1-Dichloroethane	ND	5.6	1.1
2-Butanone	ND	11	2.2
cis-1,2-Dichloroethene	ND	5.6	1.1
2,2-Dichloropropane	ND	5.6	1.1
Chloroform	ND	5.6	1.1
Bromochloromethane	ND	5.6	1.1
1,1,1-Trichloroethane	ND	5.6	1.1
1,1-Dichloropropene	ND	5.6	1.1
Carbon Tetrachloride	ND	5.6	1.1
1,2-Dichloroethane	ND	5.6	1.1
Benzene	ND	5.6	1.1
Trichloroethene	ND	5.6	1.1
1,2-Dichloropropane	ND	5.6	1.1
Bromodichloromethane	ND	5.6	1.1
Dibromomethane	ND	5.6	1.1
4-Methyl-2-Pentanone	ND	11	2.2
cis-1,3-Dichloropropene	ND	5.6	1.1
Toluene	ND	5.6	1.1
trans-1,3-Dichloropropene	ND	5.6	1.1
1,1,2-Trichloroethane	ND	5.6	1.1
2-Hexanone	ND	11	2.2
1,3-Dichloropropane	ND	5.6	1.1
Tetrachloroethene	ND	5.6	1.1
Dibromochloromethane	ND	5.6	1.1
1,2-Dibromoethane	ND	5.6	1.1
Chlorobenzene	ND	5.6	1.1
1,1,1,2-Tetrachloroethane	ND	5.6	1.1
Ethylbenzene	ND	5.6	1.1
m,p-Xylenes	ND	5.6	1.1
o-Xylene	ND	5.6	1.1
Styrene	ND	5.6	1.1
Bromoform	ND	5.6	1.1
Isopropylbenzene	ND	5.6	1.1
1,1,2,2-Tetrachloroethane	ND	5.6	1.1
1,2,3-Trichloropropane	ND	5.6	1.1
Propylbenzene	ND	5.6	1.1

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit  
 MDL= Method Detection Limit

### Purgeable Organics by GC/MS

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8260B
Field ID:	RFS-WTAA-002-WASTE02	Diln Fac:	0.9107
Lab ID:	206501-002	Batch#:	143174
Matrix:	Soil	Sampled:	10/01/08
Units:	ug/Kg	Received:	10/01/08
Basis:	dry	Analyzed:	10/02/08

Analyte	Result	RL	MDL
Bromobenzene	ND	5.6	1.1
1,3,5-Trimethylbenzene	ND	5.6	1.1
2-Chlorotoluene	ND	5.6	1.1
4-Chlorotoluene	ND	5.6	1.1
tert-Butylbenzene	ND	5.6	1.1
1,2,4-Trimethylbenzene	ND	5.6	1.1
sec-Butylbenzene	ND	5.6	1.1
para-Isopropyl Toluene	ND	5.6	1.1
1,3-Dichlorobenzene	ND	5.6	1.1
1,4-Dichlorobenzene	ND	5.6	1.1
n-Butylbenzene	ND	5.6	1.1
1,2-Dichlorobenzene	ND	5.6	1.1
1,2-Dibromo-3-Chloropropane	ND	5.6	1.1
1,2,4-Trichlorobenzene	ND	5.6	1.1
Hexachlorobutadiene	ND	5.6	1.1
Naphthalene	ND	5.6	1.1
1,2,3-Trichlorobenzene	ND	5.6	1.1

Tentatively Identified Compounds	Result
2,6-dimethyl-undecane	12 J
2,7,10-trimethyl-Dodecane	11 J
3-methyl-nonane	15 J
Dodecane	7.7 J

Surrogate	%REC	Limits
Dibromofluoromethane	89	63-133
1,2-Dichloroethane-d4	117	74-133
Toluene-d8	105	80-111
Bromofluorobenzene	99	77-126

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit  
 MDL= Method Detection Limit

## Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC463195	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143174
Units:	ug/Kg	Analyzed:	10/02/08

Analyte	Result	RL	MDL
Freon 12	ND	10	1.0
Chloromethane	ND	10	1.0
Vinyl Chloride	ND	10	1.0
Bromomethane	ND	10	1.0
Chloroethane	ND	10	1.0
Trichlorofluoromethane	ND	5.0	1.0
Acetone	ND	20	2.0
Freon 113	ND	5.0	1.0
1,1-Dichloroethene	ND	5.0	1.0
Methylene Chloride	5.7 J	20	2.0
Carbon Disulfide	ND	5.0	1.0
MTBE	ND	5.0	1.0
trans-1,2-Dichloroethene	ND	5.0	1.0
Vinyl Acetate	ND	50	2.0
1,1-Dichloroethane	ND	5.0	1.0
2-Butanone	ND	10	2.0
cis-1,2-Dichloroethene	ND	5.0	1.0
2,2-Dichloropropane	ND	5.0	1.0
Chloroform	ND	5.0	1.0
Bromochloromethane	ND	5.0	1.0
1,1,1-Trichloroethane	ND	5.0	1.0
1,1-Dichloropropene	ND	5.0	1.0
Carbon Tetrachloride	ND	5.0	1.0
1,2-Dichloroethane	ND	5.0	1.0
Benzene	ND	5.0	1.0
Trichloroethene	ND	5.0	1.0
1,2-Dichloropropane	ND	5.0	1.0
Bromodichloromethane	ND	5.0	1.0
Dibromomethane	ND	5.0	1.0
4-Methyl-2-Pentanone	ND	10	2.0
cis-1,3-Dichloropropene	ND	5.0	1.0
Toluene	ND	5.0	1.0
trans-1,3-Dichloropropene	ND	5.0	1.0
1,1,2-Trichloroethane	ND	5.0	1.0
2-Hexanone	ND	10	2.0
1,3-Dichloropropane	ND	5.0	1.0
Tetrachloroethene	ND	5.0	1.0
Dibromochloromethane	ND	5.0	1.0
1,2-Dibromoethane	ND	5.0	1.0
Chlorobenzene	ND	5.0	1.0
1,1,1,2-Tetrachloroethane	ND	5.0	1.0
Ethylbenzene	ND	5.0	1.0
m,p-Xylenes	ND	5.0	1.0
o-Xylene	ND	5.0	1.0
Styrene	ND	5.0	1.0
Bromoform	ND	5.0	1.0
Isopropylbenzene	ND	5.0	1.0
1,1,2,2-Tetrachloroethane	ND	5.0	1.0
1,2,3-Trichloropropane	ND	5.0	1.0
Propylbenzene	ND	5.0	1.0
Bromobenzene	ND	5.0	1.0
1,3,5-Trimethylbenzene	ND	5.0	1.0

J= Estimated value

ND= Not Detected

RL= Reporting Limit

MDL= Method Detection Limit

**Batch QC Report**

Purgeable Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC463195	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143174
Units:	ug/Kg	Analyzed:	10/02/08

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	5.0	1.0
4-Chlorotoluene	ND	5.0	1.0
tert-Butylbenzene	ND	5.0	1.0
1,2,4-Trimethylbenzene	ND	5.0	1.0
sec-Butylbenzene	ND	5.0	1.0
para-Isopropyl Toluene	ND	5.0	1.0
1,3-Dichlorobenzene	ND	5.0	1.0
1,4-Dichlorobenzene	ND	5.0	1.0
n-Butylbenzene	ND	5.0	1.0
1,2-Dichlorobenzene	ND	5.0	1.0
1,2-Dibromo-3-Chloropropane	ND	5.0	1.0
1,2,4-Trichlorobenzene	ND	5.0	1.0
Hexachlorobutadiene	ND	5.0	1.0
Naphthalene	ND	5.0	1.0
1,2,3-Trichlorobenzene	ND	5.0	1.0

Tentatively Identified Compounds
No TICs found.

Surrogate	%REC	Limits
Dibromofluoromethane	87	63-133
1,2-Dichloroethane-d4	107	74-133
Toluene-d8	106	80-111
Bromofluorobenzene	96	77-126

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit  
 MDL= Method Detection Limit

## Batch QC Report

Purgeable Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 5030B
Project#:	103DS1518019	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC463196	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143174
Units:	ug/Kg	Analyzed:	10/02/08

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	25.48	102	72-132
Benzene	25.00	26.39	106	80-123
Trichloroethene	25.00	29.45	118	80-125
Toluene	25.00	27.54	110	80-124
Chlorobenzene	25.00	28.83	115	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	91	63-133
1,2-Dichloroethane-d4	102	74-133
Toluene-d8	104	80-111
Bromofluorobenzene	97	77-126





**Semivolatile Organics by GC/MS**

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Field ID:	RFS-WTAA-002-WASTE01	Batch#:	143510
Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/10/08
Basis:	dry	Analyzed:	10/10/08
Diln Fac:	5.000		

Moisture: 19%

Analyte	Result	RL
N-Nitrosodimethylamine	ND	2,100
Phenol	ND	2,100
bis(2-Chloroethyl)ether	ND	2,100
2-Chlorophenol	ND	2,100
1,3-Dichlorobenzene	ND	2,100
1,4-Dichlorobenzene	ND	2,100
Benzyl alcohol	ND	2,100
1,2-Dichlorobenzene	ND	2,100
2-Methylphenol	ND	2,100
bis(2-Chloroisopropyl) ether	ND	2,100
4-Methylphenol	ND	2,100
N-Nitroso-di-n-propylamine	ND	2,100
Hexachloroethane	ND	2,100
Nitrobenzene	ND	2,100
Isophorone	ND	2,100
2-Nitrophenol	ND	4,100
2,4-Dimethylphenol	ND	2,100
Benzoic acid	ND	10,000
bis(2-Chloroethoxy)methane	ND	2,100
2,4-Dichlorophenol	ND	2,100
1,2,4-Trichlorobenzene	ND	2,100
Naphthalene	ND	410
4-Chloroaniline	ND	2,100
Hexachlorobutadiene	ND	2,100
4-Chloro-3-methylphenol	ND	2,100
2-Methylnaphthalene	ND	410
Hexachlorocyclopentadiene	ND	4,100
2,4,6-Trichlorophenol	ND	2,100
2,4,5-Trichlorophenol	ND	2,100
2-Chloronaphthalene	ND	2,100
2-Nitroaniline	ND	4,100
Dimethylphthalate	ND	2,100
Acenaphthylene	ND	410
2,6-Dinitrotoluene	ND	2,100
3-Nitroaniline	ND	4,100
Acenaphthene	ND	410
2,4-Dinitrophenol	ND	4,100
4-Nitrophenol	ND	4,100
Dibenzofuran	ND	2,100
2,4-Dinitrotoluene	ND	2,100
Diethylphthalate	ND	2,100
Fluorene	ND	410
4-Chlorophenyl-phenylether	ND	2,100
4-Nitroaniline	ND	4,100
4,6-Dinitro-2-methylphenol	ND	4,100
N-Nitrosodiphenylamine	ND	2,100
Azobenzene	ND	2,100
4-Bromophenyl-phenylether	ND	2,100
Hexachlorobenzene	ND	2,100
Pentachlorophenol	ND	4,100

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit

Semivolatile Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Field ID:	RFS-WTAA-002-WASTE01	Batch#:	143510
Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/10/08
Basis:	dry	Analyzed:	10/10/08
Diln Fac:	5.000		

Analyte	Result	RL
Phenanthrene	ND	410
Anthracene	ND	410
Di-n-butylphthalate	ND	2,100
Fluoranthene	ND	410
Pyrene	ND	410
Butylbenzylphthalate	ND	2,100
3,3'-Dichlorobenzidine	ND	4,100
Benzo(a)anthracene	ND	410
Chrysene	ND	410
bis(2-Ethylhexyl)phthalate	ND	2,100
Di-n-octylphthalate	ND	2,100
Benzo(b)fluoranthene	ND	410
Benzo(k)fluoranthene	ND	410
Benzo(a)pyrene	ND	410
Indeno(1,2,3-cd)pyrene	ND	410
Dibenz(a,h)anthracene	ND	410
Benzo(g,h,i)perylene	ND	410

Tentatively Identified Compounds	Result
.gamma.-Chordene	8100 J
Dodecane	5100 J
Dodecane, 2,6,10-trimethyl-	5900 J
Dodecane, 2-methyl-8-propyl-	5000 J
Heptachlor	6300 J
Octane, 2,3,6-trimethyl-	6900 J
Tetradecane	6600 J
Unknown 1	6900 J
cis-Chlordane	13000 J
trans-Chlordane	13000 J

Surrogate	%REC	Limits
2-Fluorophenol	71	33-120
Phenol-d5	75	36-120
2,4,6-Tribromophenol	87	35-120
Nitrobenzene-d5	72	45-120
2-Fluorobiphenyl	82	49-120
Terphenyl-d14	80	47-120

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit

Semivolatile Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Field ID:	RFS-WTAA-001-WASTE04	Batch#:	143510
Lab ID:	206501-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/10/08
Basis:	dry	Analyzed:	10/10/08
Diln Fac:	5.000		

Moisture: 11%

Analyte	Result	RL
N-Nitrosodimethylamine	ND	1,900
Phenol	ND	1,900
bis(2-Chloroethyl)ether	ND	1,900
2-Chlorophenol	ND	1,900
1,3-Dichlorobenzene	ND	1,900
1,4-Dichlorobenzene	ND	1,900
Benzyl alcohol	ND	1,900
1,2-Dichlorobenzene	ND	1,900
2-Methylphenol	ND	1,900
bis(2-Chloroisopropyl) ether	ND	1,900
4-Methylphenol	ND	1,900
N-Nitroso-di-n-propylamine	ND	1,900
Hexachloroethane	ND	1,900
Nitrobenzene	ND	1,900
Isophorone	ND	1,900
2-Nitrophenol	ND	3,700
2,4-Dimethylphenol	ND	1,900
Benzoic acid	ND	9,400
bis(2-Chloroethoxy)methane	ND	1,900
2,4-Dichlorophenol	ND	1,900
1,2,4-Trichlorobenzene	ND	1,900
Naphthalene	ND	370
4-Chloroaniline	ND	1,900
Hexachlorobutadiene	ND	1,900
4-Chloro-3-methylphenol	ND	1,900
2-Methylnaphthalene	ND	370
Hexachlorocyclopentadiene	ND	3,700
2,4,6-Trichlorophenol	ND	1,900
2,4,5-Trichlorophenol	ND	1,900
2-Chloronaphthalene	ND	1,900
2-Nitroaniline	ND	3,700
Dimethylphthalate	ND	1,900
Acenaphthylene	ND	370
2,6-Dinitrotoluene	ND	1,900
3-Nitroaniline	ND	3,700
Acenaphthene	ND	370
2,4-Dinitrophenol	ND	3,700
4-Nitrophenol	ND	3,700
Dibenzofuran	ND	1,900
2,4-Dinitrotoluene	ND	1,900
Diethylphthalate	ND	1,900
Fluorene	ND	370
4-Chlorophenyl-phenylether	ND	1,900
4-Nitroaniline	ND	3,700
4,6-Dinitro-2-methylphenol	ND	3,700
N-Nitrosodiphenylamine	ND	1,900
Azobenzene	ND	1,900
4-Bromophenyl-phenylether	ND	1,900
Hexachlorobenzene	ND	1,900
Pentachlorophenol	ND	3,700

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit

Semivolatile Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Field ID:	RFS-WTAA-001-WASTE04	Batch#:	143510
Lab ID:	206501-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/10/08
Basis:	dry	Analyzed:	10/10/08
Diln Fac:	5.000		

Analyte	Result	RL
Phenanthrene	ND	370
Anthracene	ND	370
Di-n-butylphthalate	ND	1,900
Fluoranthene	ND	370
Pyrene	ND	370
Butylbenzylphthalate	ND	1,900
3,3'-Dichlorobenzidine	ND	3,700
Benzo(a)anthracene	ND	370
Chrysene	ND	370
bis(2-Ethylhexyl)phthalate	ND	1,900
Di-n-octylphthalate	ND	1,900
Benzo(b)fluoranthene	ND	370
Benzo(k)fluoranthene	ND	370
Benzo(a)pyrene	ND	370
Indeno(1,2,3-cd)pyrene	ND	370
Dibenz(a,h)anthracene	ND	370
Benzo(g,h,i)perylene	ND	370

Tentatively Identified Compounds	Result
1,1'-Biphenyl, 2,2',4,5'-tetrachloro-	760 J
1,1'-Biphenyl, 2,2',5,6-Tetrachloro-	1000 J
1,1'-Biphenyl, trichloro	1100 J
2-Pentanone, 4-hydroxy-4-methyl-	2200 J
Nonadecane	1200 J
Tritetracontane	980 J

Surrogate	%REC	Limits
2-Fluorophenol	81	33-120
Phenol-d5	87	36-120
2,4,6-Tribromophenol	101	35-120
Nitrobenzene-d5	80	45-120
2-Fluorobiphenyl	92	49-120
Terphenyl-d14	88	47-120

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

<b>Semivolatile Organics by GC/MS</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC464648	Batch#:	143510
Matrix:	Soil	Prepared:	10/10/08
Units:	ug/Kg	Analyzed:	10/10/08
Basis:	as received		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	670
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	67
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	67
Hexachlorocyclopentadiene	ND	670
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	670
Dimethylphthalate	ND	330
Acenaphthylene	ND	67
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	670
Acenaphthene	ND	67
2,4-Dinitrophenol	ND	670
4-Nitrophenol	ND	670
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	67
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	670
4,6-Dinitro-2-methylphenol	ND	670
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	670
Phenanthrene	ND	67
Anthracene	ND	67

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

<b>Semivolatile Organics by GC/MS</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC464648	Batch#:	143510
Matrix:	Soil	Prepared:	10/10/08
Units:	ug/Kg	Analyzed:	10/10/08
Basis:	as received		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
Di-n-butylphthalate	ND	330
Fluoranthene	ND	67
Pyrene	ND	67
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	670
Benzo(a)anthracene	ND	67
Chrysene	ND	67
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	67
Benzo(k)fluoranthene	ND	67
Benzo(a)pyrene	ND	67
Indeno(1,2,3-cd)pyrene	ND	67
Dibenz(a,h)anthracene	ND	67
Benzo(g,h,i)perylene	ND	67

<b>Tentatively Identified Compounds</b>	<b>Result</b>
2-Pentanone, 4-hydroxy-4-methyl-	1800 J

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
2-Fluorophenol	71	33-120
Phenol-d5	68	36-120
2,4,6-Tribromophenol	60	35-120
Nitrobenzene-d5	65	45-120
2-Fluorobiphenyl	77	49-120
Terphenyl-d14	82	47-120

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit

**Batch QC Report**

<b>Semivolatile Organics by GC/MS</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC464649	Batch#:	143510
Matrix:	Soil	Prepared:	10/10/08
Units:	ug/Kg	Analyzed:	10/10/08
Basis:	as received		

<b>Analyte</b>	<b>Spiked</b>	<b>Result</b>	<b>%REC</b>	<b>Limits</b>
Phenol	2,664	1,804	68	28-120
2-Chlorophenol	2,664	1,931	72	35-120
1,4-Dichlorobenzene	2,664	1,812	68	47-120
N-Nitroso-di-n-propylamine	2,664	1,542	58	21-120
1,2,4-Trichlorobenzene	2,664	1,785	67	43-120
4-Chloro-3-methylphenol	2,664	1,996	75	42-120
Acenaphthene	999.0	736.8	74	46-120
4-Nitrophenol	2,664	1,725	65	36-120
2,4-Dinitrotoluene	2,664	2,063	77	46-120
Pentachlorophenol	2,664	1,830	69	30-120
Pyrene	999.0	890.2	89	44-120

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
2-Fluorophenol	76	33-120
Phenol-d5	70	36-120
2,4,6-Tribromophenol	79	35-120
Nitrobenzene-d5	67	45-120
2-Fluorobiphenyl	78	49-120
Terphenyl-d14	84	47-120



**Batch QC Report**

Semivolatile Organics by GC/MS			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8270C
Field ID:	ZZZZZZZZZZ	Batch#:	143510
MSS Lab ID:	206538-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/02/08
Units:	ug/Kg	Prepared:	10/10/08
Basis:	dry	Analyzed:	10/11/08
Diln Fac:	1.000		

Type: MS Moisture: 31%  
Lab ID: QC464650

Analyte	MSS Result	Spiked	Result	%REC	Limits
Phenol	<87.63	3,846	2,528	66	39-120
2-Chlorophenol	<101.7	3,846	2,639	69	40-120
1,4-Dichlorobenzene	<79.01	3,846	2,457	64	49-120
N-Nitroso-di-n-propylamine	<44.10	3,846	2,162	56	32-120
1,2,4-Trichlorobenzene	<62.31	3,846	2,390	62	46-120
4-Chloro-3-methylphenol	<16.19	3,846	2,578	67	45-120
Acenaphthene	52.98	1,442	1,006	66	48-120
4-Nitrophenol	<51.12	3,846	2,484	65	34-120
2,4-Dinitrotoluene	<30.87	3,846	2,678	70	49-120
Pentachlorophenol	<243.7	3,846	2,628	68	23-120
Pyrene	157.1	1,442	1,163	70	42-120

Surrogate	%REC	Limits
2-Fluorophenol	73	33-120
Phenol-d5	70	36-120
2,4,6-Tribromophenol	73	35-120
Nitrobenzene-d5	67	45-120
2-Fluorobiphenyl	74	49-120
Terphenyl-d14	78	47-120

Type: MSD Moisture: 31%  
Lab ID: QC464651

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Phenol	3,811	2,473	65	39-120	1	31
2-Chlorophenol	3,811	2,534	66	40-120	3	32
1,4-Dichlorobenzene	3,811	2,387	63	49-120	2	33
N-Nitroso-di-n-propylamine	3,811	2,127	56	32-120	1	39
1,2,4-Trichlorobenzene	3,811	2,231	59	46-120	6	32
4-Chloro-3-methylphenol	3,811	2,427	64	45-120	5	32
Acenaphthene	1,429	950.3	63	48-120	5	29
4-Nitrophenol	3,811	2,348	62	34-120	5	36
2,4-Dinitrotoluene	3,811	2,563	67	49-120	4	31
Pentachlorophenol	3,811	2,463	65	23-120	6	49
Pyrene	1,429	1,098	66	42-120	5	32

Surrogate	%REC	Limits
2-Fluorophenol	69	33-120
Phenol-d5	66	36-120
2,4,6-Tribromophenol	66	35-120
Nitrobenzene-d5	61	45-120
2-Fluorobiphenyl	68	49-120
Terphenyl-d14	71	47-120

RPD= Relative Percent Difference

### Organochlorine Pesticides

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8081A
Field ID:	RFS-WTAA-002-WASTE01	Batch#:	143159
Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/15/08

Moisture: 19%

Cleanup Method: EPA 3665A

Analyte	Result	RL	Diln Fac
alpha-BHC	ND	2,100	1,000
beta-BHC	ND	2,100	1,000
gamma-BHC	1,600 J	2,100	1,000
delta-BHC	ND	2,100	1,000
Heptachlor	27,000	2,100	1,000
Aldrin	ND	2,100	1,000
Heptachlor epoxide	ND	2,100	1,000
Endosulfan I	ND	2,100	1,000
Dieldrin	ND	4,100	1,000
4,4'-DDE	5,000 C	4,100	1,000
Endrin	ND	4,100	1,000
Endosulfan II	ND	4,100	1,000
Endosulfan sulfate	ND	4,100	1,000
4,4'-DDD	ND	4,100	1,000
Endrin aldehyde	ND	4,100	1,000
4,4'-DDT	ND	4,100	1,000
alpha-Chlordane	44,000	4,200	2,000
gamma-Chlordane	43,000	4,200	2,000
Methoxychlor	ND	21,000	1,000
Toxaphene	ND	74,000	1,000

Surrogate	%REC	Limits	Diln Fac
TCMX	DO	35-126	1,000
Decachlorobiphenyl	DO	37-146	1,000

C= Presence confirmed, but RPD between columns exceeds 40%

J= Estimated value

DO= Diluted Out

ND= Not Detected

RL= Reporting Limit

Organochlorine Pesticides			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8081A
Field ID:	RFS-WTAA-001-WASTE04	Batch#:	143159
Lab ID:	206501-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry		

Moisture: 11%

Cleanup Method: EPA 3665A

Analyte	Result	RL	Diln Fac	Analyzed
alpha-BHC	ND	9.5	5.000	10/04/08
beta-BHC	ND	9.5	5.000	10/04/08
gamma-BHC	63 C	9.5	5.000	10/04/08
delta-BHC	ND	9.5	5.000	10/04/08
Heptachlor	82 C	9.5	5.000	10/04/08
Aldrin	ND	9.5	5.000	10/04/08
Heptachlor epoxide	150	9.5	5.000	10/04/08
Endosulfan I	22 C	9.5	5.000	10/04/08
Dieldrin	23 C	18	5.000	10/04/08
4,4'-DDE	74	37	10.00	10/14/08
Endrin	ND	18	5.000	10/04/08
Endosulfan II	ND	18	5.000	10/04/08
Endosulfan sulfate	15 C J	18	5.000	10/04/08
4,4'-DDD	16 C J	18	5.000	10/04/08
Endrin aldehyde	ND	18	5.000	10/04/08
4,4'-DDT	48 C	18	5.000	10/04/08
alpha-Chlordane	220	19	10.00	10/14/08
gamma-Chlordane	190	19	10.00	10/14/08
Methoxychlor	ND	95	5.000	10/04/08
Toxaphene	ND	340	5.000	10/04/08

Surrogate	%REC	Limits	Diln Fac	Analyzed
TCMX	77	35-126	5.000	10/04/08
Decachlorobiphenyl	120	37-146	5.000	10/04/08

C= Presence confirmed, but RPD between columns exceeds 40%

J= Estimated value

ND= Not Detected

RL= Reporting Limit

**Batch QC Report**

<b>Organochlorine Pesticides</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463134	Batch#:	143159
Matrix:	Soil	Prepared:	10/01/08
Units:	ug/Kg	Analyzed:	10/02/08
Basis:	as received		

Cleanup Method: EPA 3665A

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
alpha-BHC	ND	1.7
beta-BHC	ND	1.7
gamma-BHC	ND	1.7
delta-BHC	ND	1.7
Heptachlor	ND	1.7
Aldrin	ND	1.7
Heptachlor epoxide	ND	1.7
Endosulfan I	ND	1.7
Dieldrin	ND	3.3
4,4'-DDE	ND	3.3
Endrin	ND	3.3
Endosulfan II	ND	3.3
Endosulfan sulfate	ND	3.3
4,4'-DDD	ND	3.3
Endrin aldehyde	ND	3.3
4,4'-DDT	ND #	3.3
alpha-Chlordane	ND	1.7
gamma-Chlordane	ND	1.7
Methoxychlor	ND #	17
Toxaphene	ND	60

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
TCMX	109	35-126
Decachlorobiphenyl	97	37-146

#= CCV drift outside limits; average CCV drift within limits per method requirements  
 ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Organochlorine Pesticides			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8081A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463138	Batch#:	143159
Matrix:	Soil	Prepared:	10/01/08
Units:	ug/Kg	Analyzed:	10/02/08
Basis:	as received		

Cleanup Method: EPA 3665A

Analyte	Spiked	Result	%REC	Limits
gamma-BHC	13.32	11.85	89	27-121
Heptachlor	13.32	11.67	88	22-127
Aldrin	13.32	11.46	86	27-120
Dieldrin	26.63	22.76	85	29-131
Endrin	26.63	22.17	83	30-146
4,4'-DDT	26.63	18.29 #	69	26-131

Surrogate	%REC	Limits
TCMX	104	35-126
Decachlorobiphenyl	99	37-146

#= CCV drift outside limits; average CCV drift within limits per method requirements

**Batch QC Report**

Organochlorine Pesticides			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8081A
Field ID:	ZZZZZZZZZZ	Batch#:	143159
MSS Lab ID:	206503-004	Sampled:	09/25/08
Matrix:	Soil	Received:	09/25/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/02/08
Diln Fac:	1.000		

Type: MS  
Lab ID: QC463139

Moisture: 4%  
Cleanup Method: EPA 3665A

Analyte	MSS Result	Spiked	Result	%REC	Limits
gamma-BHC	<0.2304	13.79	12.42	90	37-123
Heptachlor	<0.2688	13.79	12.29	89	33-129
Aldrin	<0.2386	13.79	12.67	92	37-120
Dieldrin	<0.5355	27.58	24.86	90	42-128
Endrin	<0.5047	27.58	24.18	88	33-136
4,4'-DDT	<0.5220	27.58	19.72 #	72	27-132

Surrogate	%REC	Limits
TCMX	107	35-126
Decachlorobiphenyl	99	37-146

Type: MSD  
Lab ID: QC463140

Moisture: 4%  
Cleanup Method: EPA 3665A

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
gamma-BHC	13.74	13.05	95	37-123	5	48
Heptachlor	13.74	13.47	98	33-129	9	51
Aldrin	13.74	13.01	95	37-120	3	44
Dieldrin	27.48	25.46	93	42-128	3	42
Endrin	27.48	24.87	90	33-136	3	53
4,4'-DDT	27.48	21.33 #	78	27-132	8	49

Surrogate	%REC	Limits
TCMX	112	35-126
Decachlorobiphenyl	106	37-146

#= CCV drift outside limits; average CCV drift within limits per method requirements  
RPD= Relative Percent Difference

**Polychlorinated Biphenyls (PCBs)**

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-002-WASTE01	Batch#:	143159
Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	50.00		

Moisture: 19%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	410
Aroclor-1221	ND	820
Aroclor-1232	ND	410
Aroclor-1242	ND	410
Aroclor-1248	ND	410
Aroclor-1254	ND	410
Aroclor-1260	ND	410

Surrogate	%REC	Limits
TCMX	DO	68-139
Decachlorobiphenyl	DO	52-147

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit

**Polychlorinated Biphenyls (PCBs)**

Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	RFS-WTAA-001-WASTE04	Batch#:	143159
Lab ID:	206501-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/03/08
Diln Fac:	50.00		

Moisture: 11%

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	370
Aroclor-1221	ND	750
Aroclor-1232	ND	370
Aroclor-1242	ND	370
Aroclor-1248	10,000	370
Aroclor-1254	2,800	370
Aroclor-1260	430	370

Surrogate	%REC	Limits
TCMX	DO	68-139
Decachlorobiphenyl	DO	52-147

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit



## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463134	Batch#:	143159
Matrix:	Soil	Prepared:	10/01/08
Units:	ug/Kg	Analyzed:	10/02/08
Basis:	as received		

Cleanup Method: EPA 3665A

Analyte	Result	RL
Aroclor-1016	ND	12
Aroclor-1221	ND	24
Aroclor-1232	ND	12
Aroclor-1242	ND	12
Aroclor-1248	ND	12
Aroclor-1254	ND	12
Aroclor-1260	ND	12

Surrogate	%REC	Limits
TCMX	96	68-139
Decachlorobiphenyl	115	52-147

 ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463135	Batch#:	143159
Matrix:	Soil	Prepared:	10/01/08
Units:	ug/Kg	Analyzed:	10/02/08
Basis:	as received		

Cleanup Method: EPA 3665A

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	166.5	189.4	114	73-139
Aroclor-1260	166.5	196.2	118	76-143

Surrogate	%REC	Limits
TCMX	125	68-139
Decachlorobiphenyl	143	52-147

## Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3550B
Project#:	103DS1518019	Analysis:	EPA 8082
Field ID:	ZZZZZZZZZZ	Batch#:	143159
MSS Lab ID:	206503-004	Sampled:	09/25/08
Matrix:	Soil	Received:	09/25/08
Units:	ug/Kg	Prepared:	10/01/08
Basis:	dry	Analyzed:	10/02/08
Diln Fac:	1.000		

Type: MS Moisture: 4%  
 Lab ID: QC463136 Cleanup Method: EPA 3665A

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<1.994	173.4	169.2	98	66-146
Aroclor-1260	4.067	173.4	161.9	91	52-142

Surrogate	%REC	Limits
TCMX	105	68-139
Decachlorobiphenyl	104	52-147

Type: MSD Moisture: 4%  
 Lab ID: QC463137 Cleanup Method: EPA 3665A

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	173.0	155.6	90	66-146	8	28
Aroclor-1260	173.0	152.2	86	52-142	6	28

Surrogate	%REC	Limits
TCMX	101	68-139
Decachlorobiphenyl	102	52-147

RPD= Relative Percent Difference

**California Title 22 Metals**

Lab #:	206501	Project#:	103DS1518019
Client:	Tetra Tech EMI	Location:	Campfire TCRA
Field ID:	RFS-WTAA-002-WASTE01	Basis:	dry
Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg		

Moisture: 19%

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	8.3	0.62	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Arsenic	30	0.31	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Barium	990	2.8	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Beryllium	0.35	0.12	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Cadmium	14	0.31	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Chromium	1,300	2.8	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Cobalt	28	0.31	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Copper	3,300	2.8	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Lead	1,200	1.9	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Mercury	11	0.51	20.00		143367	10/07/08	10/08/08	METHOD	EPA 7471A
Molybdenum	18	0.31	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Nickel	740	2.8	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Selenium	ND	0.62	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Silver	110	0.31	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Thallium	ND	0.62	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Vanadium	39	0.31	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Zinc	5,300	11	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B

ND= Not Detected  
 RL= Reporting Limit

**California Title 22 Metals**

Lab #:	206501	Project#:	103DS1518019
Client:	Tetra Tech EMI	Location:	Campfire TCRA
Field ID:	RFS-WTAA-001-WASTE04	Basis:	dry
Lab ID:	206501-003	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg		

Moisture: 11%

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	14	0.56	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Arsenic	20	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Barium	720	2.6	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Beryllium	0.42	0.11	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Cadmium	5.1	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Chromium	72	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Cobalt	15	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Copper	2,200	2.6	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Lead	1,800	1.7	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B
Mercury	3.8	0.10	5.000		143367	10/07/08	10/08/08	METHOD	EPA 7471A
Molybdenum	4.5	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Nickel	97	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Selenium	ND	0.56	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Silver	55	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Thallium	ND	0.56	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Vanadium	41	0.28	1.000		143485	10/09/08	10/10/08	EPA 3050B	EPA 6010B
Zinc	1,700	10	10.00		143485	10/09/08	10/11/08	EPA 3050B	EPA 6010B

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Basis:	as received
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC464026	Batch#:	143367
Matrix:	Soil	Prepared:	10/07/08
Units:	mg/Kg	Analyzed:	10/07/08

Result	RL
ND	0.020

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143367
Units:	mg/Kg	Prepared:	10/07/08
Basis:	as received	Analyzed:	10/07/08

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC464027	0.5000	0.4730	95	80-120		
BSD	QC464028	0.5000	0.4830	97	80-120	2	20

RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Basis:	dry
Field ID:	RFS-WTAA-002-WASTE01	Diln Fac:	100.0
Type:	Serial Dilution	Batch#:	143367
MSS Lab ID:	206501-001	Sampled:	10/01/08
Lab ID:	QC464029	Received:	10/01/08
Matrix:	Soil	Analyzed:	10/08/08
Units:	mg/Kg		

MSS Result	MSS RL	Result	RL	Moisture %	Diff	Lim
10.96	0.5144	9.169	2.572	19%	16 *	10

\*= Value outside of QC limits; see narrative

RL= Reporting Limit



**Batch QC Report**

<b>California Title 22 Metals</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	20.00
Field ID:	RFS-WTAA-002-WASTE01	Batch#:	143367
MSS Lab ID:	206501-001	Sampled:	10/01/08
Matrix:	Soil	Received:	10/01/08
Units:	mg/Kg	Prepared:	10/07/08
Basis:	dry	Analyzed:	10/08/08

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
MS	QC464030	10.96	0.6299	15.37	701 NM	66-138	19%		
MSD	QC464031		0.6567	16.23	804 NM	66-138	19%	5	24

NM= Not Meaningful: Sample concentration > 4X spike concentration  
 RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC464533	Batch#:	143485
Matrix:	Soil	Prepared:	10/09/08
Units:	mg/Kg	Analyzed:	10/10/08
Basis:	as received		

Analyte	Result	RL
Antimony	0.25 J	0.50
Arsenic	ND	0.25
Barium	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.25
Lead	ND	0.25
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	0.50
Silver	ND	0.25
Thallium	ND	0.50
Vanadium	ND	0.25
Zinc	ND	1.0

J= Estimated value

ND= Not Detected

RL= Reporting Limit

**Batch QC Report**

California Title 22 Metals			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	143485
Units:	mg/Kg	Prepared:	10/09/08
Basis:	as received	Analyzed:	10/10/08
Diln Fac:	1.000		

Type: BS Lab ID: QC464534

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	102.2	102	80-120
Arsenic	50.00	50.98	102	80-120
Barium	100.0	105.7	106	80-120
Beryllium	2.500	2.717	109	80-120
Cadmium	10.00	10.69	107	80-120
Chromium	100.0	104.7	105	80-120
Cobalt	25.00	25.61	102	80-120
Copper	12.50	13.15	105	80-120
Lead	100.0	101.9	102	80-120
Molybdenum	20.00	21.08	105	80-120
Nickel	25.00	25.62	102	80-120
Selenium	50.00	51.54	103	80-120
Silver	10.00	10.32	103	80-120
Thallium	50.00	51.57	103	80-120
Vanadium	25.00	26.17	105	80-120
Zinc	25.00	26.23	105	80-120

Type: BSD Lab ID: QC464535

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	102.0	102	80-120	0	20
Arsenic	50.00	51.64	103	80-120	1	20
Barium	100.0	106.7	107	80-120	1	20
Beryllium	2.500	2.729	109	80-120	0	20
Cadmium	10.00	10.68	107	80-120	0	20
Chromium	100.0	105.2	105	80-120	1	20
Cobalt	25.00	25.70	103	80-120	0	20
Copper	12.50	13.19	106	80-120	0	20
Lead	100.0	101.1	101	80-120	1	20
Molybdenum	20.00	21.07	105	80-120	0	20
Nickel	25.00	25.52	102	80-120	0	20
Selenium	50.00	51.12	102	80-120	1	20
Silver	10.00	10.35	103	80-120	0	20
Thallium	50.00	51.37	103	80-120	0	20
Vanadium	25.00	26.22	105	80-120	0	20
Zinc	25.00	26.59	106	80-120	1	20



**Batch QC Report**

<b>California Title 22 Metals</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Units:	mg/Kg
Type:	Serial Dilution	Basis:	dry
MSS Lab ID:	206712-001	Batch#:	143485
Lab ID:	QC464538	Sampled:	10/03/08
Matrix:	Soil	Received:	10/08/08

Moisture: 18%

Analyte	MSS Result	MSS RL	Result	RL	% Diff	Lim	Diln	Fac	Analyzed
Antimony	1.660	0.6098	1.126 J	2.690	NC	10	5.000		10/10/08
Arsenic	14.78	0.3049	15.51	1.452	5	10	5.000		10/10/08
Barium	224.0	0.3049	245.3	1.452	10	10	5.000		10/10/08
Beryllium	0.5810	0.1220	0.6077	0.5807	5	10	5.000		10/10/08
Cadmium	2.843	0.3049	2.963	1.452	4	10	5.000		10/10/08
Chromium	38.74	0.3049	42.18	1.452	9	10	5.000		10/10/08
Cobalt	12.76	0.3049	14.30	1.452	12 *	10	5.000		10/10/08
Copper	300.7	0.3049	306.0	1.452	2	10	5.000		10/10/08
Lead	1,796	3.892	1,643	19.46	9	10	100.0		10/11/08
Molybdenum	ND	0.3049	ND	1.452	NC	10	5.000		10/10/08
Nickel	89.74	0.3049	100.7	1.452	12 *	10	5.000		10/10/08
Selenium	ND	0.6098	ND	1.755	NC	10	5.000		10/10/08
Silver	0.2732	0.3049	ND	1.452	NC	10	5.000		10/10/08
Thallium	ND	0.6098	ND	1.888	NC	10	5.000		10/10/08
Vanadium	52.61	0.3049	56.01	1.452	6	10	5.000		10/10/08
Zinc	868.6	23.23	770.0	116.1	11 *	10	100.0		10/11/08

\*= Value outside of QC limits; see narrative

J= Estimated value

NC= Not Calculated

ND= Not Detected

RL= Reporting Limit

**Batch QC Report**

<b>California Title 22 Metals</b>			
Lab #:	206501	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3050B
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Units:	mg/Kg
Type:	Post Digest Spike	Basis:	dry
MSS Lab ID:	206712-001	Batch#:	143485
Lab ID:	QC464539	Sampled:	10/03/08
Matrix:	Soil	Received:	10/08/08

Moisture: 18%

Analyte	MSS Result	Spiked	Result	%REC	Limits	Diln	Fac	Analyzed
Antimony	1.660	116.1	112.9	96	75-125	1.000		10/10/08
Arsenic	14.78	58.07	68.69	93	75-125	1.000		10/10/08
Barium	224.0	116.1	320.1	83	75-125	1.000		10/10/08
Beryllium	0.5810	2.904	3.339	95	75-125	1.000		10/10/08
Cadmium	2.843	11.61	13.16	89	75-125	1.000		10/10/08
Chromium	38.74	116.1	141.9	89	75-125	1.000		10/10/08
Cobalt	12.76	29.04	37.10	84	75-125	1.000		10/10/08
Copper	300.7	14.52	306.7	41 NM	75-125	1.000		10/10/08
Lead	1,796	2,323	3,829	88	75-125	20.00		10/11/08
Molybdenum	<0.07263	23.23	20.72	89	75-125	1.000		10/10/08
Nickel	89.74	29.04	111.5	75	75-125	1.000		10/10/08
Selenium	<0.1170	58.07	55.19	95	75-125	1.000		10/10/08
Silver	0.2732	11.61	10.81	91	75-125	1.000		10/10/08
Thallium	<0.1259	58.07	47.61	82	75-125	1.000		10/10/08
Vanadium	52.61	29.04	77.71	86	75-125	1.000		10/10/08
Zinc	868.6	580.7	1,362	85	75-125	20.00		10/11/08

NM= Not Meaningful: Sample concentration &gt; 4X spike concentration

207399

**Subject:** Additional Analysis

**From:** "Ferlic, Carolyn" <carolyn.ferlic@ttemi.com>

**Date:** Mon, 3 Nov 2008 08:51:47 -0800

**To:** "Anne Kathain" <anne@ctberk.com>

Hey Anne –

We are going to need some additional tests on the samples I brought in a few weeks ago. I believe they were all brought in on Oct 1, C&T job 206501.

For Sample WTAA-002-WASTE01 will you please run the TCLP for Lead, Mercury, Silver, Heptachlor, and Chlordane

For Sample WTAA-001-WASTE04 will you please run the TCLP for Lead and Heptachlor

If you can give me a cost estimate for this as well, I would appreciate it. A standard turn around time will be fine.

I will be in the office all day today if you have any questions.

Thanks! Carolyn

**Carolyn Ferlic | Environmental Engineer**

Direct: 415.222.8233 | Main: 415.543.4880 | Fax: 415.543.5480  
carolyn.ferlic@ttemi.com

Tetra Tech EM Inc.  
135 Main Street, Suite 1800 | San Francisco, CA 94105 | www.tetrattech.com

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**Tetra Tech EM Inc.**  
San Francisco Office

135 Main St. Suite 1800  
San Francisco, CA 94105  
415-543-4880  
Fax 415-543-5480

206501

# Chain of Custody Record No. 6688

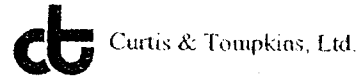
Project name: <b>Campfire TARA</b>	Lab PO#:	Lab: <b>CTT</b>	No./Container Types		Analysis Required		Preservative Added	
Project (CTO) number: <b>10SDS1518019</b>	TEEMI technical contact: <b>Sara Woolley</b>	Field samplers: <b>Carolyn Ferlic</b>	40 ml VOA	1 liter Amber	500 ml Poly	Sieve	Glass Jar	8oz.
Sample ID	TEEMI project manager: <b>Jason Broderson</b>	Field samplers' signatures: <b>Carolyn J. Ferlic</b>	VOA	MS / MSD	Metals	TPH Purgeables	TPH Extractables	
<b>1 RFS-WTAA-002-WASTE01</b>	Sample Location (Pt. ID)	Date	Time	Matrix				
<b>2 RFS-WTAA-002-WASTE02</b>		10/10/08	10:00	SDI 1				
<b>3 RFS-WTAA-001-WASTE04</b>			11:40					

Relinquished by:	Name (print)	Company Name	Date	Time
Received by: <i>[Signature]</i>	<b>CAROLYN FERLIC</b>	<b>TEEMI</b>	10/10/08	14:22
Relinquished by:	<b>Carolyn</b>	<b>CTT</b>	10/11/08	14:22
Received by:				
Relinquished by:				
Received by:				

Turnaround time/remarks:  
**Metals - CAM17 by 6010**  
**Run both PEST AND PCB**  
*on ice, intact*  
**Standard TAT**  
*intact or ice U3.*



COOLER RECEIPT CHECKLIST



Login # 206501 Date Received 10/1/08 Number of coolers  
Client TETRA TECH Project CAMPFIRE TCA

Date Opened 10/1/08 By (print) M. VILLANUEVA (sign) [Signature]  
Date Logged in [Signature] By (print) [Signature] (sign)

1. Did cooler come with a shipping slip (airbill, etc)? ..... YES  NO

Shipping info \_\_\_\_\_

2A. Were custody seals present? ....  YES (circle) on cooler on samples  NO  
How many \_\_\_\_\_ Name \_\_\_\_\_ Date \_\_\_\_\_

2B. Were custody seals intact upon arrival? ..... YES NO  N/A

3. Were custody papers dry and intact when received? .....  YES NO

4. Were custody papers filled out properly (ink, signed, etc)? .....  YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) .....  YES NO

6. Indicate the packing in cooler: (if other, describe) \_\_\_\_\_  
 Bubble Wrap  Foam blocks  Bags  None  
 Cloth material  Cardboard  Styrofoam  Paper towels

7. Temperature documentation:

Type of ice used:  Wet  Blue/Gel  None Temp(°C) 5.7

Samples Received on ice & cold without a temperature blank

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ..... YES  NO  
If YES, what time were they transferred to freezer? \_\_\_\_\_

9. Did all bottles arrive unbroken/unopened? .....  YES NO

10. Are samples in the appropriate containers for indicated tests? .....  YES NO

11. Are sample labels present, in good condition and complete? .....  YES NO

12. Do the sample labels agree with custody papers? .....  YES NO

13. Was sufficient amount of sample sent for tests requested? .....  YES NO

14. Are the samples appropriately preserved? ..... YES NO  N/A

15. Are bubbles > 6mm absent in VOA samples? ..... YES NO  N/A

16. Was the client contacted concerning this sample delivery? ..... YES NO  
If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

COMMENTS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### CASE NARRATIVE

Laboratory number: 207399  
Client: Tetra Tech EMI  
Project: 103DS1518019  
Location: Campfire TCRA  
Request Date: 11/03/08  
Samples Received: 10/01/08

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 11/03/08. See attached cooler receipt form for any sample receipt problems or discrepancies.

**Pesticides (EPA 8081A):**

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

No analytical problems were encountered.

**Metals (EPA 6010B and EPA 7470A):**

No analytical problems were encountered.

Organochlorine Pesticides			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3520C
Project#:	103DS1518019	Analysis:	EPA 8081A
Units:	ug/L	Received:	10/01/08
Batch#:	144656	Prepared:	11/08/08
Sampled:	10/01/08		

Field ID: RFS-WTAA-002-WASTE01      Matrix: TCLP Leachate  
 Type: SAMPLE      Diln Fac: 50.00  
 Lab ID: 207399-001      Analyzed: 11/18/08

Analyte	Result	RL
Heptachlor	4.6	2.4
alpha-Chlordane	14	2.4
gamma-Chlordane	11	2.4

Surrogate	%REC	Limits
TCMX	DO	37-120
Decachlorobiphenyl	DO	29-141

Field ID: RFS-WTAA-001-WASTE04      Matrix: TCLP Leachate  
 Type: SAMPLE      Diln Fac: 10.00  
 Lab ID: 207399-002      Analyzed: 11/18/08

Analyte	Result	RL
Heptachlor	ND	0.53
alpha-Chlordane	ND	0.53
gamma-Chlordane	ND	0.53

Surrogate	%REC	Limits
TCMX	DO	37-120
Decachlorobiphenyl	DO	29-141

Type: BLANK      Diln Fac: 1.000  
 Lab ID: QC469549      Analyzed: 11/13/08  
 Matrix: Water

Analyte	Result	RL
Heptachlor	ND	0.050
alpha-Chlordane	ND	0.050
gamma-Chlordane	ND	0.050

Surrogate	%REC	Limits
TCMX	92	37-120
Decachlorobiphenyl	112	29-141

DO= Diluted Out  
 ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Organochlorine Pesticides			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3520C
Project#:	103DS1518019	Analysis:	EPA 8081A
Matrix:	Water	Batch#:	144656
Units:	ug/L	Prepared:	11/08/08
Diln Fac:	1.000	Analyzed:	11/13/08

Type: BS Lab ID: QC469550

Analyte	Spiked	Result	%REC	Limits
Heptachlor	0.2000	0.2464	123	48-127

Surrogate	%REC	Limits
TCMX	120	37-120
Decachlorobiphenyl	130	29-141

Type: BSD Lab ID: QC469551

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Heptachlor	0.2000	0.2217	111	48-127	11	30

Surrogate	%REC	Limits
TCMX	118	37-120
Decachlorobiphenyl	111	29-141

### Metals Analytical Report

Lab #:	207399	Project#:	103DS1518019
Client:	Tetra Tech EMI	Location:	Campfire TCRA
Units:	ug/L	Received:	10/01/08
Sampled:	10/01/08		

Field ID: RFS-WTAA-002-WASTE01      Lab ID: 207399-001  
 Type: SAMPLE      Matrix: TCLP Leachate

Analyte	Result	RL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Lead	15,000	30	10.00	144580	11/06/08	11/07/08	EPA 3010A	EPA 6010B
Mercury	0.95 J	1.0	1.000	144850	11/13/08	11/13/08	METHOD	EPA 7470A
Silver	ND	50	10.00	144580	11/06/08	11/07/08	EPA 3010A	EPA 6010B

Field ID: RFS-WTAA-001-WASTE04      Batch#: 144580  
 Type: SAMPLE      Prepared: 11/06/08  
 Lab ID: 207399-002      Analyzed: 11/07/08  
 Matrix: TCLP Leachate      Prep: EPA 3010A  
 Diln Fac: 10.00      Analysis: EPA 6010B

Analyte	Result	RL
Lead	2,700	30

Type: BLANK      Prepared: 11/06/08  
 Lab ID: QC469208      Analyzed: 11/07/08  
 Matrix: TCLP Leachate      Prep: EPA 3010A  
 Diln Fac: 10.00      Analysis: EPA 6010B  
 Batch#: 144580

Analyte	Result	RL
Lead	ND	30
Silver	ND	50

Type: BLANK      Prepared: 11/13/08  
 Lab ID: QC470377      Analyzed: 11/13/08  
 Matrix: Water      Prep: METHOD  
 Diln Fac: 1.000      Analysis: EPA 7470A  
 Batch#: 144850

Analyte	Result	RL
Mercury	ND	0.20

J= Estimated value  
 ND= Not Detected  
 RL= Reporting Limit  
 Page 1 of 1

## Batch QC Report

Metals Analytical Report			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3010A
Project#:	103DS1518019	Analysis:	EPA 6010B
Matrix:	TCLP Leachate	Batch#:	144580
Units:	ug/L	Prepared:	11/06/08
Diln Fac:	1.000	Analyzed:	11/07/08

Type: BS Lab ID: QC469209

Analyte	Spiked	Result	%REC	Limits
Lead	2,000	1,901	95	80-120
Silver	200.0	184.2	92	80-120

Type: BSD Lab ID: QC469210

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Lead	2,000	1,970	99	80-120	4	20
Silver	200.0	195.3	98	80-120	6	20

RPD= Relative Percent Difference

## Batch QC Report

Metals Analytical Report			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3010A
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	144580
MSS Lab ID:	207408-001	Sampled:	11/02/08
Matrix:	TCLP Leachate	Received:	11/03/08
Units:	ug/L	Prepared:	11/06/08
Diln Fac:	10.00	Analyzed:	11/07/08

Type: MS Lab ID: QC469211

Analyte	MSS Result	Spiked	Result	%REC	Limits
Lead	3,975	2,000	5,943	98	71-120
Silver	<10.54	200.0	183.5	92	69-120

Type: MSD Lab ID: QC469212

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Lead	2,000	5,951	99	71-120	0	20
Silver	200.0	182.8	91	69-120	0	20

RPD= Relative Percent Difference

## Batch QC Report

Metals Analytical Report			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3010A
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Diln Fac:	50.00
Type:	Serial Dilution	Batch#:	144580
MSS Lab ID:	207408-001	Sampled:	11/02/08
Lab ID:	QC469213	Received:	11/03/08
Matrix:	TCLP Leachate	Analyzed:	11/07/08
Units:	ug/L		

Analyte	MSS Result	MSS RL	Result	RL	% Diff	Lim
Lead	3,975	30.00	4,122	150.0	4	10
Silver	ND	50.00	ND	250.0	NC	10

NC= Not Calculated  
 ND= Not Detected  
 RL= Reporting Limit



## Batch QC Report

Metals Analytical Report			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	EPA 3010A
Project#:	103DS1518019	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Diln Fac:	10.00
Type:	Post Digest Spike	Batch#:	144580
MSS Lab ID:	207408-001	Sampled:	11/02/08
Lab ID:	QC469214	Received:	11/03/08
Matrix:	TCLP Leachate	Analyzed:	11/07/08
Units:	ug/L		

Analyte	MSS Result	Spiked	Result	%REC	Limits
Lead	3,975	20,000	22,670	93	75-125
Silver	<10.54	2,000	1,869	93	75-125

## Batch QC Report

Metals Analytical Report			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	144850
Matrix:	Water	Prepared:	11/13/08
Units:	ug/L	Analyzed:	11/13/08
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC470378	5.000	5.150	103	80-120		
BSD	QC470379	5.000	5.260	105	80-120	2	20

## Batch QC Report

Metals Analytical Report					
Lab #:	207399	Location:	Campfire TCRA		
Client:	Tetra Tech EMI	Prep:	METHOD		
Project#:	103DS1518019	Analysis:	EPA 7470A		
Analyte:	Mercury	Units:	ug/L		
Field ID:	RFS-WTAA-002-WASTE01	Diln Fac:	5.000		
Type:	Serial Dilution	Batch#:	144850		
MSS Lab ID:	207399-001	Sampled:	10/01/08		
Lab ID:	QC470381	Received:	10/01/08		
Matrix:	TCLP Leachate	Analyzed:	11/13/08		
MSS Result	MSS RL	Result	RL	% Diff	Lim
0.9450	1.000	ND	5.000	NC	10

NC= Not Calculated  
 ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Metals Analytical Report			
Lab #:	207399	Location:	Campfire TCRA
Client:	Tetra Tech EMI	Prep:	METHOD
Project#:	103DS1518019	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	144850
Field ID:	RFS-WTAA-002-WASTE01	Sampled:	10/01/08
MSS Lab ID:	207399-001	Received:	10/01/08
Matrix:	TCLP Leachate	Prepared:	11/13/08
Units:	ug/L	Analyzed:	11/13/08
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC470382	0.9450	25.00	27.80	107	71-124		
MSD	QC470383		25.00	27.55	106	71-124	1	20

RPD= Relative Percent Difference

**APPENDIX E**  
**WASTE PROFILE SHEETS AND MANIFEST**

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Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: **CAD983569268**

2. Page 1 of 1

3. Emergency Response Phone: **(877) 577-2669**

4. Manifest Tracking Number: **005043029 JJK**

5. Generator's Name and Mailing Address: **UNIVERSITY OF CALIF., BERKELEY OFFICE OF EMS, 317 UNIVERSITY HALL, 3RD FLOOR, BERKELEY CA 94720-1150 (510)643-6384**

Generator's Site Address (if different than mailing address): **UNIVERSITY OF CALIF., BERKELEY RICHMOND FIELD STATION, 1301 SOUTH 46TH STREET, RICHMOND CA 94804 (510)643-7195**

U.S. EPA ID Number: **CAD980164012**

6. Transporter 1 Company Name: **21st CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA, LLC**

U.S. EPA ID Number: **CAD980164012**

7. Transporter 2 Company Name: **WAD991281767**

U.S. EPA ID Number: **WAD991281767**

8. Designated Facility Name and Site Address: **WELLINGTON ENVIRONMENTAL, LLC. EDRY FACILITY, 20245 77TH AVENUE SOUTH, EDRY, WA 98022 (253) 872-8038**

Facility's Phone: **EDRY, WA 98022 (253) 872-8038**

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
X	UN3432 POLYCHLORINATED BIPHENYLS, SOLID 9 PGII	1	CF	3700	P	611
ED	UN3077 HAZARDOUS WASTE, SOLID, N.O.S. (ACID, CHLORINE) 9 PGII	3	CF	7,600	P	611 0007 0008

14. Special Handling Instructions and Additional Information: **(1) 397638-00 - DRG(171) TSCA SOIL AND DEBRIS (2) 397645-00 - DRG(171) DECA SOIL AND DEBRIS**

*Complete TERA soil + waste*

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/piccarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA-Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offero's Printed/Typed Name: **David James Kuhlman** Signature: *David James Kuhlman*

16. International Shipments  Import to U.S.  Export from U.S. Port of entry/exit: **12/15/08** Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: **Joseph Foster** Signature: *Joseph Foster*

Transporter 2 Printed/Typed Name: **Gregory Butty** Signature: *Gregory Butty*

Month Day Year: **12/15/08**

18. Discrepancy

18a. Discrepancy Indication Space  Quantity  Type  Residue  Partial Rejection  Full Rejection

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAD983669268</b>	2. Page 1 of <b>2</b>	3. Emergency Response Phone <b>(877) 577-2669</b>	4. Manifest Tracking Number <b>005043029 JJK</b>					
5. Generator's Name and Mailing Address <b>UNIVERSITY OF CA., BERKELEY OFFICE OF EH&amp;S 317 UNIVERSITY HALL, 3RD FLOOR BERKELEY CA 94720-1150 (510)643-6384</b>				Generator's Site Address (if different than mailing address) <b>UNIVERSITY OF CALIF., BERKELEY RICHMOND FIELD STATION 1301 SOUTH 46TH STREET RICHMOND CA 94804 (510)643-7195</b>						
6. Transporter 1 Company Name <b>21st CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA, LLC</b>				U.S. EPA ID Number <b>CAR000164012</b>						
7. Transporter 2 Company Name <b>ROCKETLINE CARRIER SERVICE</b>				U.S. EPA ID Number <b>TXR000050072</b>						
8. Designated Facility Name and Site Address <b>BURLINGTON ENVIRONMENTAL, LLC. KENT FACILITY 20245 77TH AVENUE SOUTH KENT, WA 98032 (253) 872-8030</b>				U.S. EPA ID Number <b>WAD991281767</b>						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes		
				No.	Type					
	<b>X</b>	<b>UN3432 POLYCHLORINATED BIPHENYLS, SOLID 9 PGIII</b>			<b>1</b>	<b>CF</b>	<b>3,700</b>	<b>P</b>	<b>611</b>	
	<b>RQ</b>	<b>HA3077 HAZARDOUS WASTE, SOLID, N.O.S. (LEAD, CHROMIUM) 9 PGIII RQ(D008)</b>			<b>3</b>	<b>CF</b>	<b>9,600</b>	<b>P</b>	<b>611 D007 D008</b>	
14. Special Handling Instructions and Additional Information <b>(1) 397638-00 - ERG(171) TSCA SOIL AND DEBRIS (2) 397645-00 - ERG(171) RCRA SOIL AND DEBRIS Camp fire TCRA project waste</b>										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offereor's Printed/Typed Name <b>Karl Hans</b>								Signature <i>Karl Hans</i>		Month Day Year <b>12 15 08</b>
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____										
17. Transporter Acknowledgment of Receipt of Materials										
Transporter 1 Printed/Typed Name <b>Jerry Foster</b>								Signature <i>Jerry Foster</i>		Month Day Year <b>12 15 08</b>
Transporter 2 Printed/Typed Name <b>DAVID Lopez</b>								Signature <i>David Lopez</i>		Month Day Year <b>12 16 08</b>
18. Discrepancy										
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection										
Manifest Reference Number: _____ U.S. EPA ID Number _____										
18b. Alternate Facility (or Generator)										
Facility's Phone: _____								Month Day Year		
18c. Signature of Alternate Facility (or Generator)										
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)										
1.		2.		3.		4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a										
Printed/Typed Name <b>Christine Crisostomo</b>								Signature <i>Christine Crisostomo</i>		Month Day Year <b>12 23 08</b>

9159M

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY





## Generator's Waste Profile 397638-00

Starts : 03 DEC 2008  
 Expires: 31 DEC 2009  
 Printed: 03 DEC 2008

Status : PENDING

Sales Rep 256 Jennifer Abbott  
 Acct Mngr 0043 David Sato

**A: GENERATOR ( 21508 ) SITE INFORMATION**

UNIVERSITY OF CALIF.,BERKELEY RICHMOND FIELD EPA CAD983669268  
 1301 SOUTH 46TH STREET SIC 8221 N  
 RICHMOND, CA 94804  
 > Contact KELLEY ETHERINGTON Phone (510) 643-7195

**B: CUSTOMER ( 41107 ) INFORMATION**

UNIV. OF CALIFORNIA CAPITAL PROJECTS - ACCT.  
 1936 UNIVERSITY AVE, ROOM 280  
 BERKELEY, CA 94707-7027

**C: WASTE INFORMATION**

On File &gt; MSDS No Analysis Yes Sample No

Waste Name TSCA SOIL AND DEBRIS FROM FIRE PIT: WASTESTREAM WTAA-001  
 Process SITE REMEDIATION

**D: PHYSICAL CHARACTERISTICS OF WASTE**

Phys States S-Sol Top Color VARIES  
 Mid Color  
 Bot Color

Odor None  
 Layers Single Phased  
 Spec Grav 1.0-1.4

PH Range NT  
 Free Liq % NONE  
 Flash Test NT  
 Flash Rnge NotTested

**E: CHEMICAL COMPOSITION OF WASTE**

Information Provided By Generator

CONTAMINATED SOIL	( 80 - 90 % )	HEPTACHLOR	( <0.008 ppb )
DEBRIS: PPE/GLASS/METAL/PLASTIC	( 10 - 20 % )	LEAD, TOTAL	( 1800 mgk )
POLYCHLORINATED BIPHENYLS	( 80.4 mgk )	LEAD, TCLP	( 2.7 mgl )
PCB's 80.4 PPM	Cyanides NS	Phenolics NS	Sulfides NS
			VOC <500 PPM

**F: METALS METHOD**

Total	Cadmium 5.1 PPM	Chromium 72 PPM	Silver 55 PPM	Zinc 1700 PPM
Arsenic 20 PPM	Merc TCLP NT	Selenium ND	Nickel 97 PPM	Copper 2200 PPM
Barium 720 PPM	Lead 1800 PPM	Merc Tot 3.8 PPM	Thallium ND	Chrome-6
			Vanadium 41 PPM	Cobalt 15 PPM

**G: OTHER CHARACTERISTICS OF WASTE**

Ign. Solid No Oxidizer No Explosive No Shock Sensitive No Water Reactive No Reactive No

**H: EPA / STATE WASTE IDENTIFICATION**

Dangerous / Hazardous Yes DW / EHW DW TSCA Yes Universal Waste No  
 Form W301 Source G44 Origin 2 SubPart CC No NESHAPS No CERCLA No Debris No Waste Water No

EPA Codes

State Codes 611

**I: SHIPPING INFORMATION**

Marine Pollutant No Dangerous Wet No Inhalation Hazard No Poison No

Containers CF Fiber Container

Qty to Ship Now

Projected Volume Monthly

DOT Descrip UN3432 POLYCHLORINATED BIPHENYLS, SOLID 9 PGIII ERG(171)

**J: SPECIAL HANDLING INFORMATION**

TSCA: ALL SHIPMENTS MUST HAVE THE FOLLOWING INFORMATION: OUT OF SERVICE DATE FOR ALL ITEMS; UNIQUE IDENTIFICATION NUMBER FOR ALL PCB CONTAINERS, PCB ARTICLE CONTAINERS, AND PCB ARTICLES; WEIGHT MUST BE MANIFESTED IN KILOGRAMS;

Waste Categs PCB08

**Generator's Waste Profile 397638-00**

Starts : 03 DEC 2008  
Expires: 31 DEC 2009  
Printed: 03 DEC 2008

Status : PENDING

Sales Rep 256 Jennifer Abbott  
Acct Mngr 0043 David Sato

**GENERATOR CERTIFICATION**

I hereby certify, as an authorized representative of the Generator named above, that BEI has been fully informed of all information known about this waste, including but not limited to, the waste's generation process, composition, and physical characteristics, necessary to identify proper treatment and disposal of waste and this information is true and accurate.

If this is an existing profile which is being renewed, I hereby certify that there have been no changes in this waste, chemical, physical, or regulatory designation since full characterization by sample testing.

  
Signature

Greg Haet  
Printed Name

Assoc. Director  
Title

12/4/08  
Date

Philip maintains the requisite permits and agrees to accept this waste stream, as described.

## Generator's Waste Profile 397645-00

Starts : 03 DEC 2008  
 Expires: 31 DEC 2009  
 Printed: 03 DEC 2008

Status : PENDING

Sales Rep 256 Jennifer Abbott  
 Acct Mngr 0043 David Sato

**A: GENERATOR ( 21508 ) SITE INFORMATION**

UNIVERSITY OF CALIF.,BERKELEY RICHMOND FIELD EPA CAD983669268  
 1301 SOUTH 46TH STREET SIC 8221 N  
 RICHMOND, CA 94804  
 > Contact KELLEY ETHERINGTON Phone (510) 643-7195

**B: CUSTOMER ( 41107 ) INFORMATION**

UNIV. OF CALIFORNIA CAPITAL PROJECTS - ACCT.  
 1936 UNIVERSITY AVE, ROOM 280  
 BERKELEY, CA 94707-7027

**C: WASTE INFORMATION**

On File &gt; MSDS No Analysis No Sample No

Waste Name RCRA SOIL AND DEBRIS FROM FIRE PIT: WASTESTREAM WTAA-002  
 Process SITE REMEDIATION

**D: PHYSICAL CHARACTERISTICS OF WASTE**

Phys States S-Sol Top Color VARIES  
 Mid Color  
 Bot Color

Odor None  
 Layers Single Phased  
 Spec Grav 1.0-1.4

PH Range NT  
 Free Liq % NONE  
 Flash Test NT  
 Flash Rnge NotTested

**E: CHEMICAL COMPOSITION OF WASTE**

Information Provided By Generator

CONTAMINATED SOIL	( 80 - 90 % )	HEPTACHLOR	( 4.6 ppb )
DEBRIS: PPE/GLASS/METAL/PLASTIC	( 10 - 20 % )	CHLORDANE, TCLP	( 25 ppb )
CHROMIUM	( 1300 mgk )	GAMMA-BHC (UHC)	( 1.6 mgk )
LEAD, TOTAL	( 1200 mgk )	CHLORDANE (UHC)	( 87 mgk )
LEAD, TCLP	( 15 mgl )	P, P'-DDE (UHC)	( 5 mgk )
MERCURY, TOTAL	( 11 ppb )	HEPTACHLOR (UHC)	( 27 mgk )
MERCURY, TCLP	( 0.95 ppb )	POLYCHLORINATED BIPHENYLS	( 13.13 mgk )

PCB's YES Cyanides NS Phenolics NS Sulfides NS VOC <500 PPM

**F: METALS METHOD**

Total	Cadmium 14 PPM	Chromium 1300 PPM	Silver 110 PPM	Zinc 5300 PPM
Arsenic 30 PPM	Merc TCLP 0.95 PPB	Selenium ND	Nickel 740 PPM	Copper 3300 PPM
Barium 990 PPM	Lead 1200 PPM	Merc Tot 11 PPM	Thallium ND	Chrome-6
			Vanadium 39 PPM	Cobalt 28 PPM

**G: OTHER CHARACTERISTICS OF WASTE**

Ign. Solid No Oxidizer No Explosive No Shock Sensitive No Water Reactive No Reactive No

**H: EPA / STATE WASTE IDENTIFICATION**

Dangerous / Hazardous Yes DW / EHW DW TSCA No Universal Waste No

Form W301 Source G44 Origin 2 SubPart CC No NESHAPS No CERCLA No Debris No Waste Water No

EPA Codes D007 D008

State Codes 611

**I: SHIPPING INFORMATION**

Marine Pollutant No Dangerous Wet No Inhalation Hazard No Poison No

Containers CF Fiber Container

Qty to Ship Now

Projected Volume

DOT Descrip NA3077 HAZARDOUS WASTE, SOLID, N.O.S. (LEAD, CHROMIUM) 9 PGIII ERG(171)

**J: SPECIAL HANDLING INFORMATION**

TSCA: ALL SHIPMENTS MUST HAVE THE FOLLOWING INFORMATION: OUT OF SERVICE DATE FOR ALL ITEMS; UNIQUE IDENTIFICATION NUMBER FOR ALL PCB CONTAINERS, PCB ARTICLE CONTAINERS, AND PCB ARTICLES; WEIGHT MUST BE MANIFESTED IN KILOGRAMS;

Waste Categs INC13

**Generator's Waste Profile 397645-00**

Starts : 03 DEC 2008  
Expires: 31 DEC 2009  
Printed: 03 DEC 2008


Status : PENDING

Sales Rep 256 Jennifer Abbott  
Acct Mngr 0043 David Sato

**GENERATOR CERTIFICATION**

I hereby certify, as an authorized representative of the Generator named above, that BEI has been fully informed of all information known about this waste, including but not limited to, the waste's generation process, composition, and physical characteristics, necessary to identify proper treatment and disposal of waste and this information is true and accurate.

If this is an existing profile which is being renewed, I hereby certify that there have been no changes in this waste, chemical, physical, or regulatory designation since full characterization by sample testing.

	<u>Greg Haet</u>	<u>Assoc. Director</u>	<u>12/4/08</u>
Signature	Printed Name	Title	Date

Phillip maintains the requisite permits and agrees to accept this waste stream, as described.