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November 10, 2014

**RECEIVED**

*By Alameda County Environmental Health at 8:45 am, Nov 12, 2014*

Mr. Jerry Wickham  
Alameda County Health Care Services Agency  
Environmental Health Department  
1131 Harbor Bay Parkway Ste. 250  
Alameda, CA 94502-6577

Subject: R00000289  
REPORT OF TARGETED SOIL EXCAVATIONS 2011  
AND 2014, PETROLEUM HYDROCARBON RELEASES  
OWENS-BROCKWAY GLASS CONTAINER FACILITY.  
3600 ALAMEDA AVENUE, OAKLAND, CALIFORNIA.

Dear Mr. Wickham,

Owens-Brockway Glass Container Corporation is pleased to submit the attached Report of Targeted Soil Excavations for the above site.

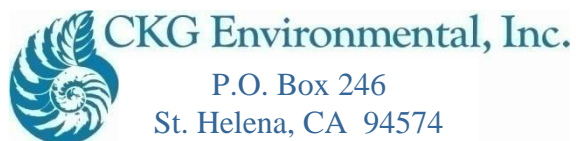
I declare under penalty of perjury that the information and recommendations contained in the attached report are true and correct to the best of my knowledge.

If you need further information feel free to call me at (567) 336-8682.

Sincerely,

Mark Tussing  
Environmental Administrator

**REPORT OF TARGETED SOIL EXCAVATIONS 2011 AND 2014,  
PETROLEUM HYDROCARBON RELEASES  
OWENS-BROCKWAY GLASS CONTAINER FACILITY  
3600 ALAMEDA AVENUE  
OAKLAND, CALIFORNIA**



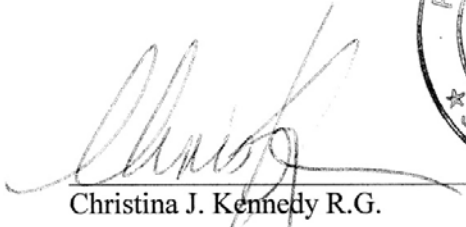
A Report Prepared for:

Mr. Mark Tussing  
Owens-Brockway Glass Container, Inc.  
One Michael Owens Way  
Perrysburg, OH 43551-2999

**REPORT OF TARGETED SOIL EXCAVATIONS 2011 AND 2014  
PETROLUEM HYDROCARBON RELEASES  
OWENS-BROCKWAY GLASS CONTAINER FACILITY  
3600 ALAMEDA AVENUE  
OAKLAND, CALIFORNIA**

November 9, 2014

Prepared by:



Christina J. Kennedy R.G.



**Principal**

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ATTACHMENT 2 – Construction Closeout Report Underground Facilities Removal (UFR) Project, June 2014



## 1.0 EXECUTIVE SUMMARY

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The Owens-Brockway glass manufacturing facility is located at 3600 Alameda Avenue in Oakland, California. Onsite facilities include the operating glass manufacturing plant, warehouses, and offices. Two former underground fuel storage tank (UST) areas existed at the Oakland plant.

The following report presents the results of excavation activities completed in August 2011 and June 2014. These excavation activities were designed to address petroleum hydrocarbon source areas at the plant and were completed in accordance with CKG Environmental, Inc's Corrective Action Plan dated November 30, 2010 and Revised Corrective Action Plan dated January 17, 2014. Between the two excavation events a total of four excavations were completed with total quantities of petroleum hydrocarbon impacted soil removed as follows:

Excavation B (2011) 2834.45 tons

Excavation D (2011) 2988.24 tons

Excavation C (2014) 460 tons

Excavation E (2014) 1541 tons

In all four excavations Oxygen Release Compound (ORC Advanced) was placed in the bottoms in contact with groundwater to promote further biodegradation of petroleum hydrocarbons in place.

The removal of source materials at the four locations is partial completion of an overall site remediation program that is being completed in phases. Some potential source areas are simply not accessible at the active glass plant and will be addressed at some time in the future when the plant operations cease. A groundwater treatment biobarrier is presently being designed and its implementation will be documented under separate cover. After the biobarrier is installed quarterly groundwater monitoring will be used to evaluate remediation effectiveness.

## 2.0 INTRODUCTION

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The following Report of Targeted Excavation and In-Situ Chemical Oxidation presents the actions completed and results obtained from implementing the Corrective Action Plan dated November 30, 2010 and the Revised Corrective Action Plan dated January 17, 2014 both prepared by CKG Environmental, Inc. (CKG). These documents were submitted to the Alameda County Environmental Health Department (ACEHD). A total of four targeted excavations were completed in two separate events. Excavations B and D were complete in August 2011. Excavations C and E were completed in June 2014. This report is organized such that overall site information is presented here and details regarding the two excavation events are contained in the two attached construction closeout reports.

### 2.1 SITE DESCRIPTION

The Owens-Brockway glass manufacturing facility is located at 3600 Alameda Avenue in Oakland, California (Plate 1). The site is located to the north of the Oakland Estuary with Fruitvale Avenue to the west, a Home Depot to the east, and residences to the north. Onsite facilities include the operating glass manufacturing plant, warehouses, and offices (Plate 2).

Two former underground fuel storage tank (UST) areas existed at the Oakland plant (Plate 2). The first UST area was located on the west side of the plant and included three fuel oil USTs and potentially one small waste oil UST. Also in this area is a former lube oil tank located adjacent to the plant, between the Batch Building and the Furnace Building. Releases of fuel oil to the subsurface were observed when the USTs were removed.

The second UST area was located near the central part of the plant adjacent to the compressor building. Originally there were four USTs in this area and upon removal a gasoline release to the subsurface was observed. Two 24,000 gallon fuel oil USTs were installed in this area following the removal of the original four USTs, and these two USTs were removed in 1998.

## **2.2 PETROLEUM HYDROCARBON STORAGE**

Petroleum hydrocarbons were stored in underground storage tanks located in various areas of the site as shown on Plate 2

### **2.2.1 Western Fuel Storage Area**

One UST site is located on the west side of the plant and included three former USTs, which were used to contain fuel as follows:

- 8,300 gallon lube oil
- 24,000 gallon fuel oil
- 24,000 gallon fuel oil

At the time these USTs were removed in 1987 it was discovered that fuel oil had been released to the subsurface. Owens-Brockway excavated impacted soil at the time the USTs were removed. Past efforts to remove floating hydrocarbon product associated with the fuel oil release have been unsuccessful. This lack of success is mainly due to the clay rich nature of the subsurface and the viscosity of the product. Groundwater monitoring has been ongoing since 1987.

A smaller waste oil UST is thought to have been located adjacent to the forklift ramp next to the bottling plant. The size and status of this UST is not known.

A lube oil UST was formerly located between the Furnace Building and the Batch Building. Details regarding this tank are unknown except that it was reportedly removed.

### **2.2.2 Central Fuel Storage Area**

The second UST area is located near the central part of the plant adjacent to the compressor building. Originally there were four fuel USTs in the area as follows:

- 500 gallon diesel
- 4,000 gallon diesel

- 4,000 gallon gasoline
- 15,000 gallon diesel

When they were removed in 1986 a gasoline release to the subsurface was observed. Owens-Brockway excavated impacted soil at the time these USTs were removed. Two 24,000 gallon fuel oil USTs were installed in this area following the removal of the original four USTs, and these two USTs were removed in 1998. No indications of fuel releases were noted at that time.

## **2.3 SUMMARY OF HISTORICAL INVESTIGATIONS**

The following presents a brief summary of site investigation and remediation history. A more thorough description is provided in the FS.

### **2.3.1 Western Fuel storage Area**

In September 1986 Exeltech removed a 16,000 gallon fuel oil UST along with 148 cubic yards of impacted soil. Also at that time they installed a 36-inch product recovery well (PR-1) in the excavation in an attempt to recover free phase fuel oil. Approximately six months after the product recovery well was installed Exeltech installed a product skimmer however no measurable quantity of product was recovered. The difficulty reportedly arose because the recovery equipment could not handle the viscosity of the product. Exeltech implemented triennial groundwater monitoring through 1987 and 1988.

In 1989 the equipment in the first product recovery well was upgraded and a second product recovery well (PR-2) was installed near MW-2. Product recovery efforts were still unsuccessful and abandoned.

In 1997 Kennedy Jenks Consultants (Kennedy Jenks) was retained to resume annual groundwater monitoring and to continue investigative and remediation work at the facility. In August 1997 a limited quantity of free floating product was removed from wells (MW-2, MW-5, and MW-6) using bailers and absorbent pads.

In January 1999 Kennedy Jenks completed an offsite investigation in which five Geoprobe™ borings were installed on the south side of Alameda Avenue to assess the downgradient extent of petroleum hydrocarbon impacted soil and groundwater. Three of the five borings indicated detectable concentrations of petroleum hydrocarbons.

In June 1999 Kennedy Jenks installed a Petro-Trap™ product skimmer but again the product recovery effort had limited success. In December 2000 Soakease™ absorbent pads were installed in MW-2, MW-5, MW-6, MW-7, MW-8 and MW-9. These pads are still in use. Also in December 2000 Kennedy Jenks installed MW-20 and incorporated it into the monitoring program.

In July 2001 CKG Environmental, Inc. (CKG) was retained to destroy the two unused product recovery wells. This action was taken because of concerns that the wells could act as migration pathways for surface water infiltration.

In May 2003 CKG installed MW-19 on the south side of Alameda Avenue and incorporated it in the annual monitoring program which CKG has been implementing since that time. Additionally, in May 2003 CKG completed Cone Penetration Testing (CPT) to evaluate the distribution of petroleum hydrocarbons in the fuel oil release area and to investigate potential preferential contaminant pathways related to the granular backfill surrounding underground utilities. Fifteen CPT points were installed and soil and groundwater samples were collected.

CKG prepared a Site Conceptual Model (SCM), dated April 3, 2009. To address the data gaps identified in the SCM CKG completed a data gap investigation commencing in August 2009. The data gap investigation included a comprehensive utility survey to accurately map out subsurface utilities. CKG then installed 41 soil borings using a Geoprobe™ rig. Soil and groundwater samples were collected for quantitative chemical analysis.

Field observations made and data collected during the subsurface explorations suggested that in the Western UST Area groundwater impacts were pervasive but that soil impacts were focused in the UST source areas. The remediation activities at the site indicate free-phase product at the

Western UST Area. This fuel oil has been difficult to extract from the subsurface due to the subsurface soil conditions at the site which have low permeability and hydraulic transmissivity.

### **2.3.2 Central fuel storage Area**

In 1986 three USTs (one 350 gallon, two 8,000 gallon and one 12,000 gallon) were removed and replaced with two double walled USTs (one for gasoline and one for diesel which were later removed in 1998). At the time the USTs were removed in 1986 a visible release from the gasoline UST was observed and 350 cubic yards of soil impacted soil were removed. No releases were reported from the tank removal in 1998.

In 1986 Exeltech conducted a subsurface investigation to determine potentially impacted soil and groundwater associated with the gasoline release. The results indicated impacted soil and groundwater, however, free-phase hydrocarbon product was not observed. The three wells located in the gasoline release area were incorporated into the triennial groundwater monitoring program. No other investigations or remedial actions have taken place in the gasoline release area.

The 2009 data gap investigation documented the presence of a previously undocumented diesel release located in the vicinity of the former UST area.

### **3.0 REMEDIATION ACTIVITIES**

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Remediation activities are being implemented in phases that include addressing some source areas and offsite migration of impacted groundwater. Other source areas and onsite groundwater are very difficult to address while the plant is operating. At such time as the plant closes, these areas will be addressed. There is no schedule for plant closure at this time. To date four source areas have been excavated. These include excavations B and D that were completed in August 2011 and excavations C and E that were completed in June 2014.

#### **3.1 EXCAVATIONS B AND D, AUGUST 2011**

In July and August 2011 CKG mobilized to the site and completed Excavations B and D as outlined in detail in Attachment 1 and shown on Plate 2. During those excavation activities it became clear that previously unknown subsurface obstructions and existing site facilities were going to make it difficult to address all source areas. Also at that time CKG discovered the presence of a previously unknown brick underground fuel oil storage structure that still contained aged fuel oil. That structure was removed in 2014 as discussed in Section 3.2

In total 2834.45 tons of impacted material was removed at Excavation B and 2988.24 tons of material was removed at excavation D. After excavation a slurry of ORC Advanced was placed in both excavations. Approximately 5550 pounds of ORC was placed in Excavation B and 8096 pounds of ORC was placed in Excavation D.

#### **3.2 EXCAVATIONS C AND E, JUNE 2012**

In June 2014 CKG mobilized to the site and completed Excavations C and E as outlined in detail in Attachment 2 and shown on Plate 2. Excavation C was targeted at a former lube oil UST adjacent to the plant building. Historical records were not clear regarding whether or not the UST had been removed so CKG was prepared to excavate it and remove it if necessary. The UST was not found in the excavation. Excavation E was placed at the location of the brick fuel oil storage structure that was discovered in 2011.

In total 460 tons of impacted material was removed at Excavation C and 1541 tons of material was removed at excavation E. After excavation was completed ORC Advanced pellets were placed in both excavations. Approximately 495 pounds of ORC was placed in Excavation C and 2035 pounds of ORC was placed in Excavation E.

### **3.3 PROPOSED BIOBARRIER**

CKG has prepared a conceptual design for a biobarrier to treat groundwater at the downgradient property boundary. The biobarrier will consist of a series of closely spaced wells which will be used for air sparging. The sparging will increase dissolved oxygen in the subsurface which will promote natural biodegradation in the groundwater. This design was submitted to ACEHD on August 13, 2014. CKG met with ACEHD on September 4, 2014 and received conditional concurrence with the plan. At this time the design and bid specifications are being prepared. CKG anticipates that the biobarrier will be installed in late 2014 and operated continuously until such time as groundwater impacts are low enough to meet corrective action goal yet to be determined. A report of biobarrier installation will be submitted separately.



## 4.0 REMEDIATION EFFECTIVENESS MONITORING

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Groundwater wells will be monitored to evaluate biological conditions and concentrations of site constituents. The ultimate goal is to remove TPH compounds from the groundwater. Therefore, a noticeable decline in GRO, DRO, and ORO concentrations in downgradient monitoring wells will be considered a successful implementation of the bio-barrier. The following wells will be monitored on a quarterly basis for the first year following startup of the bio-barrier:

MW-2R (upgradient)  
MW-3R (within the bio-barrier)  
MW-5 (upgradient)  
MW-6 (within the bio-barrier)  
MW-7 (within the bio-barrier)  
MW-10 (upgradient)  
MW-15 (within the bio-barrier)  
MW-19 (downgradient)  
MW-21 (downgradient)

To evaluate treatment performance, the collected groundwater samples will be tested for the following:

- TPH compounds by EPA Method 8015;
- benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, methyl-tert butyl ether (MTBE), and lead scavengers (ethylene dibromide and 1,2-dichloroethane) by EPA Method 8260B.
- heterotrophic plate counts by Standard Method (SM) 9215,
- alkalinity by EPA 310.1,
- and nitrate and nitrite, and sulfate by EPA 300.0

To evaluate the subsurface conditions for biodegradation to occur, the collected groundwater samples will be tested for dissolved oxygen (DO), pH, and oxygen reduction potential (ORP) in the field. In addition, groundwater levels will also be measured to understand groundwater flow direction and gradient.

Following one year of monitoring, each well will be reviewed for its relevance in the monitoring program. The monitoring frequency may be maintained, reduced to semi-annually, or a well

may be eliminated from the performance monitoring program with approval from ACDEH. Similarly, the monitoring parameters will be evaluated for their usefulness and certain parameters may be eliminated from the program.

The collected data and the bio-barrier remediation performance will be evaluated with each round of monitoring. The results will be reported with the routine groundwater monitoring reports for the site, or under a separate cover when warranted.

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## 6.0 LIMITATIONS

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CKG Environmental, Inc. prepared this report in accordance with generally accepted standards of care, which exist in Northern California at this time. It should be recognized that definition and evaluation of geologic and environmental conditions is a difficult and an inexact science.

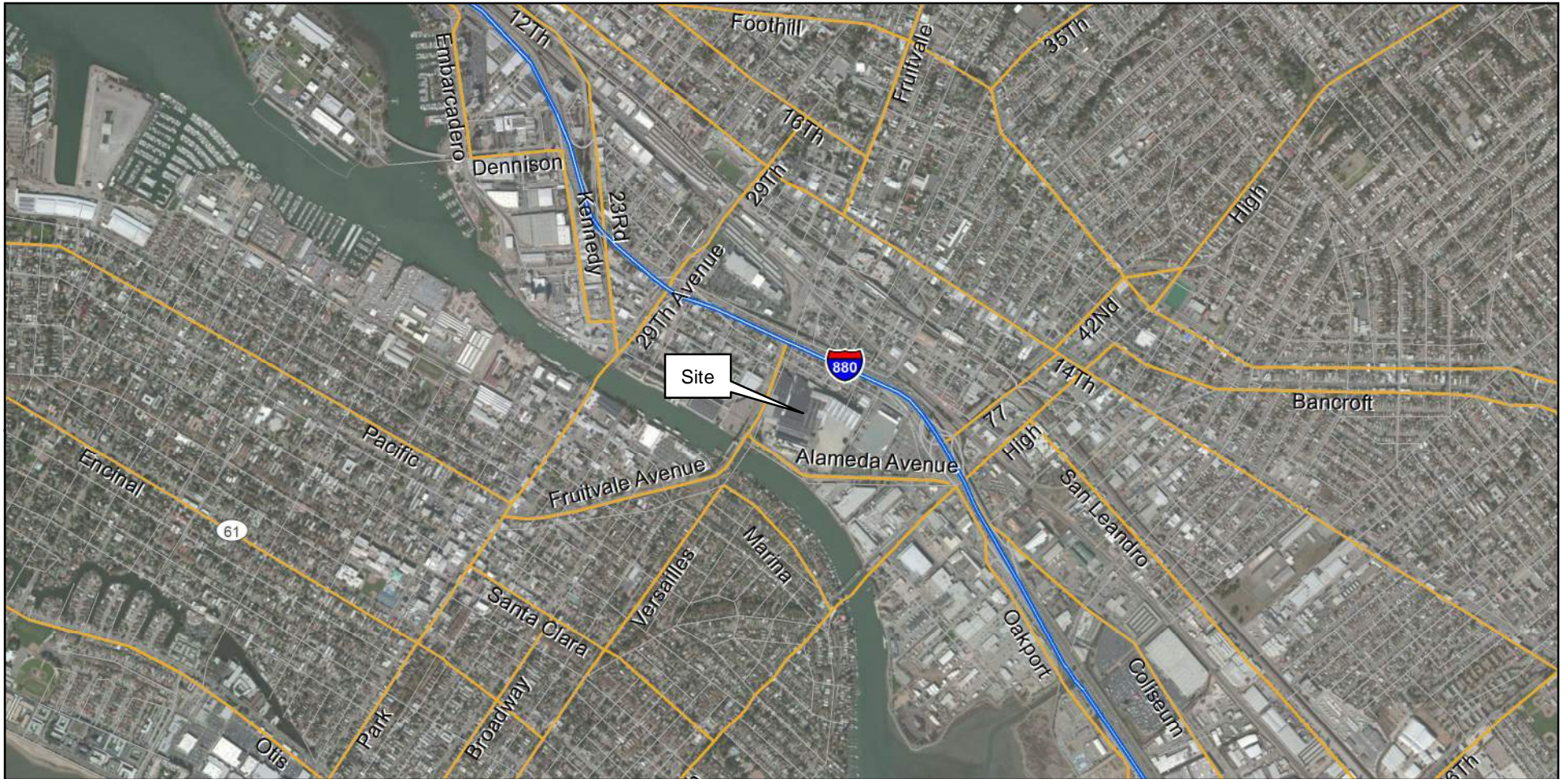
Conclusions and recommendations presented in this report are based on the results of the scope of work completed for this remediation action and monitoring event. This scope of work includes soil and groundwater sampling, and quantitative analysis of samples conducted by McCampbell Analytical Laboratory. Only work described herein was performed. As such CKG cannot render opinions on issues not resulting directly from the work performed.

Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present. More extensive studies, including additional subsurface investigations, may be performed to reduce uncertainties. If the client wishes to reduce the uncertainties of this investigation, CKG should be notified for additional consultation. No warranty, expressed or implied, is made.

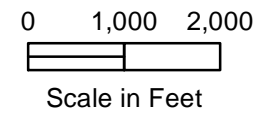
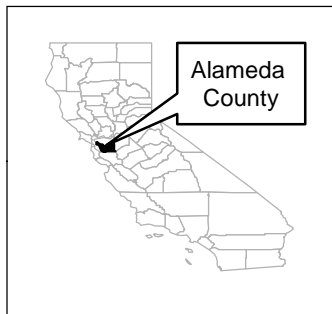
This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both onsite and offsite) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify CKG of such intended use. Based on the intended use of the report, CKG may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release CKG from any liability resulting from the use of this report by any unauthorized party.

## **PLATES**





Drawn by A. Lewellyn. January 2014. Base layers are unmodified Alameda County Digital Data Sets.



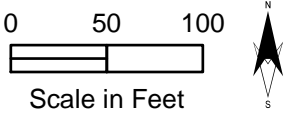




Drawn by A. Llewellyn, September 2014. Base layers are ArcGIS Online's Bing Aerial Imagery.

**EXPLANATION**

- Monitoring Well
- ⊗ Destroyed Well
- B-E Excavation Area
- - - - - Sausal Creek Culvert



## **ATTACHMENT 1**

**CONSTRUCTION CLOSEOUT REPORT  
TARGETED SOIL EXCAVATIONS B & D,  
PETROLEUM HYDROCARBON RELEASES  
OWENS-BROCKWAY GLASS CONTAINER FACILITY  
3600 ALAMEDA AVENUE  
OAKLAND, CALIFORNIA**



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A Report Prepared for:

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**CONSTRUCTION REPORT OF TARGETED SOIL EXCAVATIONS B & D  
PETROLUEM HYDROCARBON RELEASES  
OWENS-BROCKWAY GLASS CONTAINER FACILITY  
3600 ALAMEDA AVENUE  
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### PLATES

- Plate 1 – Site Location Map
- Plate 2 – Soil Excavation Area Map
- Plate 3 – Excavation D Detail Map
- Plate 4 – Excavation B Detail Map

### TABLES

- Table 1 –Excavation D Confirmation Sample Results
- Table 2 – Stockpile Analytical Results

### APPENDICES

- Appendix A Analytical Laboratory Reports; Preprofile Samples, Caldecott Tunnel Soil, Confirmation Samples, Stockpile Samples
- Appendix B Photographic Log.
- Appendix C Soil Compaction Test Reports

## 1.0 INTRODUCTION

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The following Report of Targeted Excavation presents the actions completed and results obtained from partially implementing the Corrective Action Plan dated November 30, 2010 prepared by CKG Environmental, Inc. (CKG).

CKG implemented the remediation work in partial compliance with the program outlined in the Corrective Action Plan (CAP), dated November 30, 2010. That work plan was approved by Mr. Paresh Khatri of the ACEHD in a letter message dated January 13, 2011. The selected remedial option included targeted excavations at the locations of the original fuel releases.

### 1.1 PROJECT DESCRIPTION

The project site is the Owens-Brockway Glass Container Corporation at 3600 Alameda Ave Oakland, CA. The facility operates 24 hours per day, although construction activities were limited to 7am to 7pm, in accordance to the City of Oakland's noise ordinances.

Following the active remediation CKG has continued monitoring the groundwater to evaluate the success of the active remediation. Each element of the completed remedy is discussed in further detail below.

The primary constituents of concern are total petroleum hydrocarbons quantified as diesel and as motor oil (TPHd or TPHmo) in soil and shallow groundwater. In the central area of the site the petroleum hydrocarbon of concern is TPHd. At the western side of the site the TPHs are primarily heavy-end hydrocarbons from aged fuel oils. The purpose of the project is to remove TPHg and TPHmo in the impacted soils to the extent practical, dewater the excavation of impacted groundwater as needed to maintain a safe and stable excavation, add oxygen releasing compound (ORC) to the excavations, backfill the excavations, and restore surface conditions.

## 2.0 SCOPE OF WORK

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Field activities for pre-construction data collection, and soil removal at Exc. B and Exc. D are described below. Analytical testing results and other field data are also presented.

### 2.1 PRE-EXCAVATION PREPARATION

#### 2.1.1 Well Closure and Preprofile Sample Collection

CKG closed MW-2 because it was within the proposed Excavation A (which was not completed). MW-2 was properly closed on May 10, 2011 in accordance with Alameda County Public Works Agency (ACPWA) permitting requirements. The well was closed by drilling out the well bore and grouting to the surface with neat cement. A well destruction log was completed and submitted to the State of California Department of Water Resources as required by law.

At the same time the well was closed CKG utilized the drill rig to install soil borings in the excavation areas. This was a requirement of the Vasco Road disposal facility, which was favored because of its proximity to the site and the reasonable tipping fees. Upon providing Vasco Road with historical data from the site the only analyses they required was for lead. Preprofile soil sample locations are shown on Plate 2. Lead concentrations ranged from not detected to 7.6 mg/kg which was below the landfill acceptance criteria. The analytical report is provided in Appendix A.

#### 2.1.2 Utility Surveys

NRC hired a private utility locator (Cruz brothers) to assess the potential presence of subsurface utilities within the excavations. The effectiveness of the surveys was compromised by the presence of rebar reinforced concrete within the subsurface from former building foundations and other unidentified structures. As a result unexpected utilities were encountered. When this occurred, Cruz Brothers was called out again to help locate the trace of the lines to the extent possible.

### 2.2 EXCAVATION ACTIVITIES

The following description of excavation activities is presented chronologically and will be augmented with photographs. Plate 2 illustrates the outline of the excavations, and outlines of existing and former structures (buildings, utilities etc.). A photographic log is included in Appendix B.

## 2.2.1 EXCAVATION D

### 2.2.1.1 Excavation D Mobilization

Because Owens-Brockway was in the process of rebuilding the D Furnace CKG elected to begin work at Excavation D. On June 7, 2011 NRC mobilized to the site. NRC subcontracted with M.A. McClish Excavating to provide shoring and excavation services. For the first few days the work was limited to staging equipment, saw cutting, and removing the concrete and asphalt at the excavation area. The outline of Excavation D, along with subsurface structures and the locations of confirmation samples are illustrated on Plate 3.

### 2.2.1.2 Excavation D Excavation and Confirmation Soil Sampling

As soon as the soil was exposed at Excavation D it was apparent that there were a number of subsurface utilities that had not been located previously that would make the work difficult. The main issues were associated with a 10-inch water line (main supply to the plant) which cut off the northwest corner of the excavation and a series of electrical lines housed in a concrete duct bank that cut through the east side of the excavation from north to south (Plate 3 and Figures 1 and 2 in Appendix B). It was also clear that the most heavily impacted soil was underneath the existing lube oil tank. Owens-Brockway decided to have CKG remove the tank to allow access to the most impacted soils. Because of the need to move the tank and the need to install additional shoring to protect the duct bank CKG completed Excavation D in two phases. The second phase was completed after the July 4<sup>th</sup> holiday. The excavation was extended as far as it was feasible to the north, west and east based on the presence of buildings or utilities. The excavation was extended to the south based on previous soil boring data. Soil confirmation samples were collected to the extent feasible as shown on Plate 3. Samples were submitted to McCampbell Analytical laboratory for analysis of total petroleum hydrocarbons quantified as diesel and gasoline (TPH<sub>d</sub> and TPH<sub>g</sub>) by EPA Method 8015, and meth-tert-butyl ether (MTBE); benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260. Soil samples collected after the first phase of excavation also were analyzed for volatile organic constituents (VOCs) by EPA Method 8260 and for semivolatile organic constituents (SVOCs) by EPA Method 8080. Because VOCs and SVOCs were not detected above laboratory reporting limits they were not analyzed in the second phase of excavation. The results of confirmation sampling are summarized on Table 1. Analytical laboratory reports are presented in Appendix A.

Groundwater was encountered at a depth of approximately 11 feet below grade. The water entered the excavation very slowly so it was not possible to remove a significant volume. CKG placed a sump pump in the deepest part of the excavation overnight and pumped the groundwater to the glass plant basement where it was managed with the process water. CKG estimates that only a few hundred gallons of water were recovered at each phase before the excavations had to be backfilled.

After each phase of excavation CKG placed a slurry of the oxygen releasing reagent, Oxygen Release Compound (ORC Advanced<sup>®</sup>) manufactured by Regenesis. ORC Advanced is a proprietary formulation of food grade calcium oxy-hydroxide that produces a controlled release of molecular oxygen to the subsurface for a period of up to 12 months. ORC was placed at



approximately 1.5 pounds per square foot of excavation area. The slurry was mixed into an approximately two-foot lift of drain rock placed on the floor of the excavation (Figure 3 in Appendix B). In total CKG placed 8,069 pounds of ORC at Excavation D.

Soil excavated from Excavation D was stockpiled temporarily on site. This was necessary because the data collected in 2009 showed that TPHg concentrations exceeded the disposal facility limit of 50 mg/kg. Soil was stockpiled to allow the lighter fraction hydrocarbons to dissipate and bring the TPHg concentration below 50 mg/kg. CKG collected two four-point composite samples from the stockpile after each phase of excavation. The composite samples were submitted to Analytical Sciences of Petaluma, California and McCampbell Analytical Laboratory for analysis of TPHg. In both cases the TPHg was detected below 50 mg/kg which was then acceptable to the Vasco Road Landfill (Table 2). A total of 2,988.24 tons of material from Excavation D was disposed at Vasco Road. Copies of shipping papers for this disposal are available and will be provided upon request.

### 2.2.1.3 Excavation D Backfill

After the drain rock and ORC was in place geotextile fabric was placed on top. By the end of June the excavation was backfilled with the clean soil obtained from the Caldecott Tunnel project in Oakland. The material was compacted using a sheepsfoot (Figure 4 in Appendix B). Compaction was tested by Testing Engineers of Hayward, California using a nuclear gauge. Compaction exceeded 95% in all tests. Copies of compaction test reports are provided in Appendix C.

## 2.2.2 Excavation B

### 2.2.2.1 Excavation B Mobilization

CKG mobilized to the vicinity of Western UST Area on July 11, 2012. The next week was spent preparing the area for excavation, relocating Owens-Brockway equipment and cullet, demolishing the cullet bunker and existing asphalt, and establishing the temporary cullet storage area. CKG then started installing shoring and locating subsurface utilities. As with Excavation D there were a number of subsurface utilities and unknown subsurface structures encountered that were not located through the utility survey. Subsurface utilities are shown on Plate 4. Of particular difficulty was the accurate location of the active 12-inch high pressure gas line, and the discovery of an older 12-inch gas line whose status could not be confirmed until both ends were exposed and its trace revealed (Figure 5 in Appendix B). Another previously unknown feature encountered was a brick bunker that appeared to have been used to store fuel oil (Figure 6 in Appendix B). The bunker was approximately 22 feet wide and 56 feet long. The top had been made of redwood and there was approximately 1.5 feet of residual tar at the bottom. The location of the brick bunker is shown on Plate 4. The bunker had been filled with debris and paved over in the past. CKG did not remove the bunker. A secondary water supply line had to be removed temporarily and was replaced after excavation activities were completed (Plate 4).

#### 2.2.2.2 Excavation B Soil Excavation

CKG began by excavating soil south of the gas line as shown on Plate 4. The excavation was extended to a depth of approximately 12 feet with no groundwater encountered. CKG deepened the excavation in a limited area at the east end of the excavation to locate groundwater, but none was observed by 15 feet below grade (Figure 6 in Appendix B). CKG continued to pothole to a depth of 20 feet at one location and still no groundwater entered the pothole. CKG observed that the soil was very strongly stained with a very strong odor. Free petroleum hydrocarbon product was observed to seep very slowly out of the soil in a few locations (Figure 7 in Appendix B). CKG speculates that the subsurface was so strongly affected by aged fuel oil that it had sealed up the porosity locally so that groundwater did not flow in that area. Given the discovery of such strong impact by petroleum hydrocarbons and the time that would be required to finish the work Owens-Brockway decided to halt further excavation work and restore the site as discussed in Section 3.2.

It was not necessary to stockpile the excavated soil from Excavation B because previous investigations showed that TPHg concentrations were below Vasco Road limitations. Excavated soil was loaded directly into trucks and was hauled to the Vasco Road Facility in Livermore. In total 2,834.45 tons of soil was removed from Excavation B.

CKG placed a slurry of ORC Advanced<sup>®</sup> mixed into an approximately two-foot lift of drain rock placed on the floor of the excavation. The lift was thicker in the area that had been potholed (Figure 9 in Appendix B). In total CKG placed 5,550 pounds of ORC at Excavation B.

#### 2.2.2.3 Excavation D Backfill

After the drain rock and ORC was in place geotextile fabric was placed on top. By about August 26, 2011 the excavation was backfilled with the clean soil obtained from the Caldecott Tunnel project in Oakland. The material was compacted using a sheepsfoot. Compaction was tested by Testing Engineers of Hayward, California using a nuclear gauge. Compaction exceeded 95% in all tests. Copies of compaction test reports are provided in Appendix C.

### 2.2.3 Site Restoration

Backfill activities were completed by August 26. Upon completion, the contractor removed the sheetpiles and all other nonessential equipment. To prepare the grade for reconstruction it was necessary to remove some stained soil and a large amount of subsurface concrete debris from former structures. It was also necessary to bring the surface to grade with clean compacted soil. (Figure 10 in Appendix B).

The area of the former cullet bunkers (Excavation B) was paved with concrete and new cullet bunkers constructed. Excavation Area D was paved with asphalt (Figure 10, Appendix B).

## **TABLES**

**Table 1 - Excavation D Confirmation Sample Results  
Oakland, California**

Sample ID	Sample Depth (ft/bgs)	Date Sampled	TPHg	TPHd	MTBE	Benzene	Toluene	Ethylbenzene	Xylene	VOCs	SVOCs
DS1	7	6/13/2011	110 <sup>1,2</sup>	2,000 <sup>5,6</sup>	-	-	-	-	-	-	-
DW1	7	6/13/2011	2.4 <sup>1</sup>	47 <sup>5,6</sup>	-	-	-	-	-	ND<0.005-ND<0.1	ND<0.66-ND<1.6
DN1	7.5	6/13/2011	ND	ND	-	-	-	-	-	ND<0.005-ND<0.1	ND<0.66-ND<1.6
DW2	8	6/14/2011	1,400 <sup>1,2</sup>	1,300 <sup>3,7</sup>	-	-	-	-	-	-	-
DS2	7	6/14/2011	ND	2.4 <sup>4</sup>	-	-	-	-	-	ND<0.005-ND<0.1	ND<0.66-ND<1.6
DE/N	7	6/15/2011	30 <sup>1</sup>	6,200 <sup>5,6</sup>	-	-	-	-	-	ND<0.005-ND<0.1	ND<16-ND<80
DE/S	7	6/15/2011	ND	3.1 <sup>4,6</sup>	-	-	-	-	-	-	-
DW3	8	7/13/2011	90 <sup>1,2</sup>	1,400 <sup>4,6</sup>	ND<0.50	ND<0.05	0.22	ND<0.05	0.2	-	-
DW5	8	7/13/2011	110 <sup>1,2</sup>	480 <sup>3</sup>	ND<0.50	ND<0.05	ND<0.05	ND<0.05	0.3	-	-
DS4	8.5	7/14/2011	110 <sup>1,2</sup>	450 <sup>3</sup>	ND<0.50	ND<0.05	ND<0.05	ND<0.05	0.19	-	-
DE3	7.5	7/14/2011	ND<1	33 <sup>5</sup>	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005	-	-

All results in mg/kg

<sup>1</sup> Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram

<sup>2</sup> No recognizable pattern

<sup>3</sup> Unmodified or weakly modified diesel is significant

<sup>4</sup> Diesel range compounds are significant, no recognizable pattern

<sup>5</sup> Aged diesel is significant

<sup>6</sup> Oil range compounds are significant

<sup>7</sup> Stoddard solvent/mineral spirit (?)

FOOTNOTES

ABBREVIATION

VOCs - Volatile Organic Compounds

SVOCs - Semi-Volatile Organic Compounds

MTBE - Methyl-t-butyl ether

TPHg,d,mo - Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil

**Table 2 - Stockpile Analytical Results  
Oakland, California**

Sample ID	Date Sampled	TPHg	TPHd	TPHmo	MTBE	Benzene	Toluene	Ethylbenzene	Xylene	Lead
SPD (A+B+C+D)	6/27/2011	8.2	540	370	-	ND<0.01	ND<0.01	ND<0.01	ND<0.03	6
SPD2 (A+B+C+D)	7/25/2011	16 <sup>1,2</sup>	180 <sup>3</sup>	220 <sup>4</sup>	ND<0.1	ND<0.01	0.013	ND<0.01	0.051	5.6
SPD (E+F+G+H)	6/27/2011	14	250	150	-	ND<0.01	ND<0.01	ND<0.01	ND<0.03	6.8
SPD2 (E+F+G+H)	7/25/2011	8.31	170	260	ND<0.05	ND<0.055	ND<0.055	ND<0.055	0.026	5.7

All results in mg/kg

FOOTNOTES

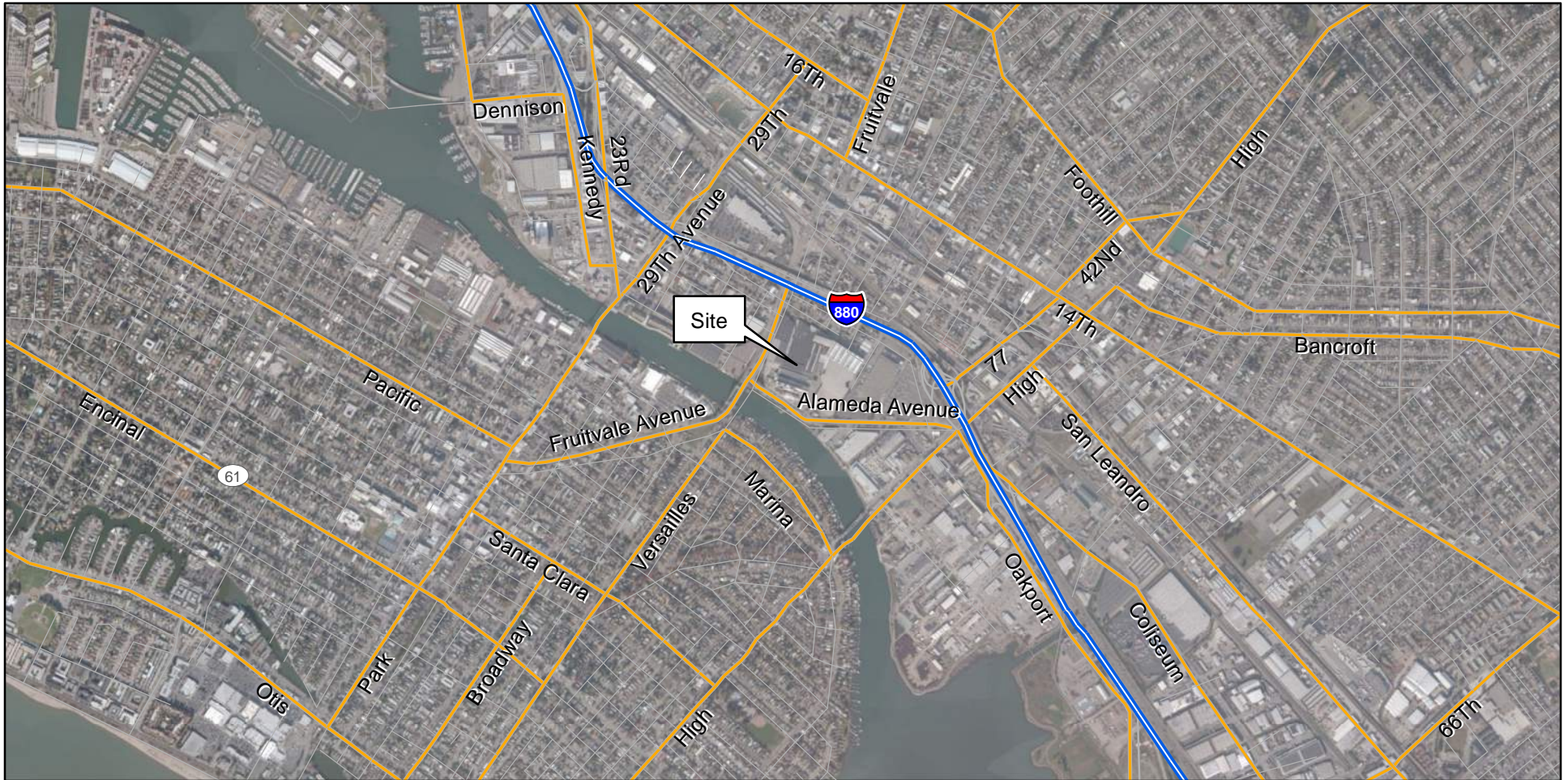
- <sup>1</sup> Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
- <sup>2</sup> No recognizable pattern
- <sup>3</sup> Diesel range compounds are significant, no recognizable pattern
- <sup>4</sup> Oil range compounds are significant

ABBREVIATION

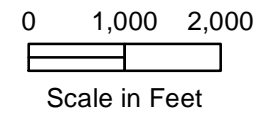
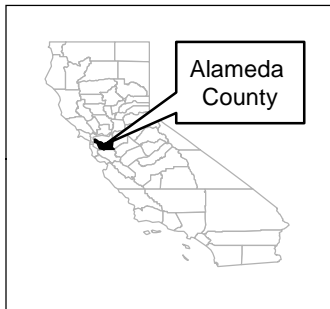
MTBE - Methyl-t-butyl ether  
 TPHg,d,mo - Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil

## **PLATES**





Drawn by A. Llewellyn, November 2011. Base layers are unmodified Alameda County Digital Data Sets.

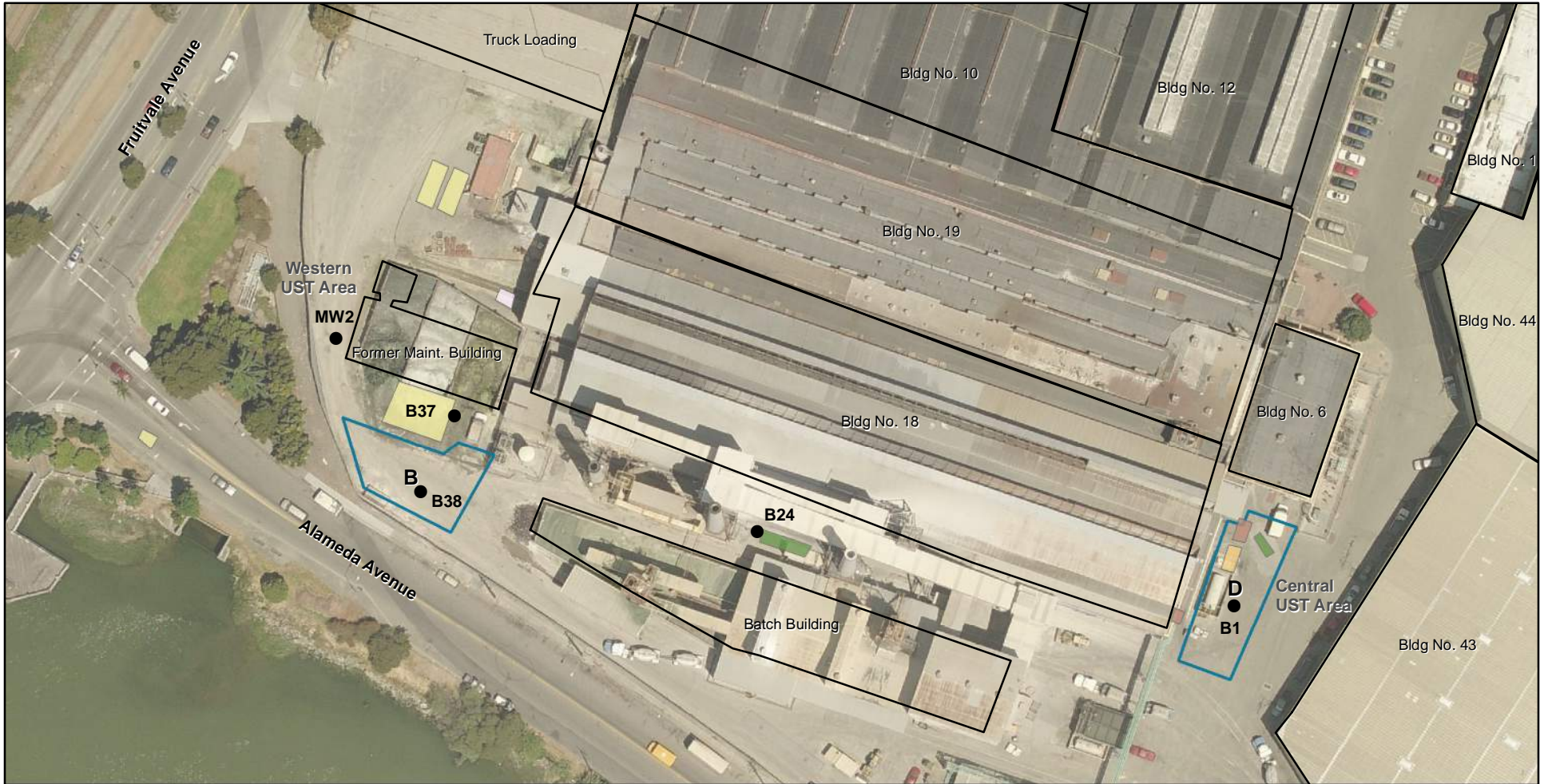


CKG Environmental, Inc.

Site Location Map  
Owens-Brockway Glass Container Facility  
3600 Alameda Avenue, Oakland, California

PLATE  
1

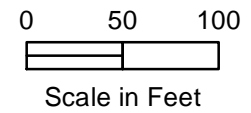




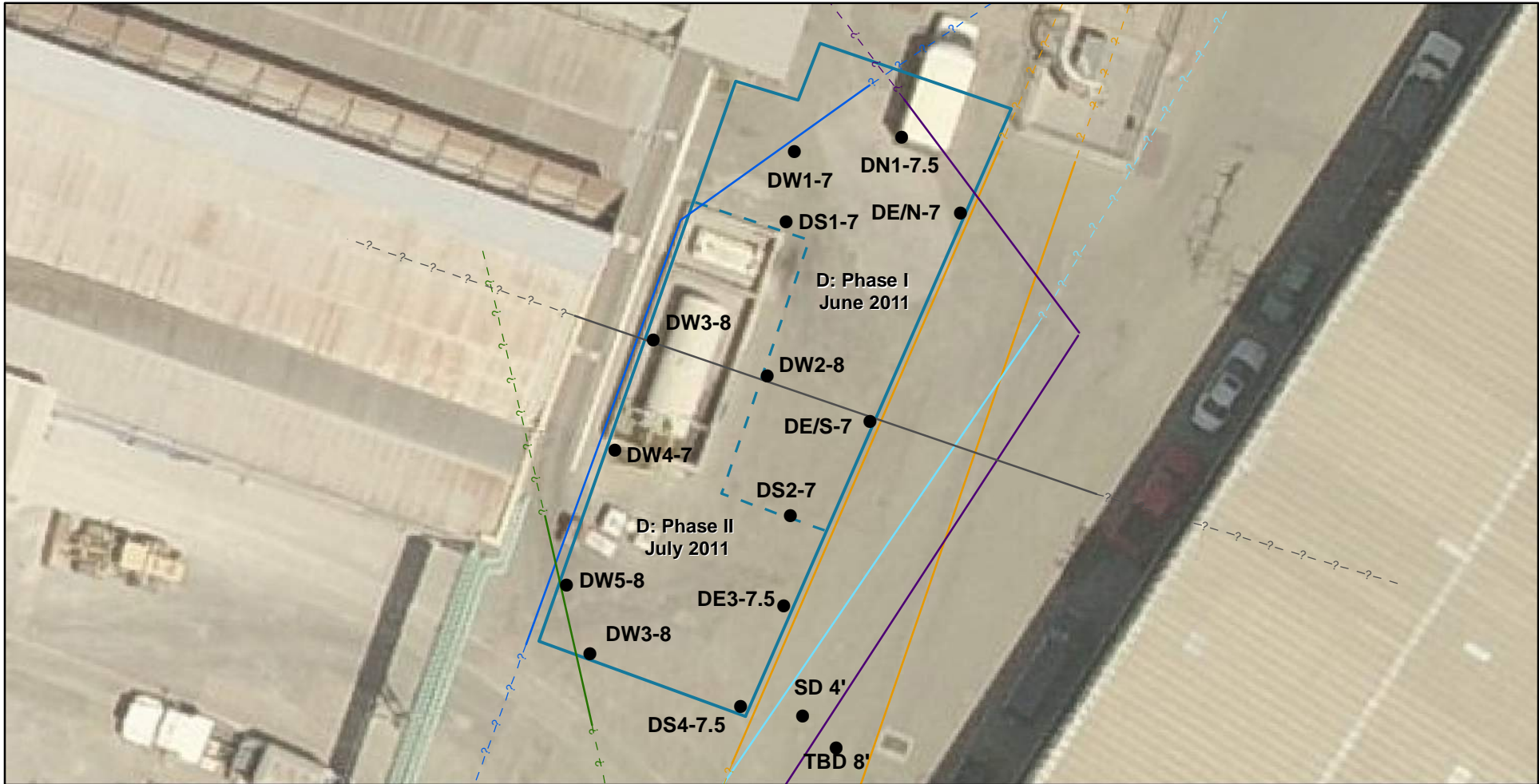
Drawn by A. Llewellyn. January 2012. Base layers are unmodified Pictometry Digital Data Sets.

**EXPLANATION**

- Preprofile Sample Location
- ▭ Excavation Area
- ▭ Building
- Former USTs**
- Diesel
- Fuel Oil
- Gasoline
- Lube Oil
- Waste Oil



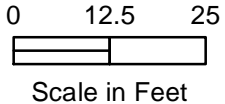




Drawn by A. Llewellyn. January 2012. Base layers are unmodified Pictometry Digital Data Sets.

**EXPLANATION**

- Sample Location
- ▭ Excavation Area
- Utility Lines**
- Electrical
- Metal Utility (Removed)
- Pipe (?)
- Sanitary Sewer
- Storm Drain
- Water Line
- - Separation of Excavation

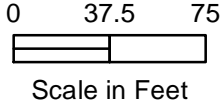




Drawn by A. Llewellyn. January 2012. Base layers are unmodified Pictometry Digital Data Sets.

**EXPLANATION**

- Brick Bunker
- Excavation Area
- Utility Lines**
- Gas Line
- Abandoned Gas Line
- New Water Supply Line
- Secondary Water Supply Line (replaced)
- Unknown



## **APPENDIX A**



**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: OB Oakland	Date Sampled: 05/10/11
		Date Received: 05/11/11
	Client Contact: Chris Kennedy	Date Reported: 05/17/11
	Client P.O.:	Date Completed: 05/17/11

**WorkOrder: 1105305**

May 17, 2011

Dear Chris:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **OB Oakland**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.





# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD  
PITTSBURG, CA 94565-1701

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (877) 252-9262 Fax: (925) 252-9269

1105305

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH  24 HR  48 HR  72 HR  5 DAY

GeoTracker EDF  PDF  Excel  Write On (DW)

Check if sample is effluent and "J" flag is required

Report To: Chris Kennedy Bill To:  
Company: CKG Environmental, Inc.  
P.O. Box 246, St. Helena, California 94574  
E-Mail: [ckennedy@geologist.com](mailto:ckennedy@geologist.com)  
Tele: (707) 967 8080 Fax: (707) 967 8080  
Project #: Project Name: **OB OAKLAND**  
Project Location:  
Sampler Signature: *[Signature]*

Analysis Request										Other	Comments	
BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE												**Indicate here if these samples are potentially dangerous to handle:
TPH as Diesel (8015)												
Total Petroleum Oil & Grease (1664 / 5520 E/B&F)												
Total Petroleum Hydrocarbons (418.1)												
EPA 502.2 / 601 / 8010 / 8021 (HVOCS)												
MTBE / BTEX ONLY (EPA 602 / 8021)												
EPA 505 / 608 / 8081 (CI Pesticides)												
EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners												
EPA 507 / 8141 (NP Pesticides)												
EPA 515 / 8151 (Acidic CI Herbicides)												
EPA 524.2 / 624 / 8260 (VOCs)												
EPA 525.2 / 625 / 8270 (SVOCs)												
EPA 8270 SIM / 8310 (PAHs / PNA's)												
CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)												
LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)												
Lead (200.7 / 200.8 / 6010 / 6020)												
Filter sample for DISSOLVED metals analysis												

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other	
MW2 5' } A	MW2	5/10/11		3		X					X				
MW2 10'	MW2														
MW2 12'	MW2														
B38 5'	B38														
B38 10'	B38														
B38 12' } B	B38														
B37 5'	B37														
B37 10'	B37														
B37 12'	B37														

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By: *[Signature]* Date: 5/10/11 Time: 11:45  
 Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: 5/11/11 Time: 1445  
 Received By: *[Signature]*  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_

ICER # 582 ✓  
 COMMENTS:  
 GOOD CONDITION ✓  
 HEAD SPACE ABSENT ✓  
 DECHLORINATED IN LAB ✓  
 APPROPRIATE CONTAINERS ✓  
 PRESERVED IN LAB ✓  
 PRESERVATION VOAS O&G METALS OTHER  
 pH < 2





**McCAMPBELL ANALYTICAL, INC.**  
 1534 WILLOW PASS ROAD  
 PITTSBURG, CA 94565-1701  
 Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
 Telephone: (877) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**  
 TURN AROUND TIME       
 RUSH 24 HR 48 HR 72 HR 5 DAY  
 GeoTracker EDF  PDF  Excel  Write On (DW)   
 Check if sample is effluent and "J" flag is required

Report To: Chris Kennedy Bill To:  
 Company: CKG Environmental, Inc.  
 P.O. Box 246, St. Helena, California 94574  
 E-Mail: [ckennedy@geologist.com](mailto:ckennedy@geologist.com)  
 Tele: (707) 967 8080 Fax: (707) 967 8080  
 Project #: Project Name: **OB OAKLAND**  
 Project Location:  
 Sampler Signature: *[Signature]*

Analysis Request										Other	Comments	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		**Indicate here if these samples are potentially dangerous to handle:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
B24 5'	B24	5/6/11				X					X						
B24 10' } C	↓	↓		2													X
B24 12' } C	↓	↓															
B1 5'	B1																
B1 10' } D	↓	↓		2													X
B1 12' } D	↓	↓															

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By: <i>[Signature]</i>	Date: 5/8/11	Time: 11:46	Received By: <i>[Signature]</i>	COMMENTS: ICE/T* _____ GOOD CONDITION _____ HEAD SPACE ABSENT _____ DECHLORINATED IN LAB _____ APPROPRIATE CONTAINERS _____ PRESERVED IN LAB _____ VOAS O&G METALS OTHER PRESERVATION pH<2
Relinquished By: <i>[Signature]</i>	Date: 5/11/11	Time: 4:45	Received By: <i>[Signature]</i>	
Relinquished By:	Date:	Time:	Received By:	

**McC Campbell Analytical, Inc.**



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 1105305**

**ClientCode: CKGS**

WaterTrax    WriteOn    EDF    Excel    Fax    Email    HardCopy    ThirdParty    J-flag

**Report to:**  
Chris Kennedy  
CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574  
(707) 967-8080   FAX (707) 967-8080

**Email:** ckennedy@geologist.com  
**cc:**  
**PO:**  
**ProjectNo:** OB Oakland

**Bill to:**  
Accounts Payable  
CKG Environmental  
808 Zinfindel Lane  
St. Helena, CA 94574

**Requested TAT: 5 days**  
**Date Received: 05/11/2011**  
**Date Printed: 05/11/2011**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1105305-001	A	Soil	5/10/2011	<input type="checkbox"/>	A												
1105305-003	B	Soil	5/10/2011	<input type="checkbox"/>	A												
1105305-006	C	Soil	5/10/2011	<input type="checkbox"/>	A												
1105305-008	D	Soil	5/10/2011	<input type="checkbox"/>	A												

**Test Legend:**

1	PB_S	2		3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



**Sample Receipt Checklist**

Client Name: **CKG Environmental**

Date and Time Received: **5/11/2011 3:53:33 PM**

Project Name: **OB Oakland**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **1105305** Matrix Soil

Carrier: Rob Pringle (MAI Courier)

**Chain of Custody (COC) Information**

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

- All samples received within holding time? Yes  No
  - Container/Temp Blank temperature Cooler Temp: 5.8°C NA
  - Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
  - Sample labels checked for correct preservation? Yes  No
  - Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
  - Samples Received on Ice? Yes  No
- (Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

=====

Client contacted:

Date contacted:

Contacted by:

Comments:





# McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: OB Oakland	Date Sampled: 05/10/11
		Date Received: 05/11/11
	Client Contact: Chris Kennedy	Date Extracted: 05/11/11
	Client P.O.:	Date Analyzed: 05/16/11

### Lead by ICP\*

Extraction method: SW3050B

Analytical methods: SW6010B

Work Order: 1105305

Lab ID	Client ID	Matrix	Extraction Type	Lead	DF	% SS	Comments
1105305-001A	A	S	TOTAL	5.7	1	106	
1105305-003A	B	S	TOTAL	7.8	1	102	
1105305-006A	C	S	TOTAL	ND	1	99	
1105305-008A	D	S	TOTAL	6.6	1	101	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TOTAL	NA	µg/L
	S	TOTAL	5.0	mg/Kg

\*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

# means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.  
 TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.  
 DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.

%SS = Percent Recovery of Surrogate Standard  
 DF = Dilution Factor



### QC SUMMARY REPORT FOR 6010B

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder 1105305

EPA Method SW6010B		Extraction SW3050B				BatchID: 58296			Spiked Sample ID: 1105305-008A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	Spiked	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	mg/Kg	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Lead	6.6	50	102	103	0.950	10	108	101	6.22	75 - 125	25	75 - 125	25
%SS:	101	500	107	100	6.79	500	106	100	5.24	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 58296 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1105305-001A	05/10/11	05/11/11	05/16/11 10:54 AM	1105305-003A	05/10/11	05/11/11	05/16/11 10:57 AM
1105305-006A	05/10/11	05/11/11	05/16/11 11:01 AM	1105305-008A	05/10/11	05/11/11	05/16/11 10:31 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

$\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





**Curtis & Tompkins, Ltd.**  
Analytical Laboratories, Since 1878







Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 227460  
ANALYTICAL REPORT

Construction Testing Services  
2174 Rheem Drive  
Pleasanton, CA 94588

Project : J6950 CALDECOTT  
Location : Caldecott Tunnel  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
STK01E-42211-GRAB	227460-001
STK01E-42211-COMP	227460-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: \_\_\_\_\_

Project Manager

Date: 04/25/2011

NELAP # 01107CA

### CASE NARRATIVE

Laboratory number: 227460  
Client: Construction Testing Services  
Project: J6950 CALDECOTT  
Location: Caldecott Tunnel  
Request Date: 04/22/11  
Samples Received: 04/22/11

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 04/22/11. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):**

No analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**

No analytical problems were encountered.

**Metals (EPA 6010B and EPA 7471A):**

Low recovery was observed for barium in the MSD for batch 174062; the parent sample was not a project sample, the BS/BSD were within limits, and the associated RPD was within limits. High recoveries were observed for lead in the MS/MSD for batch 174062; the BS/BSD were within limits, and the associated RPD was within limits. High RPD was observed for copper; the RPD was acceptable in the BS/BSD. No other analytical problems were encountered.

# CHAIN OF CUSTODY

Page 1 of 1  
Chain of Custody # \_\_\_\_\_



2323 Fifth Street  
Berkeley, CA 94710

C&T LOGIN # 227460

## ANALYTICAL REQUEST

Project No: 56950 (CTS)  
 Project Name: Caldecott Tunnel  
 Project P. O. No: 56950  
 EDD Format: Report Level  II  III  IV  
 Turnaround Time:  RUSH 24hr  Standard  
 Sampler: Robert Williams  
 Report To: gate Chhoun  
 Company: CTS, Inc  
 Telephone: 925-462-5151  
 Email: g.chhoun@cts-1.com

Lab No.	Sample ID.	Date Collected	Time Collected	MATRIX	# of Containers	CHEMICAL PRESERVATIVE
1	5tk01E-42211-9rb	4-22-11	1040	Water	48	HCl
2	5tk01E-42211-Comp	4-22-11	1100	Water	180	H2SO4
	5tk01E-42211-Comp	4-22-11	1100	Water	50	HNO3
				Solid		NaOH
						None

Lab No.	Sample ID.	Date Collected	Time Collected	MATRIX	# of Containers	CHEMICAL PRESERVATIVE
						HCl
						H2SO4
						HNO3
						NaOH
						None

Lab No.	Sample ID.	Date Collected	Time Collected	MATRIX	# of Containers	CHEMICAL PRESERVATIVE
						HCl
						H2SO4
						HNO3
						NaOH
						None

Notes:

SAMPLE RECEIPT  
 Intact  
 Cold  
 On Ice  
 Ambient

RELINQUISHED BY: Robert Williams DATE: 4/22/11 TIME: 1220

RECEIVED BY: [Signature] DATE: 4/22 TIME: 1230

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 227460 Date Received 4/22/11 Number of coolers 1
Client CTS Project CALDECOTT TUNNEL

Date Opened 4/22/11 By (print) M. VILLANUEVA (sign)
Date Logged in 4/22/11 By (print) (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
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)

- 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. Did you check preservatives for all bottles for each sample? YES NO N/A

16. Did you document your preservative check YES NO N/A

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

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

COMMENTS

### Curtis & Tompkins Laboratories Analytical Report

Lab #: 227460	Location: Caldecott Tunnel
Client: Construction Testing Services	Prep: EPA 5030B
Project#: J6950 CALDECOTT	
Field ID: STK01E-42211-GRAB	Batch#: 174085
Matrix: Soil	Sampled: 04/22/11
Basis: as received	Received: 04/22/11
Diln Fac: 1.000	Analyzed: 04/25/11

Type: SAMPLE                      Lab ID: 227460-001

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.1	mg/Kg	EPA 8015B
Benzene	ND	5.5	ug/Kg	EPA 8021B
Toluene	ND	5.5	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.5	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.5	ug/Kg	EPA 8021B
o-Xylene	ND	5.5	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	104	67-140	EPA 8015B
Bromofluorobenzene (PID)	104	45-125	EPA 8021B

Type: BLANK                      Lab ID: QC588948

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	EPA 8015B
Benzene	ND	5.0	ug/Kg	EPA 8021B
Toluene	ND	5.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.0	ug/Kg	EPA 8021B
o-Xylene	ND	5.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	102	67-140	EPA 8015B
Bromofluorobenzene (PID)	103	45-125	EPA 8021B

ND= Not Detected  
 RL= Reporting Limit



## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	EPA 5030B
Project#:	J6950 CALDECOTT		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC588949	Batch#:	174085
Matrix:	Soil	Analyzed:	04/25/11
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12	1.000	0.9965	100	79-121	EPA 8015B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	112	67-140	EPA 8015B
Bromofluorobenzene (PID)	113	45-125	EPA 8021B

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	EPA 5030B
Project#:	J6950 CALDECOTT		
Matrix:	Soil	Batch#:	174085
Units:	ug/Kg	Analyzed:	04/25/11
Diln Fac:	1.000		

Type: BS Lab ID: QC588950

Analyte	Spiked	Result	%REC	Limits	Analysis
Benzene	10.00	9.814	98	72-125	EPA 8021B
Toluene	10.00	10.14	101	74-124	EPA 8021B
Ethylbenzene	10.00	10.23	102	73-125	EPA 8021B
m,p-Xylenes	10.00	10.07	101	74-126	EPA 8021B
o-Xylene	10.00	10.14	101	71-128	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	103	67-140	EPA 8015B
Bromofluorobenzene (PID)	103	45-125	EPA 8021B

Type: BSD Lab ID: QC588951

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
Benzene	10.00	9.960	100	72-125	1	20	EPA 8021B
Toluene	10.00	9.685	97	74-124	5	24	EPA 8021B
Ethylbenzene	10.00	10.07	101	73-125	2	20	EPA 8021B
m,p-Xylenes	10.00	9.900	99	74-126	2	20	EPA 8021B
o-Xylene	10.00	9.670	97	71-128	5	20	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	103	67-140	EPA 8015B
Bromofluorobenzene (PID)	104	45-125	EPA 8021B

RPD= Relative Percent Difference

Total Extractable Hydrocarbons			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	SHAKER TABLE
Project#:	J6950 CALDECOTT	Analysis:	EPA 8015B
Field ID:	STK01E-42211-COMP	Batch#:	174033
Matrix:	Soil	Sampled:	04/22/11
Units:	mg/Kg	Received:	04/22/11
Basis:	as received	Prepared:	04/22/11
Diln Fac:	1.000	Analyzed:	04/25/11

Type: SAMPLE Lab ID: 227460-002

Analyte	Result	RL
Diesel C10-C24	32	1.0
Motor Oil C24-C36	75	5.0

Surrogate	%REC	Limits
o-Terphenyl	100	52-130

Type: BLANK Lab ID: QC588756

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

Surrogate	%REC	Limits
o-Terphenyl	105	52-130

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	SHAKER TABLE
Project#:	J6950 CALDECOTT	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC588757	Batch#:	174033
Matrix:	Soil	Prepared:	04/22/11
Units:	mg/Kg	Analyzed:	04/25/11

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.79	41.31	83	44-151

Surrogate	%REC	Limits
o-Terphenyl	98	52-130

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	SHAKER TABLE
Project#:	J6950 CALDECOTT	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	174033
MSS Lab ID:	227425-012	Sampled:	04/21/11
Matrix:	Soil	Received:	04/21/11
Units:	mg/Kg	Prepared:	04/22/11
Basis:	as received	Analyzed:	04/25/11
Diln Fac:	1.000		

Type: MS Cleanup Method: EPA 3630C  
 Lab ID: QC588758

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	1.236	49.81	36.10	70	39-146

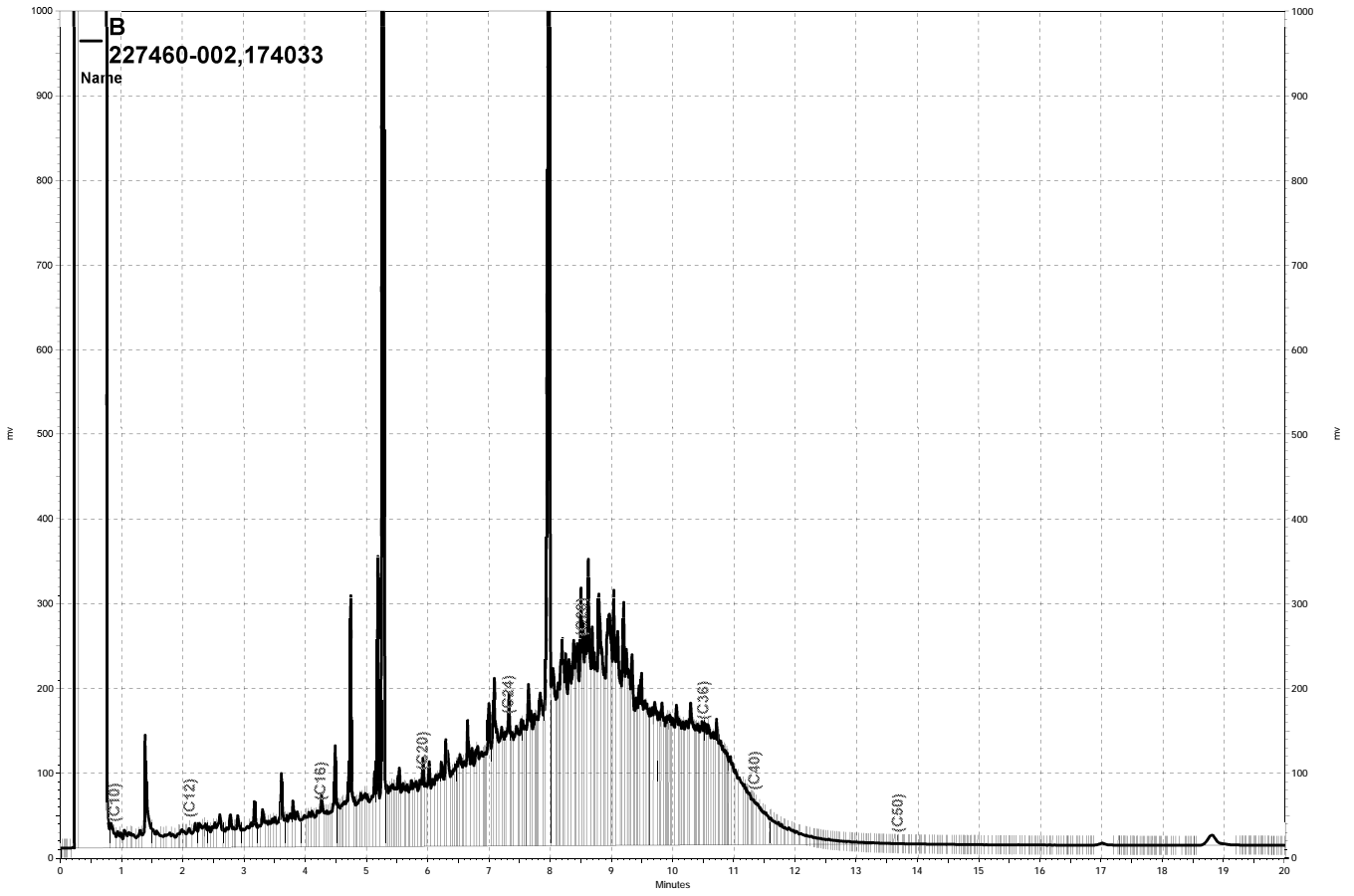
Surrogate	%REC	Limits
o-Terphenyl	84	52-130

Type: MSD Cleanup Method: EPA 3630C  
 Lab ID: QC588759

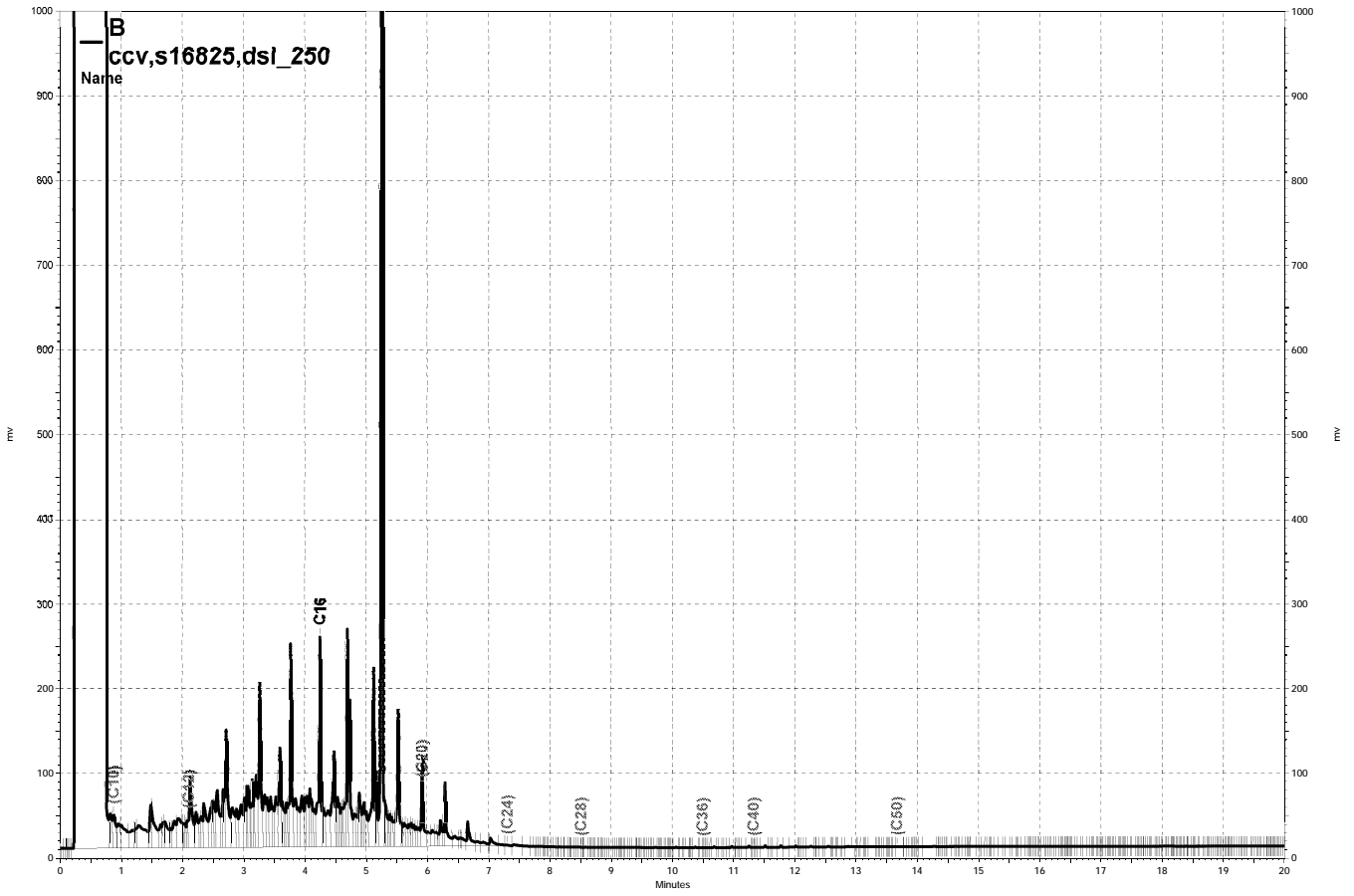
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.82	43.31	84	39-146	18	61

Surrogate	%REC	Limits
o-Terphenyl	100	52-130

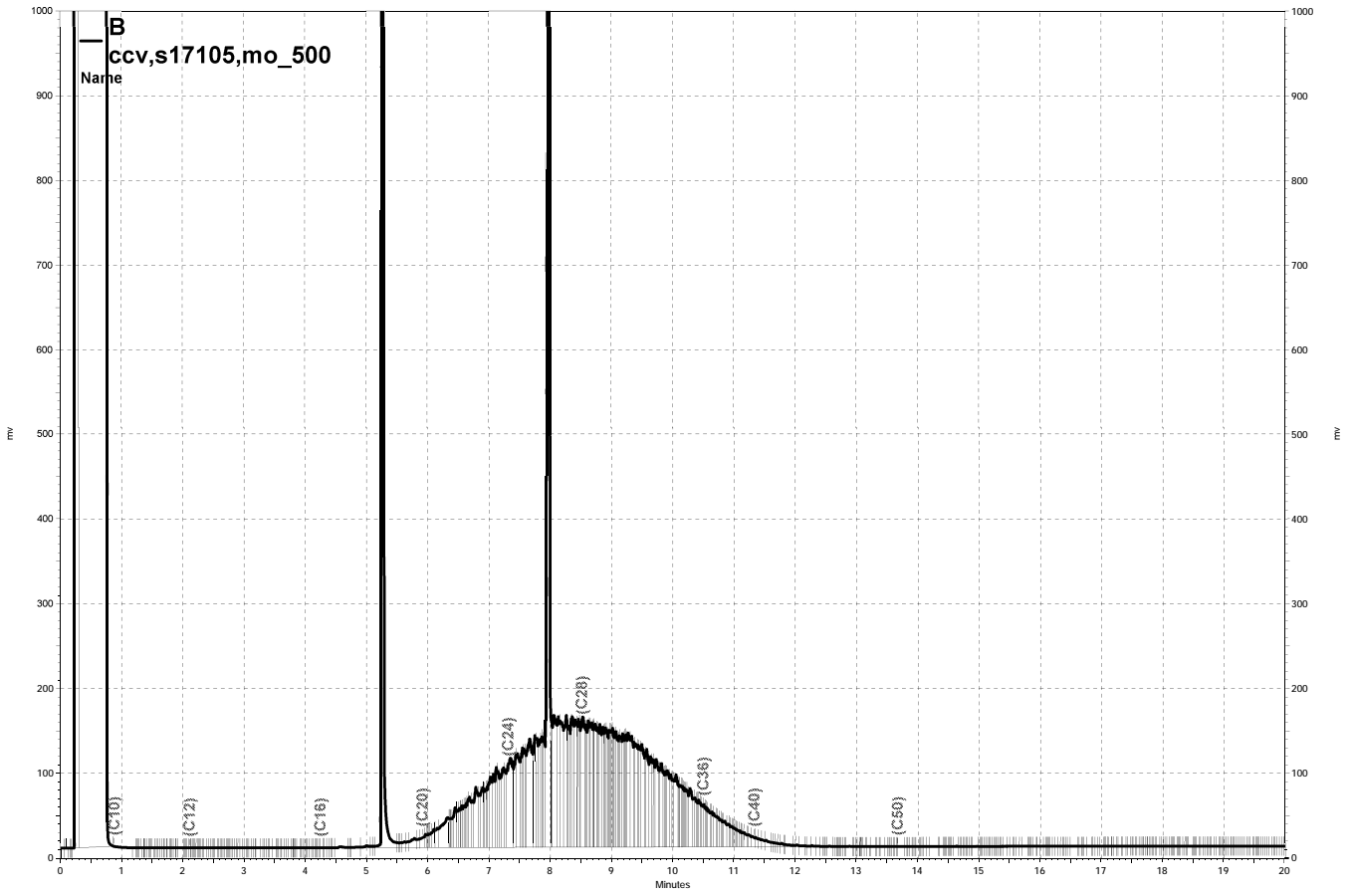
RPD= Relative Percent Difference



— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\115b009, B



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\115b004, B



— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\115b005, B



**California Title 22 Metals**

Lab #: 227460	Project#: J6950 CALDECOTT
Client: Construction Testing Services	Location: Caldecott Tunnel
Field ID: STK01E-42211-COMP	Diln Fac: 1.000
Lab ID: 227460-002	Sampled: 04/22/11
Matrix: Soil	Received: 04/22/11
Units: mg/Kg	Prepared: 04/25/11
Basis: as received	Analyzed: 04/25/11

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	ND	0.50	174062	EPA 3050B	EPA 6010B
Arsenic	6.8	0.25	174062	EPA 3050B	EPA 6010B
Barium	100	0.25	174062	EPA 3050B	EPA 6010B
Beryllium	0.26	0.10	174062	EPA 3050B	EPA 6010B
Cadmium	2.6	0.25	174062	EPA 3050B	EPA 6010B
Chromium	10	0.25	174062	EPA 3050B	EPA 6010B
Cobalt	3.4	0.25	174062	EPA 3050B	EPA 6010B
Copper	22	0.25	174062	EPA 3050B	EPA 6010B
Lead	2.6	0.25	174062	EPA 3050B	EPA 6010B
Mercury	ND	0.020	174087	METHOD	EPA 7471A
Molybdenum	5.7	0.25	174062	EPA 3050B	EPA 6010B
Nickel	36	0.25	174062	EPA 3050B	EPA 6010B
Selenium	2.0	0.50	174062	EPA 3050B	EPA 6010B
Silver	0.62	0.25	174062	EPA 3050B	EPA 6010B
Thallium	1.2	0.50	174062	EPA 3050B	EPA 6010B
Vanadium	16	0.25	174062	EPA 3050B	EPA 6010B
Zinc	66	1.0	174062	EPA 3050B	EPA 6010B

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	EPA 3050B
Project#:	J6950 CALDECOTT	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC588863	Batch#:	174062
Matrix:	Soil	Prepared:	04/25/11
Units:	mg/Kg	Analyzed:	04/25/11

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	0.26
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 #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	EPA 3050B
Project#:	J6950 CALDECOTT	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	174062
Units:	mg/Kg	Prepared:	04/25/11
Diln Fac:	1.000	Analyzed:	04/25/11

Type: BS Lab ID: QC588864

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	101.0	101	80-120
Arsenic	50.00	54.19	108	80-120
Barium	100.0	99.98	100	80-120
Beryllium	2.500	2.650	106	80-120
Cadmium	10.00	10.36	104	80-120
Chromium	100.0	100.5	100	80-120
Cobalt	25.00	24.74	99	80-120
Copper	12.50	13.06	104	78-120
Lead	100.0	100.9	101	80-120
Molybdenum	20.00	20.29	101	80-120
Nickel	25.00	24.89	100	80-120
Selenium	50.00	49.54	99	80-120
Silver	10.00	8.922	89	80-120
Thallium	50.00	50.72	101	80-120
Vanadium	25.00	25.61	102	80-120
Zinc	25.00	25.49	102	80-120

Type: BSD Lab ID: QC588865

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	97.99	98	80-120	3	20
Arsenic	50.00	52.56	105	80-120	3	20
Barium	100.0	97.49	97	80-120	3	20
Beryllium	2.500	2.555	102	80-120	4	20
Cadmium	10.00	10.05	100	80-120	3	20
Chromium	100.0	97.73	98	80-120	3	20
Cobalt	25.00	24.05	96	80-120	3	20
Copper	12.50	12.54	100	78-120	4	20
Lead	100.0	98.06	98	80-120	3	20
Molybdenum	20.00	19.82	99	80-120	2	20
Nickel	25.00	24.17	97	80-120	3	20
Selenium	50.00	48.29	97	80-120	3	20
Silver	10.00	8.705	87	80-120	2	20
Thallium	50.00	49.20	98	80-120	3	20
Vanadium	25.00	24.93	100	80-120	3	20
Zinc	25.00	24.77	99	80-120	3	20

RPD= Relative Percent Difference

**Batch QC Report**

California Title 22 Metals			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	EPA 3050B
Project#:	J6950 CALDECOTT	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	174062
MSS Lab ID:	227365-001	Sampled:	04/19/11
Matrix:	Soil	Received:	04/19/11
Units:	mg/Kg	Prepared:	04/25/11
Basis:	as received	Analyzed:	04/25/11

Type: MS Lab ID: QC588866

Analyte	MSS Result	Spiked	Result	%REC	Limits	Diln Fac
Antimony	0.6090	100.0	20.23	20	7-120	1.000
Arsenic	3.971	50.00	55.96	104	66-122	1.000
Barium	161.4	100.0	212.2	51	51-135	1.000
Beryllium	0.2353	2.500	2.707	99	73-120	1.000
Cadmium	0.2081	10.00	9.414	92	64-120	1.000
Chromium	232.6	100.0	301.9	69	57-122	1.000
Cobalt	40.56	25.00	59.53	76	53-122	1.000
Copper	207.4	12.50	193.3	-113 NM	33-157	1.000
Lead	283.0	100.0	682.4	399 *	52-123	10.00
Molybdenum	<0.04523	20.00	16.97	85	66-120	1.000
Nickel	745.3	25.00	588.5 >LR	-627 NM	42-137	1.000
Selenium	<0.1479	50.00	46.38	93	64-120	1.000
Silver	<0.03692	10.00	9.209	92	65-120	1.000
Thallium	0.4684	50.00	48.76	97	55-120	1.000
Vanadium	40.79	25.00	62.46	87	49-139	1.000
Zinc	97.87	25.00	123.4	102	32-155	1.000

Type: MSD Lab ID: QC588867

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Diln Fac
Antimony	90.09	14.89	16	7-120	20	44	1.000
Arsenic	45.05	50.76	104	66-122	0	35	1.000
Barium	90.09	192.6	35 *	51-135	6	42	1.000
Beryllium	2.252	2.439	98	73-120	1	22	1.000
Cadmium	9.009	8.379	91	64-120	1	36	1.000
Chromium	90.09	314.5	91	57-122	7	34	1.000
Cobalt	22.52	64.99	108	53-122	13	32	1.000
Copper	11.26	350.7	1273 NM	33-157	58 *	41	1.000
Lead	90.09	579.8	329 *	52-123	14	41	10.00
Molybdenum	18.02	15.19	84	66-120	1	20	1.000
Nickel	22.52	693.1 >LR	-232 NM	42-137	NC	36	1.000
Selenium	45.05	41.38	92	64-120	1	28	1.000
Silver	9.009	8.366	93	65-120	1	27	1.000
Thallium	45.05	43.17	95	55-120	2	27	1.000
Vanadium	22.52	60.66	88	49-139	1	32	1.000
Zinc	22.52	104.6	30 NM	32-155	14	45	1.000

\*= Value outside of QC limits; see narrative  
 NC= Not Calculated  
 NM= Not Meaningful: Sample concentration > 4X spike concentration  
 >LR= Response exceeds instrument's linear range  
 RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	METHOD
Project#:	J6950 CALDECOTT	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	174087
Lab ID:	QC588961	Prepared:	04/25/11
Matrix:	Soil	Analyzed:	04/25/11
Units:	mg/Kg		

Result	RL
ND	0.020

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	METHOD
Project#:	J6950 CALDECOTT	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	174087
Matrix:	Soil	Prepared:	04/25/11
Units:	mg/Kg	Analyzed:	04/25/11
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC588962	0.2500	0.2690	108	80-120		
BSD	QC588963	0.2500	0.2670	107	80-120	1	20

RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	227460	Location:	Caldecott Tunnel
Client:	Construction Testing Services	Prep:	METHOD
Project#:	J6950 CALDECOTT	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	174087
MSS Lab ID:	227444-011	Sampled:	04/20/11
Matrix:	Soil	Received:	04/21/11
Units:	mg/Kg	Prepared:	04/25/11
Basis:	as received	Analyzed:	04/25/11

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC588964	0.03575	0.2500	0.3030	107	72-124		
MSD	QC588965		0.2604	0.3063	104	72-124	3	31

RPD= Relative Percent Difference



## Analytical Report

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
		Date Received: 06/15/11
	Client Contact: Chris Kennedy	Date Reported: 06/23/11
	Client P.O.:	Date Completed: 06/23/11

**WorkOrder: 1106511**

June 23, 2011

Dear Chris:

Enclosed within are:

- 1) The results of the 7 analyzed samples from your project: #OB-GCF; Exc.D Sidewalls,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



1106511



**McCAMPBELL ANALYTICAL, INC.**

1534 WILLOW PASS ROAD  
PITTSBURG, CA 94565-1701

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (877) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**       
RUSH 24 HR 48 HR 72 HR 5 DAY  
GeoTracker EDF  PDF  Excel  Write On (DW)   
 Check if sample is effluent and "J" flag is required

Report To: Chris Kennedy Bill To: Same  
Company: CKG Environmental  
P.O. Box 246  
Saint Helena, CA 94574 E-Mail: [ckennedy@geologist.com](mailto:ckennedy@geologist.com)  
Tele: (707) 967-8080 Fax: ( )  
Project #: OB-GCF Project Name: Exc. D SIDEWALLS  
Project Location: 3600 Alameda Avenue, Oakland, CA  
Sampler Signature:

Analysis Request										Other	Comments						
TPH as Gas (602/603/8015) <del>8015</del>	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (CI Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic CI Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAS)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Filter sample for DISSOLVED metals analysis	**Indicate here if these samples are potentially dangerous to handle:  <u>STRONG ODOUR</u>
DS1-7'	DW1-7'	DN1-7.5'	DW2-8'	OS2-7'	DE/N-7'	DE/S-7'											

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date: 6/15	Time: 1411	Received By:	COMMENTS: ICE/1" <u>10-4</u> GOOD CONDITION _____ HEAD SPACE ABSENT _____ DECHLORINATED IN LAB _____ APPROPRIATE CONTAINERS _____ PRESERVED IN LAB _____ VOAS O&G METALS OTHER PRESERVATION pH<2
Relinquished By:	Date: 6/15	Time: 1755	Received By:	
Relinquished By:	Date:	Time:	Received By:	

**McC Campbell Analytical, Inc.**



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 1106511**

**ClientCode: CKGS**

WaterTrax    WriteOn    EDF    Excel    Fax    Email    HardCopy    ThirdParty    J-flag

Report to: Chris Kennedy   Email: ckennedy@geologist.com   Bill to: Accounts Payable   Requested TAT: **5 days**  
 CKG Environmental   cc: CKG Environmental   808 Zinfindel Lane   *Date Received: 06/15/2011*  
 P.O. Box 246   PO: St. Helena, CA 94574   *Date Printed: 06/15/2011*  
 St. Helena, CA 94574   ProjectNo: #OB-GCF; Exc.D Sidewalls  
 (707) 967-8080   FAX (707) 967-8080

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1106511-001	DS1-7'	Soil	6/13/2011	<input type="checkbox"/>			A										
1106511-002	DW1-7'	Soil	6/13/2011	<input type="checkbox"/>	A	A	A										
1106511-003	DN1-7.5'	Soil	6/13/2011	<input type="checkbox"/>	A	A	A										
1106511-004	DW2-8'	Soil	6/14/2011	<input type="checkbox"/>			A										
1106511-005	DS2-7'	Soil	6/14/2011	<input type="checkbox"/>	A	A	A										
1106511-006	DE/N-7'	Soil	6/15/2011	<input type="checkbox"/>	A	A	A										
1106511-007	DE/S-7'	Soil	6/15/2011	<input type="checkbox"/>			A										

**Test Legend:**

1	8260B_S	2	8270D_S	3	TPH(D)WSG_S	4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A contain testgroup.

**Prepared by: Ana Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



**Sample Receipt Checklist**

Client Name: **CKG Environmental**

Date and Time Received: **6/15/2011 6:43:19 PM**

Project Name: **#OB-GCF; Exc.D Sidewalls**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **1106511** Matrix Soil

Carrier: Benjamin Yslas (MAI Courier)

**Chain of Custody (COC) Information**

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

- All samples received within holding time? Yes  No
  - Container/Temp Blank temperature Cooler Temp: 6.4°C NA
  - Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
  - Sample labels checked for correct preservation? Yes  No
  - Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
  - Samples Received on Ice? Yes  No
- (Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

Client Project ID: #OB-GCF; Exc.D  
Sidewalls  
Client Contact: Chris Kennedy  
Client P.O.:

Date Sampled: 06/13/11  
Date Received: 06/15/11  
Date Extracted: 06/15/11  
Date Analyzed: 06/17/11

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1106511

Lab ID		1106511-002A					
Client ID		DW1-7'					
Matrix		Soil					
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	125	%SS2:	116
%SS3:	99		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

Client Project ID: #OB-GCF; Exc.D  
Sidewalls  
Client Contact: Chris Kennedy  
Client P.O.:

Date Sampled: 06/13/11  
Date Received: 06/15/11  
Date Extracted: 06/15/11  
Date Analyzed: 06/17/11

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1106511

Lab ID		1106511-003A					
Client ID		DN1-7.5'					
Matrix		Soil					
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	125	%SS2:	116
%SS3:	99		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

Client Project ID: #OB-GCF; Exc.D  
Sidewalls  
Client Contact: Chris Kennedy  
Client P.O.:

Date Sampled: 06/14/11  
Date Received: 06/15/11  
Date Extracted: 06/15/11  
Date Analyzed: 06/17/11

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1106511

Lab ID		1106511-005A					
Client ID		DS2-7'					
Matrix		Soil					
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	125	%SS2:	114
%SS3:	96		

**Comments:**

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



CKG Environmental

P.O. Box 246

St. Helena, CA 94574

Client Project ID: #OB-GCF; Exc.D  
Sidewalls

Client Contact: Chris Kennedy

Client P.O.:

Date Sampled: 06/15/11

Date Received: 06/15/11

Date Extracted: 06/15/11

Date Analyzed: 06/17/11

**Volatile Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1106511

Lab ID		1106511-006A					
Client ID		DE/N-7'					
Matrix		Soil					
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

**Surrogate Recoveries (%)**

%SS1:	127	%SS2:	117
%SS3:	119		

## Comments:

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.





CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
	Client Contact: Chris Kennedy	Date Received: 06/15/11
	Client P.O.:	Date Extracted: 06/15/11
		Date Analyzed: 06/18/11

**Semi-Volatile Organics by GC/MS (Basic Target List)\***

Extraction Method: SW3550B

Analytical Method: SW8270C

Work Order: 1106511

Lab ID	1106511-002A
Client ID	DW1-7'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND	1.0	0.33	Acenaphthylene	ND	1.0	0.33
Acetochlor	ND	1.0	0.33	Anthracene	ND	1.0	0.33
Benzidine	ND	1.0	1.6	Benzoic Acid	ND	1.0	1.6
Benzo(a)anthracene	ND	1.0	0.33	Benzo(b)fluoranthene	ND	1.0	0.33
Benzo(k)fluoranthene	ND	1.0	0.33	Benzo(g,h,i)perylene	ND	1.0	0.33
Benzo(a)pyrene	ND	1.0	0.33	Benzyl Alcohol	ND	1.0	1.6
1,1-Biphenyl	ND	1.0	0.33	Bis (2-chloroethoxy) Methane	ND	1.0	0.33
Bis (2-chloroethyl) Ether	ND	1.0	0.33	Bis (2-chloroisopropyl) Ether	ND	1.0	0.33
Bis (2-ethylhexyl) Phthalate	ND	1.0	0.33	4-Bromophenyl Phenyl Ether	ND	1.0	0.33
Butylbenzyl Phthalate	ND	1.0	0.33	4-Chloroaniline	ND	1.0	0.66
4-Chloro-3-methylphenol	ND	1.0	0.33	2-Chloronaphthalene	ND	1.0	0.33
2-Chlorophenol	ND	1.0	0.33	4-Chlorophenyl Phenyl Ether	ND	1.0	0.33
Chrysene	ND	1.0	0.33	Dibenzo(a,h)anthracene	ND	1.0	0.33
Dibenzofuran	ND	1.0	0.33	Di-n-butyl Phthalate	ND	1.0	0.33
1,2-Dichlorobenzene	ND	1.0	0.33	1,3-Dichlorobenzene	ND	1.0	0.33
1,4-Dichlorobenzene	ND	1.0	0.33	3,3-Dichlorobenzidine	ND	1.0	0.66
2,4-Dichlorophenol	ND	1.0	0.33	Diethyl Phthalate	ND	1.0	0.33
2,4-Dimethylphenol	ND	1.0	0.33	Dimethyl Phthalate	ND	1.0	0.33
4,6-Dinitro-2-methylphenol	ND	1.0	1.6	2,4-Dinitrophenol	ND	1.0	1.6
2,4-Dinitrotoluene	ND	1.0	0.33	2,6-Dinitrotoluene	ND	1.0	0.33
Di-n-octyl Phthalate	ND	1.0	0.33	1,2-Diphenylhydrazine	ND	1.0	0.33
Fluoranthene	ND	1.0	0.33	Fluorene	ND	1.0	0.33
Hexachlorobenzene	ND	1.0	0.33	Hexachlorobutadiene	ND	1.0	0.33
Hexachlorocyclopentadiene	ND	1.0	1.6	Hexachloroethane	ND	1.0	0.33
Indeno (1,2,3-cd) pyrene	ND	1.0	0.33	Isophorone	ND	1.0	0.33
2-Methylnaphthalene	ND	1.0	0.33	2-Methylphenol (o-Cresol)	ND	1.0	0.33
3 &/or 4-Methylphenol (m,p-Cresol)	ND	1.0	0.33	Naphthalene	ND	1.0	0.33
2-Nitroaniline	ND	1.0	1.6	3-Nitroaniline	ND	1.0	1.6
4-Nitroaniline	ND	1.0	1.6	Nitrobenzene	ND	1.0	0.33
2-Nitrophenol	ND	1.0	1.6	4-Nitrophenol	ND	1.0	1.6
N-Nitrosodiphenylamine	ND	1.0	0.33	N-Nitrosodi-n-propylamine	ND	1.0	0.33
Pentachlorophenol	ND	1.0	1.6	Phenanthrene	ND	1.0	0.33
Phenol	ND	1.0	0.33	Pyrene	ND	1.0	0.33
1,2,4-Trichlorobenzene	ND	1.0	0.33	2,4,5-Trichlorophenol	ND	1.0	0.33
2,4,6-Trichlorophenol	ND	1.0	0.33				

**Surrogate Recoveries (%)**

%SS1:	62	%SS2:	53
%SS3:	60	%SS4:	44
%SS5:	38	%SS6:	69

**Comments:**

\* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPL extracts are reported in mg/L.

ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

#) surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content.



CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
	Client Contact: Chris Kennedy	Date Received: 06/15/11
	Client P.O.:	Date Extracted: 06/15/11
		Date Analyzed: 06/18/11

**Semi-Volatile Organics by GC/MS (Basic Target List)\***

Extraction Method: SW3550B

Analytical Method: SW8270C

Work Order: 1106511

Lab ID	1106511-003A
Client ID	DN1-7.5'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND	1.0	0.33	Acenaphthylene	ND	1.0	0.33
Acetochlor	ND	1.0	0.33	Anthracene	ND	1.0	0.33
Benzidine	ND	1.0	1.6	Benzoic Acid	ND	1.0	1.6
Benzo(a)anthracene	ND	1.0	0.33	Benzo(b)fluoranthene	ND	1.0	0.33
Benzo(k)fluoranthene	ND	1.0	0.33	Benzo(g,h,i)perylene	ND	1.0	0.33
Benzo(a)pyrene	ND	1.0	0.33	Benzyl Alcohol	ND	1.0	1.6
1,1-Biphenyl	ND	1.0	0.33	Bis (2-chloroethoxy) Methane	ND	1.0	0.33
Bis (2-chloroethyl) Ether	ND	1.0	0.33	Bis (2-chloroisopropyl) Ether	ND	1.0	0.33
Bis (2-ethylhexyl) Phthalate	ND	1.0	0.33	4-Bromophenyl Phenyl Ether	ND	1.0	0.33
Butylbenzyl Phthalate	ND	1.0	0.33	4-Chloroaniline	ND	1.0	0.66
4-Chloro-3-methylphenol	ND	1.0	0.33	2-Chloronaphthalene	ND	1.0	0.33
2-Chlorophenol	ND	1.0	0.33	4-Chlorophenyl Phenyl Ether	ND	1.0	0.33
Chrysene	ND	1.0	0.33	Dibenzo(a,h)anthracene	ND	1.0	0.33
Dibenzofuran	ND	1.0	0.33	Di-n-butyl Phthalate	ND	1.0	0.33
1,2-Dichlorobenzene	ND	1.0	0.33	1,3-Dichlorobenzene	ND	1.0	0.33
1,4-Dichlorobenzene	ND	1.0	0.33	3,3-Dichlorobenzidine	ND	1.0	0.66
2,4-Dichlorophenol	ND	1.0	0.33	Diethyl Phthalate	ND	1.0	0.33
2,4-Dimethylphenol	ND	1.0	0.33	Dimethyl Phthalate	ND	1.0	0.33
4,6-Dinitro-2-methylphenol	ND	1.0	1.6	2,4-Dinitrophenol	ND	1.0	1.6
2,4-Dinitrotoluene	ND	1.0	0.33	2,6-Dinitrotoluene	ND	1.0	0.33
Di-n-octyl Phthalate	ND	1.0	0.33	1,2-Diphenylhydrazine	ND	1.0	0.33
Fluoranthene	ND	1.0	0.33	Fluorene	ND	1.0	0.33
Hexachlorobenzene	ND	1.0	0.33	Hexachlorobutadiene	ND	1.0	0.33
Hexachlorocyclopentadiene	ND	1.0	1.6	Hexachloroethane	ND	1.0	0.33
Indeno (1,2,3-cd) pyrene	ND	1.0	0.33	Isophorone	ND	1.0	0.33
2-Methylnaphthalene	ND	1.0	0.33	2-Methylphenol (o-Cresol)	ND	1.0	0.33
3 &/or 4-Methylphenol (m,p-Cresol)	ND	1.0	0.33	Naphthalene	ND	1.0	0.33
2-Nitroaniline	ND	1.0	1.6	3-Nitroaniline	ND	1.0	1.6
4-Nitroaniline	ND	1.0	1.6	Nitrobenzene	ND	1.0	0.33
2-Nitrophenol	ND	1.0	1.6	4-Nitrophenol	ND	1.0	1.6
N-Nitrosodiphenylamine	ND	1.0	0.33	N-Nitrosodi-n-propylamine	ND	1.0	0.33
Pentachlorophenol	ND	1.0	1.6	Phenanthrene	ND	1.0	0.33
Phenol	ND	1.0	0.33	Pyrene	ND	1.0	0.33
1,2,4-Trichlorobenzene	ND	1.0	0.33	2,4,5-Trichlorophenol	ND	1.0	0.33
2,4,6-Trichlorophenol	ND	1.0	0.33				

**Surrogate Recoveries (%)**

%SS1:	82	%SS2:	66
%SS3:	67	%SS4:	74
%SS5:	57	%SS6:	68

**Comments:**

\* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPL extracts are reported in mg/L.

ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

#) surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content.



CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
	Client Contact: Chris Kennedy	Date Received: 06/15/11
	Client P.O.:	Date Extracted: 06/15/11
		Date Analyzed: 06/18/11

**Semi-Volatile Organics by GC/MS (Basic Target List)\***

Extraction Method: SW3550B

Analytical Method: SW8270C

Work Order: 1106511

Lab ID	1106511-005A
Client ID	DS2-7'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND	1.0	0.33	Acenaphthylene	ND	1.0	0.33
Acetochlor	ND	1.0	0.33	Anthracene	ND	1.0	0.33
Benzidine	ND	1.0	1.6	Benzoic Acid	ND	1.0	1.6
Benzo(a)anthracene	ND	1.0	0.33	Benzo(b)fluoranthene	ND	1.0	0.33
Benzo(k)fluoranthene	ND	1.0	0.33	Benzo(g,h,i)perylene	ND	1.0	0.33
Benzo(a)pyrene	ND	1.0	0.33	Benzyl Alcohol	ND	1.0	1.6
1,1-Biphenyl	ND	1.0	0.33	Bis (2-chloroethoxy) Methane	ND	1.0	0.33
Bis (2-chloroethyl) Ether	ND	1.0	0.33	Bis (2-chloroisopropyl) Ether	ND	1.0	0.33
Bis (2-ethylhexyl) Phthalate	ND	1.0	0.33	4-Bromophenyl Phenyl Ether	ND	1.0	0.33
Butylbenzyl Phthalate	ND	1.0	0.33	4-Chloroaniline	ND	1.0	0.66
4-Chloro-3-methylphenol	ND	1.0	0.33	2-Chloronaphthalene	ND	1.0	0.33
2-Chlorophenol	ND	1.0	0.33	4-Chlorophenyl Phenyl Ether	ND	1.0	0.33
Chrysene	ND	1.0	0.33	Dibenzo(a,h)anthracene	ND	1.0	0.33
Dibenzofuran	ND	1.0	0.33	Di-n-butyl Phthalate	ND	1.0	0.33
1,2-Dichlorobenzene	ND	1.0	0.33	1,3-Dichlorobenzene	ND	1.0	0.33
1,4-Dichlorobenzene	ND	1.0	0.33	3,3-Dichlorobenzidine	ND	1.0	0.66
2,4-Dichlorophenol	ND	1.0	0.33	Diethyl Phthalate	ND	1.0	0.33
2,4-Dimethylphenol	ND	1.0	0.33	Dimethyl Phthalate	ND	1.0	0.33
4,6-Dinitro-2-methylphenol	ND	1.0	1.6	2,4-Dinitrophenol	ND	1.0	1.6
2,4-Dinitrotoluene	ND	1.0	0.33	2,6-Dinitrotoluene	ND	1.0	0.33
Di-n-octyl Phthalate	ND	1.0	0.33	1,2-Diphenylhydrazine	ND	1.0	0.33
Fluoranthene	ND	1.0	0.33	Fluorene	ND	1.0	0.33
Hexachlorobenzene	ND	1.0	0.33	Hexachlorobutadiene	ND	1.0	0.33
Hexachlorocyclopentadiene	ND	1.0	1.6	Hexachloroethane	ND	1.0	0.33
Indeno (1,2,3-cd) pyrene	ND	1.0	0.33	Isophorone	ND	1.0	0.33
2-Methylnaphthalene	ND	1.0	0.33	2-Methylphenol (o-Cresol)	ND	1.0	0.33
3 &/or 4-Methylphenol (m,p-Cresol)	ND	1.0	0.33	Naphthalene	ND	1.0	0.33
2-Nitroaniline	ND	1.0	1.6	3-Nitroaniline	ND	1.0	1.6
4-Nitroaniline	ND	1.0	1.6	Nitrobenzene	ND	1.0	0.33
2-Nitrophenol	ND	1.0	1.6	4-Nitrophenol	ND	1.0	1.6
N-Nitrosodiphenylamine	ND	1.0	0.33	N-Nitrosodi-n-propylamine	ND	1.0	0.33
Pentachlorophenol	ND	1.0	1.6	Phenanthrene	ND	1.0	0.33
Phenol	ND	1.0	0.33	Pyrene	ND	1.0	0.33
1,2,4-Trichlorobenzene	ND	1.0	0.33	2,4,5-Trichlorophenol	ND	1.0	0.33
2,4,6-Trichlorophenol	ND	1.0	0.33				

**Surrogate Recoveries (%)**

%SS1:	88	%SS2:	74
%SS3:	72	%SS4:	77
%SS5:	52	%SS6:	69

**Comments:**

\* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPL extracts are reported in mg/L.

ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

#) surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content.



CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
	Client Contact: Chris Kennedy	Date Received: 06/15/11
	Client P.O.:	Date Extracted: 06/15/11
		Date Analyzed: 06/20/11

**Semi-Volatile Organics by GC/MS (Basic Target List)\***

Extraction Method: SW3550B

Analytical Method: SW8270C

Work Order: 1106511

Lab ID	1106511-006A
Client ID	DE/N-7'
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND<16	50	0.33	Acenaphthylene	ND<16	50	0.33
Acetochlor	ND<16	50	0.33	Anthracene	ND<16	50	0.33
Benzidine	ND<80	50	1.6	Benzoic Acid	ND<80	50	1.6
Benzo(a)anthracene	ND<16	50	0.33	Benzo(b)fluoranthene	ND<16	50	0.33
Benzo(k)fluoranthene	ND<16	50	0.33	Benzo(g,h,i)perylene	ND<16	50	0.33
Benzo(a)pyrene	ND<16	50	0.33	Benzyl Alcohol	ND<80	50	1.6
1,1-Biphenyl	ND<16	50	0.33	Bis (2-chloroethoxy) Methane	ND<16	50	0.33
Bis (2-chloroethyl) Ether	ND<16	50	0.33	Bis (2-chloroisopropyl) Ether	ND<16	50	0.33
Bis (2-ethylhexyl) Phthalate	ND<16	50	0.33	4-Bromophenyl Phenyl Ether	ND<16	50	0.33
Butylbenzyl Phthalate	ND<16	50	0.33	4-Chloroaniline	ND<33	50	0.66
4-Chloro-3-methylphenol	ND<16	50	0.33	2-Chloronaphthalene	ND<16	50	0.33
2-Chlorophenol	ND<16	50	0.33	4-Chlorophenyl Phenyl Ether	ND<16	50	0.33
Chrysene	ND<16	50	0.33	Dibenzo(a,h)anthracene	ND<16	50	0.33
Dibenzofuran	ND<16	50	0.33	Di-n-butyl Phthalate	ND<16	50	0.33
1,2-Dichlorobenzene	ND<16	50	0.33	1,3-Dichlorobenzene	ND<16	50	0.33
1,4-Dichlorobenzene	ND<16	50	0.33	3,3-Dichlorobenzidine	ND<33	50	0.66
2,4-Dichlorophenol	ND<16	50	0.33	Diethyl Phthalate	ND<16	50	0.33
2,4-Dimethylphenol	ND<16	50	0.33	Dimethyl Phthalate	ND<16	50	0.33
4,6-Dinitro-2-methylphenol	ND<80	50	1.6	2,4-Dinitrophenol	ND<80	50	1.6
2,4-Dinitrotoluene	ND<16	50	0.33	2,6-Dinitrotoluene	ND<16	50	0.33
Di-n-octyl Phthalate	ND<16	50	0.33	1,2-Diphenylhydrazine	ND<16	50	0.33
Fluoranthene	ND<16	50	0.33	Fluorene	ND<16	50	0.33
Hexachlorobenzene	ND<16	50	0.33	Hexachlorobutadiene	ND<16	50	0.33
Hexachlorocyclopentadiene	ND<80	50	1.6	Hexachloroethane	ND<16	50	0.33
Indeno (1,2,3-cd) pyrene	ND<16	50	0.33	Isophorone	ND<16	50	0.33
2-Methylnaphthalene	ND<16	50	0.33	2-Methylphenol (o-Cresol)	ND<16	50	0.33
3 &/or 4-Methylphenol (m,p-Cresol)	ND<16	50	0.33	Naphthalene	ND<16	50	0.33
2-Nitroaniline	ND<80	50	1.6	3-Nitroaniline	ND<80	50	1.6
4-Nitroaniline	ND<80	50	1.6	Nitrobenzene	ND<16	50	0.33
2-Nitrophenol	ND<80	50	1.6	4-Nitrophenol	ND<80	50	1.6
N-Nitrosodiphenylamine	ND<16	50	0.33	N-Nitrosodi-n-propylamine	ND<16	50	0.33
Pentachlorophenol	ND<80	50	1.6	Phenanthrene	ND<16	50	0.33
Phenol	ND<16	50	0.33	Pyrene	ND<16	50	0.33
1,2,4-Trichlorobenzene	ND<16	50	0.33	2,4,5-Trichlorophenol	ND<16	50	0.33
2,4,6-Trichlorophenol	ND<16	50	0.33				

**Surrogate Recoveries (%)**

%SS1:	88	%SS2:	71
%SS3:	71	%SS4:	46
%SS5:	130	%SS6:	70

Comments: a3

\* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP &amp; SPLP extracts are reported in mg/L.

ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

#) surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content.

**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
	Client Contact: Chris Kennedy	Date Received: 06/15/11
	Client P.O.:	Date Extracted 06/15/11
		Date Analyzed 06/17/11

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline \***

Extraction method: SW5030B

Analytical methods: SW8015Bm

Work Order: 1106511

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS	Comments
001A	DS1-7'	S	110	10	93	d7,d9
002A	DW1-7'	S	2.4	1	80	d7
003A	DN1-7.5'	S	ND	1	84	
004A	DW2-8'	S	1400	50	---#	d7,d9
005A	DS2-7'	S	ND	1	81	
006A	DE/N-7'	S	30	5	92	d7
007A	DE/S-7'	S	ND	1	83	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram  
d9) no recognizable pattern



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 Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
 Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; Exc.D Sidewalls	Date Sampled: 06/13/11-06/15/11
	Client Contact: Chris Kennedy	Date Received: 06/15/11
	Client P.O.:	Date Extracted 06/15/11
		Date Analyzed 06/17/11-06/23/11

**Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\***

Extraction method: SW3550B/3630C

Analytical methods: SW8015B

Work Order: 1106511

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1106511-001A	DS1-7'	S	2000	100	112	e7,e3
1106511-002A	DW1-7'	S	47	1	109	e7,e3
1106511-003A	DN1-7.5'	S	ND	1	116	
1106511-004A	DW2-8'	S	1300	10	107	e11,e1
1106511-005A	DS2-7'	S	2.4	1	111	e2
1106511-006A	DE/N-7'	S	6200	200	101	e7,e3
1106511-007A	DE/S-7'	S	3.1	1	96	e7,e2

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

%SS = Percent Recovery of Surrogate Standard. DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

e1) unmodified or weakly modified diesel is significant  
 e2) diesel range compounds are significant; no recognizable pattern  
 e3) aged diesel is significant  
 e7) oil range compounds are significant  
 e11) stoddard solvent/mineral spirit (?)



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59035

WorkOrder: 1106511

Table with columns: EPA Method: SW8260B, Extraction: SW5030B, Spiked Sample ID: 1106469-020A. Rows include analytes like tert-Amyl methyl ether (TAME), Benzene, t-Butyl alcohol (TBA), Chlorobenzene, etc., with columns for Sample, Spiked, MS, MSD, MS-MSD, LCS, LCSD, LCS-LCSD, and Acceptance Criteria (%).

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

BATCH 59035 SUMMARY

Summary table with columns: Lab ID, Date Sampled, Date Extracted, Date Analyzed. Rows show data for Lab IDs 1106511-002A, 1106511-003A, 1106511-005A, and 1106511-006A.

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.
% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.
N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.
Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59076

WorkOrder: 1106511

EPA Method: SW8015Bm		Extraction: SW5030B							Spiked Sample ID: 1106486-004A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	0.60	124	125	1.10	128	125	2.12	70 - 130	20	70 - 130	20
MTBE	ND	0.10	105	111	5.67	119	111	7.62	70 - 130	20	70 - 130	20
Benzene	ND	0.10	88.9	95.6	7.23	90.8	91.5	0.818	70 - 130	20	70 - 130	20
Toluene	ND	0.10	89.4	94.1	5.15	90.6	91.2	0.573	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	90.3	93.6	3.63	91.9	92.1	0.231	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	89.3	91.8	2.79	91.3	91.5	0.112	70 - 130	20	70 - 130	20
%SS:	80	0.10	75	78	3.19	75	75	0	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 59076 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1106511-001A	06/13/11	06/15/11	06/17/11 12:20 AM	1106511-002A	06/13/11	06/15/11	06/17/11 3:44 PM
1106511-003A	06/13/11	06/15/11	06/17/11 4:15 PM	1106511-004A	06/14/11	06/15/11	06/17/11 2:21 AM
1106511-005A	06/14/11	06/15/11	06/17/11 5:17 PM	1106511-006A	06/15/11	06/15/11	06/17/11 10:22 PM
1106511-007A	06/15/11	06/15/11	06/17/11 11:22 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 £ TPH(btex) = sum of BTEX areas from the FID.  
 # cluttered chromatogram; sample peak coelutes with surrogate peak.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59099

WorkOrder: 1106511

EPA Method: SW8015B		Extraction: SW3550B/3630C							Spiked Sample ID: 1106511-007A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	3.1	40	106	105	0.765	113	106	6.45	70 - 130	30	70 - 130	30
%SS:	96	25	97	96	1.04	98	84	15.1	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 59099 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1106511-001A	06/13/11	06/15/11	06/21/11 8:26 PM	1106511-002A	06/13/11	06/15/11	06/17/11 10:08 PM
1106511-003A	06/13/11	06/15/11	06/19/11 6:41 AM	1106511-004A	06/14/11	06/15/11	06/23/11 7:52 AM
1106511-005A	06/14/11	06/15/11	06/23/11 6:42 AM	1106511-006A	06/15/11	06/15/11	06/23/11 12:00 PM
1106511-007A	06/15/11	06/15/11	06/19/11 8:59 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8270C

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59100

WorkOrder: 1106511

Table with columns: EPA Method: SW8270C, Extraction: SW3550B, Spiked Sample ID: 1106511-006A. Rows include analytes like Acenaphthene, 4-Chloro-3-methylphenol, etc., and spike recoveries (%SS1-%SS6).

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

BATCH 59100 SUMMARY

Summary table with columns: Lab ID, Date Sampled, Date Extracted, Date Analyzed. Rows show data for 1106511-002A, 1106511-003A, 1106511-005A, and 1106511-006A.

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.
% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.
N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = matrix interference and / or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix, sample diluted due to high matrix or analyte content, or MS/MSD samples diluted due to high organic content.
#) surrogate diluted out of range; & = low or no recovery of surrogate or target analytes due to matrix interference.
Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



## Analytical Report

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; ExD-Phs.2	Date Sampled: 07/13/11-07/14/11
		Date Received: 07/15/11
	Client Contact: Christina Kennedy	Date Reported: 07/25/11
	Client P.O.:	Date Completed: 07/25/11

**WorkOrder: 1107395**

July 25, 2011

Dear Christina:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#OB-GCF; ExD-Phs.2**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD  
PITTSBURG, CA 94565-1701

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (877) 252-9262 Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

GeoTracker EDF  PDF  Excel  Write On (DW)

Check if sample is effluent and "J" flag is required

Report To: Chris Kennedy Bill To: Same  
Company: CKG Environmental  
P.O. Box 246  
Saint Helena, CA 94574 E-Mail: [ckennedy@geologist.com](mailto:ckennedy@geologist.com)  
Tele: (707) 967-8080 Fax: ( )  
Project #: OB-GCF Project Name: Ex D - Pgs. 2  
Project Location: 3600 Alameda Avenue, Oakland, CA  
Sampler Signature:

### Analysis Request

Other

Comments

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED									
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other						
DW3-8'		7-13-11		1	402 gals															
DW4-7'		↓		1	↓															
DW5-8'		↓		1	↓															
DS3-8.5'		7-14-11		1	↓															
DS4-7.5'		↓		1	↓															
DE3-7.5'		↓		1	↓															
SDKS-4'		7-13-11		1	402 gals															
SE-8'		↓		1	↓															

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE																				
TPH as Diesel (8015) w/ sulfur & 922-2/OP																				
Total Petroleum Oil & Grease (1664 / 5520 E/R&F)																				
Total Petroleum Hydrocarbons (418.1)																				
EPA 502.2 / 601 / 8010 / 8021 (HVOCs)																				
MTBE / BTEX ONLY (EPA 602 / 8021)																				
EPA 505 / 608 / 8081 (CI Pesticides)																				
EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners																				
EPA 507 / 8141 (NP Pesticides)																				
EPA 515 / 8151 (Acidic CI Herbicides)																				
EPA 524.2 / 624 / 8260 (VOCs)																				
EPA 525.2 / 625 / 8270 (SVOCs)																				
EPA 8270 SIM / 8310 (PAHs / PNAs)																				
CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)																				
LAUT 5 Metals (200.7 / 200.8 / 6010 / 6020)																				
Lead (200.7 / 200.8 / 6010 / 6020)																				
Filter sample for DISSOLVED metals analysis																				

\*\*Indicate here if these samples are potentially dangerous to handle:

STRONG  
H/C ODOR

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date: 7/15/11	Time: 12:30	Received By:
Relinquished By:	Date: 7/15/11	Time: 1:30	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/T 8.4  
 GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PRESERVED IN LAB \_\_\_\_\_  
 VOAS O&G METALS OTHER  
 PRESERVATION pH<2

**McC Campbell Analytical, Inc.**

1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 1107395**

**ClientCode: CKGS**

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

**Report to:**

Christina Kennedy  
 CKG Environmental  
 P.O. Box 246  
 St. Helena, CA 94574  
 (707) 967-8080    FAX: (707) 967-8080

Email: ckennedy@geologist.com  
 cc:  
 PO:  
 ProjectNo: #OB-GCF; ExD-Phs.2

**Bill to:**

Accounts Payable  
 CKG Environmental  
 808 Zinfindel Lane  
 St. Helena, CA 94574

**Requested TAT: 5 days**

*Date Received: 07/15/2011*  
*Date Printed: 07/15/2011*

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1107395-001	DW3-8'	Soil	7/13/2011	<input type="checkbox"/>	A	A											
1107395-003	DW5-8'	Soil	7/13/2011	<input type="checkbox"/>	A	A											
1107395-005	DS4-7.5'	Soil	7/14/2011	<input type="checkbox"/>	A	A											
1107395-006	DE3-7.5'	Soil	7/14/2011	<input type="checkbox"/>	A	A											

**Test Legend:**

1	G-MBTX_S	2	TPH(D)WSG_S	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Ana Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **CKG Environmental**

Date and Time Received: **7/15/2011 4:57:25 PM**

Project Name: **#OB-GCF; ExD-Phs.2**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **1107395** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: 8.4°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
- Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; ExD-Phs.2	Date Sampled: 07/13/11-07/14/11
	Client Contact: Christina Kennedy	Date Received: 07/15/11
	Client P.O.:	Date Extracted: 07/15/11
		Date Analyzed: 07/19/11-07/20/11

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1107395

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	DW3-8'	S	90	ND<0.50	ND<0.050	0.22	ND<0.050	0.20	10	96	d7,d9
003A	DW5-8'	S	110	ND<0.50	ND<0.050	ND<0.050	ND<0.050	0.30	10	94	d7,d9
005A	DS4-7.5'	S	110	ND<0.50	ND<0.050	ND<0.050	ND<0.050	0.19	10	89	d7,d9
006A	DE3-7.5'	S	ND	ND	ND	ND	ND	ND	1	78	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram  
d9) no recognizable pattern



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Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: #OB-GCF; ExD-Phs.2	Date Sampled: 07/13/11-07/14/11
	Client Contact: Christina Kennedy	Date Received: 07/15/11
	Client P.O.:	Date Extracted 07/15/11
		Date Analyzed 07/22/11-07/24/11

### Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\*

Extraction method: SW3550B/3630C

Analytical methods: SW8015B

Work Order: 1107395

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1107395-001A	DW3-8'	S	1400	20	92	e7,e2
1107395-003A	DW5-8'	S	480	1	109	e1
1107395-005A	DS4-7.5'	S	450	1	117	e1
1107395-006A	DE3-7.5'	S	33	1	120	e3

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

%SS = Percent Recovery of Surrogate Standard. DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

e1) unmodified or weakly modified diesel is significant  
e2) diesel range compounds are significant; no recognizable pattern  
e3) aged diesel is significant  
e7) oil range compounds are significant





**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59761

WorkOrder: 1107395

EPA Method: SW8021B/8015Bm		Extraction: SW5030B							Spiked Sample ID: 1107084-002A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) £	ND	0.60	110	97.6	12.4	94.5	102	7.42	70 - 130	20	70 - 130	20
MTBE	ND	0.10	109	114	4.77	103	107	3.34	70 - 130	20	70 - 130	20
Benzene	ND	0.10	104	108	3.76	109	106	2.76	70 - 130	20	70 - 130	20
Toluene	ND	0.10	93.6	94.3	0.771	96.9	93.7	3.33	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	97.3	97.5	0.242	98.1	98.1	0	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	111	110	0.921	111	110	0.755	70 - 130	20	70 - 130	20
%SS:	77	0.10	104	106	1.94	105	105	0	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 59761 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1107395-001A	07/13/11	07/15/11	07/19/11 7:44 PM	1107395-003A	07/13/11	07/15/11	07/19/11 8:14 PM
1107395-005A	07/14/11	07/15/11	07/19/11 8:45 PM	1107395-006A	07/14/11	07/15/11	07/20/11 8:12 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 £ TPH(btex) = sum of BTEX areas from the FID.  
 # cluttered chromatogram; sample peak coelutes with surrogate peak.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59753

WorkOrder: 1107395

**EPA Method: SW8015B**

**Extraction: SW3550B/3630C**

**Spiked Sample ID: 1107384-012A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	4.8	40	102	103	0.827	130	115	12.2	70 - 130	30	70 - 130	30
%SS:	92	25	109	110	0.380	105	98	7.31	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 59753 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1107395-001A	07/13/11	07/15/11	07/23/11 7:27 PM	1107395-003A	07/13/11	07/15/11	07/24/11 10:44 PM
1107395-005A	07/14/11	07/15/11	07/22/11 3:55 AM	1107395-006A	07/14/11	07/15/11	07/22/11 12:06 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



## Analytical Report

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: SPD2(ABCD)(EFGH)	Date Sampled: 07/25/11
		Date Received: 07/25/11
	Client Contact: Christina Kennedy	Date Reported: 07/26/11
	Client P.O.:	Date Completed: 07/26/11

**WorkOrder: 1107680**

July 26, 2011

Dear Christina:

Enclosed within are:

- 1) The results of the **2** analyzed samples from your project: **SPD2(ABCD)(EFGH)**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD  
 PITTSBURG, CA 94565-1701  
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 Telephone: (877) 252-9262 Fax: (925) 252-9269

1107080

## CHAIN OF CUSTODY RECORD

### TURN AROUND TIME

RUSH  24 HR  48 HR  72 HR  5 DAY

GeoTracker EDF  PDF  Excel  Write On (DW)

Check if sample is effluent and "J" flag is required

Report To: *Chris Kennedy* Bill To: *CRG Environmental*  
 Company: *P.O. Box 216*  
*St. Helena CA 94571*  
 E-Mail: *ckennedy@*  
 Tele: ( ) Fax: ( ) *geologist.com*  
 Project #: Project Name:  
 Project Location:  
 Sampler Signature:

### Analysis Request

### Other Comments

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
SPDZ (ABCD)		7/25/11	2:30	4		✓											Filter Samples for Metals analysis: Yes / No
SPDZ (EGG.H)		"	"	4		✓											

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE  
 TPH as Diesel (8015) / motor oil  
 Total Petroleum Oil & Grease (1664 / 5520 E/B&F)  
 Total Petroleum Hydrocarbons (418.1)  
 EPA 8260 (HVOCs)  
 MTBE / BTEX ONLY (EPA 602 / 8021)  
 EPA 505 / 608 / 8081 (CI Pesticides)  
 EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners  
 EPA 507 / 8141 (NP Pesticides)  
 EPA 515.3 / 8151 (Acidic CI Herbicides)  
 EPA 524.2 / 624 / 8260 (VOCs)  
 EPA 525.2 / 625 / 8270 (SVOCs)  
 EPA 8270 SIM / 8310 (PAHs / PNAs)  
 CAM 17 Metals (200.8 / 6020)  
 LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)  
 Lead (200.7 / 200.8 / 6010 / 6020)

with silica gel clean up  
 RUSH

Relinquished By: *[Signature]* Date: *7/25* Time: *3:19* Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: *7/25/11* Time: *1600* Received By: *[Signature]*  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/r 3.8  
 GOOD CONDITION  
 HEAD SPACE ABSENT  
 DECHLORINATED IN LAB  
 APPROPRIATE CONTAINERS  
 PRESERVED IN LAB  
 COMMENTS:  
 VOAS O&G METALS OTHER  
 PRESERVATION pH<2

**McC Campbell Analytical, Inc.**

1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 1107680**

**ClientCode: CKGS**

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

**Report to:**  
 Christina Kennedy  
 CKG Environmental  
 P.O. Box 246  
 St. Helena, CA 94574  
 (707) 967-8080    FAX: (707) 967-8080

**Email:** ckennedy@geologist.com

**Bill to:**  
 Accounts Payable  
 CKG Environmental  
 808 Zinfindel Lane  
 St. Helena, CA 94574

**Requested TAT:** 1 day

**Date Received:** 07/25/2011  
**Date Printed:** 07/25/2011

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1107680-001	SPD2(ABCD)	Soil	7/25/2011 14:30	<input type="checkbox"/>	A	A	A										
1107680-002	SPD2(EFGH)	Soil	7/25/2011 14:30	<input type="checkbox"/>	A	A	A										

**Test Legend:**

1	G-MBTEX_S	2	PB_S	3	TPH(DMO)WSG_S	4		5	
6		7		8		9		10	
11		12							

**Prepared by: Ana Venegas**

**Comments:** 24hr rush

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **CKG Environmental**

Date and Time Received: **7/25/2011 4:37:54 PM**

Project Name: **SPD2(ABCD)(EFGH)**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **1107680** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: 3.8°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
- Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



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Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: SPD2(ABCD)(EFGH)	Date Sampled: 07/25/11
	Client Contact: Christina Kennedy	Date Received: 07/25/11
	Client P.O.:	Date Extracted: 07/25/11
		Date Analyzed: 07/26/11

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1107680

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	SPD2(ABCD)	S	16	ND<0.10	ND<0.010	0.013	ND<0.010	0.051	2	91	d7,d9
002A	SPD2(EFGH)	S	8.3	ND	ND	ND	ND	0.026	1	95	d7

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
 d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram  
 d9) no recognizable pattern



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CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: SPD2(ABCD)(EFGH)	Date Sampled: 07/25/11
	Client Contact: Christina Kennedy	Date Received: 07/25/11
	Client P.O.:	Date Extracted: 07/25/11
		Date Analyzed: 07/26/11

### Lead by ICP\*

Extraction method: SW3050B

Analytical methods: SW6010B

Work Order: 1107680

Lab ID	Client ID	Matrix	Extraction Type	Lead	DF	% SS	Comments
1107680-001A	SPD2(ABCD)	S	TOTAL	5.6	1	103	
1107680-002A	SPD2(EFGH)	S	TOTAL	5.7	1	87	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TOTAL	NA	µg/L
	S	TOTAL	5.0	mg/Kg

\*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

# means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.  
 TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.  
 DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.

%SS = Percent Recovery of Surrogate Standard  
 DF = Dilution Factor

 Angela Rydelius, Lab Manager





**McC Campbell Analytical, Inc.**

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 Telephone: 877-252-9262 Fax: 925-252-9269

CKG Environmental  P.O. Box 246  St. Helena, CA 94574	Client Project ID: SPD2(ABCD)(EFGH)	Date Sampled: 07/25/11
	Client Contact: Christina Kennedy	Date Received: 07/25/11
	Client P.O.:	Date Extracted: 07/25/11
		Date Analyzed: 07/26/11

**Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\***

Extraction method: SW3550B/3630C

Analytical methods: SW8015B

Work Order: 1107680

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Motor Oil (C18-C36)	DF	% SS	Comments
1107680-001A	SPD2(ABCD)	S	180	220	20	109	e7,e2
1107680-002A	SPD2(EFGH)	S	170	260	1	94	e7,e2

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L
	S	1.0	5.0	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

%SS = Percent Recovery of Surrogate Standard. DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
 e2) diesel range compounds are significant; no recognizable pattern  
 e7) oil range compounds are significant

 Angela Rydelius, Lab Manager



**QC SUMMARY REPORT FOR SW8021B/8015Bm**

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59978

WorkOrder: 1107680

EPA Method: SW8021B/8015Bm		Extraction: SW5030B							Spiked Sample ID: 1107569-016A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	0.60	123	123	0	128	127	0.128	70 - 130	20	70 - 130	20
MTBE	ND	0.10	110	122	9.89	124	123	0.819	70 - 130	20	70 - 130	20
Benzene	ND	0.10	85.1	95.4	11.4	94	96.8	2.97	70 - 130	20	70 - 130	20
Toluene	ND	0.10	82.1	92.5	11.9	90.7	93	2.50	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	82.7	94.9	13.7	91.7	93	1.32	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	82.2	92.9	12.1	91.1	92.5	1.53	70 - 130	20	70 - 130	20
%SS:	89	0.10	73	79	7.51	77	84	8.56	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 59978 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1107680-001A	07/25/11 2:30 PM	07/25/11	07/26/11 11:52 AM	1107680-002A	07/25/11 2:30 PM	07/25/11	07/26/11 8:34 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 £ TPH(btex) = sum of BTEX areas from the FID.  
 # cluttered chromatogram; sample peak coelutes with surrogate peak.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



### QC SUMMARY REPORT FOR 6010B

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 1107680

EPA Method: SW6010B		Extraction: SW3050B				BatchID: 59875			Spiked Sample ID: 1107523-001A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	Spiked	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	mg/Kg	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Lead	22	50	89.1	93.6	3.28	10	89.7	75.1	17.7	75 - 125	25	75 - 125	25
%SS:	94	500	88	95	7.85	500	92	100	8.49	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 59875 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1107680-001A	07/25/11 2:30 PM	07/25/11	07/26/11 2:33 PM	1107680-002A	07/25/11 2:30 PM	07/25/11	07/26/11 2:35 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not applicable to this method.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 59979

WorkOrder: 1107680

EPA Method: SW8015B		Extraction: SW3550B/3630C							Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	N/A	40	N/A	N/A	N/A	112	103	8.73	N/A	N/A	70 - 130	30
%SS:	N/A	25	N/A	N/A	N/A	103	84	20.9	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 59979 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1107680-001A	07/25/11 2:30 PM	07/25/11	07/26/11 3:57 PM	1107680-002A	07/25/11 2:30 PM	07/25/11	07/26/11 4:38 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



## Analytical Sciences

---

June 28, 2011

Chris Kennedy  
CKG Environmental, Inc.  
P.O. Box 246  
St. Helena, CA 94574

Dear Chris,

Enclosed you will find Analytical Sciences' final report 1062709 for your Owen Brockway, Oakland project. An invoice for this work is enclosed.

Should you or your client have any questions regarding this report please contact me at your convenience. We appreciate you selecting Analytical Sciences for this work and look forward to serving your analytical chemistry needs on projects in the future.

Sincerely,

Analytical Sciences

A handwritten signature in blue ink that reads "Mark A. Valentini".

---

Mark A. Valentini, Ph.D.

Laboratory Director



Report Date: June 28, 2011

## Laboratory Report

Chris Kennedy  
CKG Environmental, Inc.  
P.O. Box 246  
St. Helena, CA 94574

Project Name: **Owen Brockway, Oakland**                      **Exc. D S.P. (6-27-11)**  
Lab Project: **1062709**

This 7 page report of analytical data has been reviewed and approved for release.

---

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline & BTEX

Lab#	Sample ID	Compound Name	Result (mg/kg)	RDL (mg/kg)
1062709-01	SPD (A+B+C+D)	Gasoline	8.2	2.0
		Benzene	ND	0.010
		Toluene	ND	0.010
		Ethylbenzene	ND	0.010
		Xylenes	ND	0.030

Date Sampled:	06/27/11	Date Analyzed:	06/28/11	QC Batch:	B009352
Date Received:	06/27/11	Method:	EPA 8015/8021		

### TPH Gasoline & BTEX

Lab#	Sample ID	Compound Name	Result (mg/kg)	RDL (mg/kg)
1062709-02	SPD (E+F+G+H)	Gasoline	14	2.0
		Benzene	ND	0.010
		Toluene	ND	0.010
		Ethylbenzene	ND	0.010
		Xylenes	ND	0.030

Date Sampled:	06/27/11	Date Analyzed:	06/28/11	QC Batch:	B009352
Date Received:	06/27/11	Method:	EPA 8015/8021		

### TPH Diesel & Motor Oil with Silica Gel

Lab#	Sample ID	Compound Name	Result (mg/kg)	RDL (mg/kg)
1062709-01	SPD (A+B+C+D)	Diesel	540	5.0
		Motor Oil	370	50

Date Sampled:	06/27/11	Date Analyzed:	06/27/11	QC Batch:	B009364
Date Received:	06/27/11	Method:	EPA 8015 Silica Gel		



### TPH Diesel & Motor Oil with Silica Gel

Lab#	Sample ID	Compound Name	Result (mg/kg)	RDL (mg/kg)
1062709-02	<b>SPD (E+F+G+H)</b>	Diesel	250	5.0
		Motor Oil	150	50

Date Sampled:	06/27/11	Date Analyzed:	06/28/11	QC Batch:	B009364
Date Received:	06/27/11	Method:	EPA 8015 Silica Gel		

### Metals

Lab#	Sample ID	Compound Name	Result (mg/kg)	RDL (mg/kg)
1062709-01	<b>SPD (A+B+C+D)</b>	Lead (Pb)	6.0	3.0

Date Sampled:	06/27/11	Date Analyzed:	06/28/11	QC Batch:	B009357
Date Received:	06/27/11	Method:	EPA 6010B		

### Metals

Lab#	Sample ID	Compound Name	Result (mg/kg)	RDL (mg/kg)
1062709-02	<b>SPD (E+F+G+H)</b>	Lead (Pb)	6.8	3.0

Date Sampled:	06/27/11	Date Analyzed:	06/28/11	QC Batch:	B009357
Date Received:	06/27/11	Method:	EPA 6010B		





## Quality Assurance Report

### TPH Gasoline & BTEX

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B009352 - EPA 5030 GC</b>									
<b>Blank (B009352-BLK1)</b>				Prepared & Analyzed: 06/24/11					
Gasoline	ND	1.0	mg/kg						
Benzene	ND	0.005	mg/kg						
Toluene	ND	0.005	mg/kg						
Ethylbenzene	ND	0.005	mg/kg						
Xylenes	ND	0.015	mg/kg						
<b>LCS (B009352-BS1)</b>				Prepared & Analyzed: 06/24/11					
Benzene	0.022	0.005	mg/kg	0.0250		88 80-120			
Toluene	0.022	0.005	mg/kg	0.0250		90 80-120			
Ethylbenzene	0.022	0.005	mg/kg	0.0250		89 80-120			
Xylenes	0.070	0.015	mg/kg	0.0750		93 80-120			
<b>LCS Dup (B009352-BSD1)</b>				Prepared: 06/24/11 Analyzed: 06/28/11					
Benzene	0.022	0.005	mg/kg	0.0250		87 80-120	1	20	
Toluene	0.023	0.005	mg/kg	0.0250		91 80-120	2	20	
Ethylbenzene	0.023	0.005	mg/kg	0.0250		91 80-120	2	20	
Xylenes	0.067	0.015	mg/kg	0.0750		89 80-120	5	20	



## TPH Diesel & Motor Oil with Silica Gel

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B009364 - EPA 3550B GC</b>										
<b>Blank (B009364-BLK1)</b>				Prepared & Analyzed: 06/27/11						
Diesel	ND	5.0	mg/kg							
Motor Oil	ND	50	mg/kg							
<b>LCS (B009364-BS1)</b>				Prepared & Analyzed: 06/27/11						
Diesel	233	5.0	mg/kg	227		103	65-135			
<b>LCS Dup (B009364-BSD1)</b>				Prepared & Analyzed: 06/27/11						
Diesel	231	5.0	mg/kg	227		102	65-135	0.9	30	
<b>Matrix Spike (B009364-MS1)</b>		<b>Source: 1062709-01</b>		Prepared & Analyzed: 06/27/11						
Diesel	768	5.0	mg/kg	219	539	104	65-135			



## Metals

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B009357 - EPA 3050B</b>										
<b>Blank (B009357-BLK1)</b>				Prepared: 06/27/11 Analyzed: 06/28/11						
Lead (Pb)	ND	3.0	mg/kg							
<b>LCS (B009357-BS1)</b>				Prepared: 06/27/11 Analyzed: 06/28/11						
Lead (Pb)	25.4	3.0	mg/kg	25.0		102	70-130			
<b>LCS Dup (B009357-BSD1)</b>				Prepared: 06/27/11 Analyzed: 06/28/11						
Lead (Pb)	25.8	3.0	mg/kg	25.0		103	70-130	2	20	



## Notes and Definitions

---

RDL	Reporting Detection Limit
ND	Analyte NOT DETECTED at or above the reporting detection limit (RDL)
RPD	Relative Percent Difference
NR	Not Reported



Analytical Sciences  
 P.O. Box 750336, Petaluma, CA 94975-0336  
 110 Liberty Street, Petaluma, CA 94952  
 (707) 769-3128  
 Fax (707) 769-8093

# CHAIN OF CUSTODY

## RUSH

LAB PROJECT NUMBER: 1062709

CLIENT'S PROJECT NAME: DWEN BRUCKMAN, DAKLANDS

CLIENT'S PROJECT NUMBER: Exc. D S.P. (6-27-11)

### CLIENT INFORMATION

COMPANY NAME: CKG ENVIRONMENTAL, Inc.  
 ADDRESS: P.O. Box 246  
SAINT HELENA, CA  
 CONTACT: CHRIS KENNEDY  
 PHONE#: 707-967-8080 FAX:  
 E-MAIL: CKENNEDY@GEOLOGIST.COM

SAADUST@GMAIL.COM

### TURNAROUND TIME (check one)

SAME DAY   
 24 HOURS   
 48 HOURS   
 72 HOURS

5 DAYS

NORMAL

GEOTRACKER EDF: Y   
 GLOBAL ID: \_\_\_\_\_

COOLER TEMPERATURE \_\_\_\_\_ °C

COC PAGE 1 OF 1

### ANALYSIS

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	TPH/GAS/BTEX & MTBE EPA 8021	TPH DIESEL MOTOR OIL EPA 8015M	VOLATILE HYDROCARBONS EPA 8260B (FULL LIST)	BTEX & OXYGENATES + PB SCAVENGERS EPA 8260B	OXYGENATED FUEL ADDITIVES EPA 8260B	CHLORINATED SOLVENTS EPA 8010 / EPA 8260B	SEM-VOLATILE HYDROCARBONS EPA 8270C	TRPH / TOG SM 5520 / EPA 1664A	PESTICIDES / PCB'S EPA 8081 / 8141/ 8082	CAM 17 METALS / 6 LUFT METALS	TOTAL LEAD	COMMENTS	LAB SAMPLE #
1	SPD(A+B+C+D)	6-27-11	1400	Soil	4	NO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										1062709	201
2	SPD(G+H+I)	6-27-11	1415	Soil	4	NO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										4:1	202
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			

### SIGNATURES

SAMPLED BY: \_\_\_\_\_

DATE: 6-27-11 TIME: 1545

RELINQUISHED BY: \_\_\_\_\_

SIGNATURE

RECEIVED BY LABORATORY: \_\_\_\_\_

SIGNATURE

DATE

TIME

## **APPENDIX B**

# PHOTOGRAPHIC LOG

## EXCAVATION D



**Figure 1 Northwest corner of Excavation D. The water line is supported by suspending it from an I-beam so that impacted soil beneath it could be removed**



**Figure 2 Looking east from the plant building at the electrical duct bank.**



**Figure 3 Placing ORC slurry into Excavation D**



**Figure 4 Clean soil placed and in the process of being compacted at Excavation D.**



## EXCAVATION B



**Figure 5** The trace of the active 12-inch gas line. Shoring was installed on both sides.



**Figure 6** Part of the wall of the brick bunker visible with tar at the bottom.



**Figure 7** The north side of Excavation B.



**Figure 8** Soil in Excavation B at a depth of 20 feet below grade. No groundwater is visible, but staining is strongly evident.





**Figure 9** Aerial view of Excavation B after ORC and drain rock had been placed.



**Figure 10** Paving in the Western UST Area, with new cullet bunkers on the right.

## **APPENDIX C**



# TESTING ENGINEERS, INC.

## INSPECTION REPORT

WORK REQ.#D1196

PROJECT #: 53593/6593

TYPE OF INSPECTION: Nuclear Density

PROJECT: NRC Environmental Services  
Underground Tank Soil Remediation  
3600 Alameda Ave., Oakland

PLACE OF INSPECTION: Jobsite

HOURS: 4

INSPECTOR: Ram

REPORTED TO: Scott

COMPANY: NRC Environmental

FEATURE: Trench backfill

FIELD TEST PROCEDURE: ASTM D2922 & D3017


LABORATORY TEST PROCEDURE: ASTM D1557

MATERIAL DESCRIPTION	MOISTURE %	MAX. DENSITY PCF	LABORATORY REF. NO.
1. Dark brown gravel	9.8	118.5	Client

FIELD TEST RESULTS						
LOCATION	ELEVATION	CURVE NO.	FIELD DENSITY PCF	FIELD MOISTURE %	RELATIVE COMP. %	PROJECT SPECIFIED %
1. Trench backfill - See Drawing	-4' FG	1	115.2	17.2	97	90

NOTE: Test results constitute the reporting of factual information derived from test(s) made by our laboratory following prescribed procedures. These test results should not be considered as an engineering opinion with respect thereto.

Reviewed by:

  
Terry C. Egland, C.E. #34132  
Operations Manager

Cc:

Corporate Office - 2811 Teagarden Street, San Leandro, California 94577 - (510) 835-3142 - FAX (510) 834-3777  
East/North Bay - 827 Arnold Drive, Bay 4, Martinez, California 94553 - (925) 370-7000 - FAX (925) 229-2951

\*\*\*

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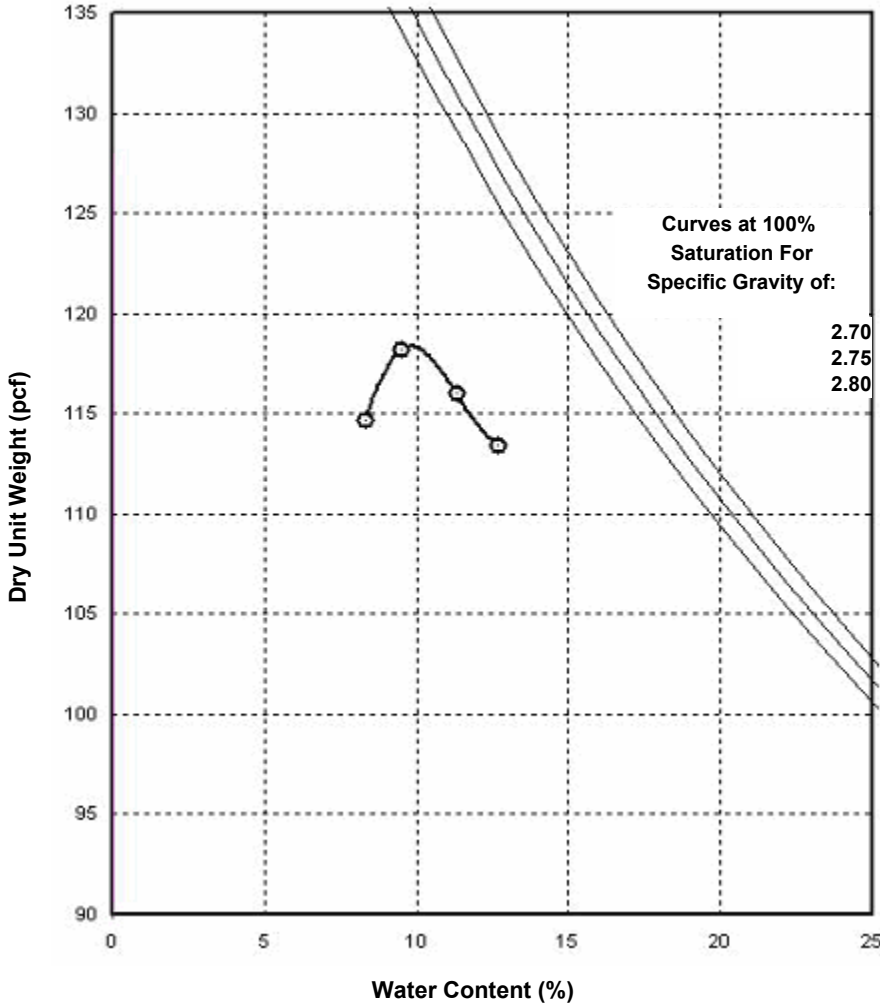
2601 Barrington Court  
 Hayward, CA 94545  
 Phone: (925) 484-1700 Fax: (925) 484-5838

**Laboratory Compaction Characteristics of Soil Corrected for Oversize Particles**

**Report To:**  
 Dirt Market  
 Robert Trujillo  
 37 South 4th Street  
 Campbell, CA 95008

**Report Date:** 4/21/2011  
**Project No.:** 111523  
**Project:** Dirt Market  
**Task:** MAT Materials Testing

**TEST RESULTS**



**Sample No.:** PLE\_3069  
**Date Sampled:** 4/15/2011  
**Sample Location:**

**Material Description:**  
 Dark Brown Aggregate Base

**Compaction Test Method:**  
 ASTM D 1557 Method C  
**Maximum Dry Unit Weight (pcf):** 113.2\*  
**Optimum Water Content (%):** 13.4\*  
 \*designates uncorrected test values

**Corrected Maximum Dry Unit Weight (pcf):**  
 118.5

**Corrected Optimum Water Content (%):**  
 9.8

**Material Separated on:**  
 3/4 in. (19.0 mm)  
**Percentage of Oversize Material:**  
 28.8

**Bulk Specific Gravity of Oversize Material:**  
 2.144

**Remarks:**

**Reviewed on 4/21/2011 by:** \_\_\_\_\_  
 Cindy Pimentel  
 Senior Technician

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet), if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

## **ATTACHMENT 2**



# Construction Closeout Report

**Underground Facilities  
Removal (UFR) Project  
June 2014**

**Owens-Brockway Glass  
Container Corporation  
3600 Alameda Ave  
Oakland, California**



**Submitted to:**

**CKG Environmental, Inc.  
July 14, 2014**



**Submitted by:**



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2. Pre-Construction Soil Profile Data Summary
3. Excavation C Summary of Primary Constituents in Soil and Groundwater
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2. UST Removal Permit
3. Daily Construction Observation Reports
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6. Excavation E Laboratory Report
7. Concrete Field/Laboratory Test Results and Concrete Batch Records
8. Geotechnical Field Test Reports
9. Photographs
10. Landfill Disposal Records



## **1.0 Introduction**

Sierra West Consultants, Inc. (Sierra West) is pleased to provide this construction closeout report to CKG Environmental, Inc. (CKG) for the Owens-Brockway Underground Facilities Removal (UFR) Project. This report provides a brief project description, identifies the project team, includes the UST removal permit, and outlines the project schedule. The construction activities are described in terms of field work at Excavation C (Ex C) and Excavation E (Ex E). Daily activity logs, test results, landfill disposal records, photos, final quantities, and as-built drawings are provided in the Appendices.

### **1.1 Project Description**

The project site is the Owens-Brockway Glass Container Corporation at 3600 Alameda Ave Oakland, CA. The facility operates 24 hours per day, although construction activities were limited to 7am to 7pm, in accordance to the City of Oakland's noise ordinances.

The project objectives were to remove an underground storage tank (UST) from Ex C and a buried brick bunker from Ex E. The excavations were conducted in accordance with the *Revised Corrective Action Plan-Targeted Excavations and Groundwater Treatment Trench*, dated January 17, 2014, and the *Project Documents for the Underground Facilities Removal Project*, dated May 2014.

The primary constituents of concern are total petroleum hydrocarbons (TPHs) in soil and shallow groundwater. The TPHs are primarily heavy-end hydrocarbons from aged fuel oils. The purpose of the project is to remove TPHs in the impacted soils to the extent practical, dewater the excavation of impacted groundwater as needed to maintain a safe and stable excavation, add oxygen releasing compound (ORC) to the excavations, backfill the excavations, and restore surface conditions.

### **1.2 Project Team**

Owens-Brockway Glass Container Corporation is the project Owner and CKG is the lead environmental consultant and project manager. Sierra West is the remediation design engineer and provided construction management support to CKG. National Response Corporation (NRC) provided construction services. Additional support services were provided by: Rockridge Geotechnical for compaction tests, Testing Engineers Inc. for concrete tests, McCampbell Analytical, Inc. for soil and groundwater testing, and Altamont Landfill for soil disposal. Contact information is included in Appendix 1.

### **1.3 Permits**

Prior to beginning excavation at Ex C, a UST removal permit from the Oakland Fire Department was obtained. A copy of the permit is included in Appendix 2.

### **1.4 Schedule**

Construction activities were to be completed by July 9<sup>th</sup> to allow annual plant maintenance activities to be conducted by the Owners. Pre-construction began June 3<sup>rd</sup>. Table 1 provides a summary of general milestone completion dates.

Table 1: Schedule of Milestone Project Activities

Milestone	Completion Date
Pre-Construction Investigation	May 20, 2014
Remove Shed at Ex C	June 3, 2014
Pothole at Ex C	June 16, 2014
Excavate Ex E	June 18, 2014
Excavate Ex C	June 24, 2014
Backfill Ex E	June 26, 2014
Backfill Ex C	June 25, 2014
Concrete Surface Restoration at Ex E	July 1, 2014
Concrete Surface Restoration at Ex C	July 1, 2014
Final Inspection	July 9, 2014

## 2. Scope of Work

Field activities for pre-construction data collection, and soil removal at Ex C and Ex E are described below. Analytical testing results and other field data are also presented. Daily construction reports are included in Appendix 3.

### 2.1 Pre-Construction Investigation

CKG collected soil samples from a single boring in Ex E to evaluate the levels of TPH impacts at various depths. This information was used by the project team and the landfills to determine the most cost-effective soil disposal alternative. Soil samples were collected at 4 feet, 7.5 feet, 12.5 feet, and 16 feet below ground surface. Table 2 provides the concentrations of the primary constituents found at these depths. BTEX, MTBE, semi-volatile organic compounds, and metals were not present at concentrations of concern. The laboratory report is included in Appendix 4.

Table 2: Pre-Construction Soil Profile Data Summary

Sample ID	Units	TPH(g)	TPH-Diesel	TPH-Motor Oil	TPH-Fuel Oil
BB-4	mg/Kg	5.8	89	140	180
BB-7.5	mg/Kg	61	450	570	740
BB-12.5	mg/Kg	610	2200	2400	3500
BB-16	mg/Kg	750	2400	2800	3800

The results indicated that the shallow excavated soil material could be used as cover material at the landfill and thereby have lower disposal fees. The deeper soils had to be disposed of in the Class II cells at a higher cost.

### 2.2 Excavation C

At Ex C, an existing shed was removed and the Hi-Vac unit was relocated. A small pothole was excavated and groundwater was found approximately four feet below ground surface. The UST was not found. No records of the UST removal can be found and it is understood that the UST must have been

removed sometime before 1985. The pothole was dewatered and temporarily backfilled. NRC identified sand backfill from the pothole that extended to the railroad tracks. Therefore, the railroad tracks and ties on the north side of Ex C were removed.

Shoring was provided along the east and west sides of the excavation. The excavated material contained sandy soils that appeared to be imported backfill material from a previous UST removal effort. Approximately 460 tons of material was removed and disposed of as cover material at the Altamont Landfill. Two samples of native soil and one groundwater sample were collected at 12 feet below grade, as shown on Figure 1. Table 3 summarizes concentrations of the primary constituents found in the soil samples. The laboratory report is included in Appendix 5.

Table 3: Excavation C Summary of Primary Constituents in Soil and Groundwater

Sample ID	Units	TPH(g)	TPH-Diesel	TPH-Motor Oil
EXC SS1	mg/Kg	6.5	1,400	1,500
EXC SS2	mg/Kg	ND	13	25
EXC GW1	µg/L	110	69,000	70,000

Approximately 495 pounds of ORC were spread across the bottom of the excavation and exposed groundwater. Using imported backfill material and drain rock, a construction ramp was built into Ex C to allow the compactor to enter the excavation. Backfill material was placed in lifts and compacted to 10 inches below grade and the shoring was removed. Soil compaction tests were taken at the backfill surface and 3 feet below; the results were 95% and 90%, respectively. Six inches of aggregate base was placed on top of the backfill material and the compaction test results were 97%.

A four-inch thick fiber-reinforced concrete slab was poured at Ex C. Approximately 25 cubic yards of concrete was poured. A slump test was performed for every truck of concrete poured at Ex C. Test results and batch records are shown in Appendix 7. A medium to heavy broom finish was provided, contraction joints were saw-cut, and a curing agent was sprayed over the concrete to help retain moisture.

### 2.3 Excavation E

NRC located the four corners of Ex E from previous records and the contract drawings. The concrete surface was jack-hammered and removed. Approximately 40 tons of concrete were taken to Argent Materials, Inc. in Oakland, California for recycling.

Imported soil backfill material was delivered to the site and stockpiled near Ex E. Rockridge Geotechnical collected a sample of the backfill material on June 16, generated a compaction curve, and determined the optimum moisture content to be 10%.

The water pipeline shown on the contract drawings was found approximately four feet below the surface. NRC and Sierra West worked with Owens-Brockway personnel to locate the valves and shut off water to the pipeline. The pipe was maintained in place during the excavation and the impacted material was successfully removed around the pipe. The pipe was removed during the backfill operation to allow proper compaction in the area.

The underground brick bunker was excavated and the impacted material was removed. The design excavation depth was 12 feet below grade. Upon reaching this depth, groundwater was present in relatively small volumes and there remained a substantial amount of impacted material. CKG and Owens-Brockway decided to excavate an additional four feet to remove as much impacted material as

practical. Approximately 81 tons and 1460 tons were disposed of as cover and direct fill respectively at the Altamont Landfill. The additional excavation extended further into the groundwater and allowed for effective use of the ORC application.

Two soil samples (SS) and one groundwater (GW) sample were collected from the bottom of the excavation, as shown on Figure 2. Table 4 summarizes the primary constituents found in the samples. The laboratory report is included in Appendix 6.

Table 4: Excavation E Summary of Primary Constituents in Soil and Groundwater

Sample ID	Units	TPH(g)	TPH-Diesel	TPH-Motor Oil
EXE SS1	mg/Kg	750	11,000	12,000
EXE SS2	mg/Kg	1200	7500	6800
EXE GW1	µg/L	1000	540,000	670,000

Approximately 2,035 pounds of ORC were placed across the bottom of the excavation using the backhoe, and two feet of drain rock was placed in the excavation and compacted with the backhoe. Backfill material was compacted in 18 inch lifts. For safety reasons, the geotechnical engineer was not permitted to enter the excavation until backfill material was brought up to five feet below grade. Prior to testing, Rockridge Geotechnical observed compaction from the top of the excavation. On several occasions the engineer noticed soft pockets behind the tires of the compactor, as evidenced by pumping. When pumping increased, approximately 8 to 12 inches of backfill material was scraped from the top of the lift, allowed to aerate, and then re-compacted.

At approximately five feet below grade, Rockridge Geotechnical conducted soil compaction tests. The results showed 91% compaction and 15% moisture content, which were unsatisfactory compared to the required 95% compaction and 10% optimum moisture content. Rockridge Geotechnical advised that the backfill stockpile be mixed and aerated to help dry out the soil. Additional compaction tests were performed and NRC placed additional lifts. The results did not meet the 95% compaction or 10% moisture content requirements. Rockridge Geotechnical advised removing the placed backfill to five feet below grade, allowing the material to dry out and re-compacting in lifts again. NRC chose to import aggregate base material in lieu of the backfill material. Final compaction test results of the aggregate base material were 95% compaction. A report from Rockridge Geotechnical with additional details regarding compaction results is provided in Appendix 8.

Aggregate material was placed to within eight inches below grade. A trench was excavated at the location of the removed water pipeline. Approximately 12 inches of drain rock bedding material was placed in the trench and the pipe was re-connected with a sleeve coupling. A hydro test was performed to confirm that there were no leaks. Drain rock was placed around the pipe and approximately 1 to 2 feet above the pipe, and aggregate base material was placed and compacted to fill the trench. The trenched area backfill compaction was tested and had passing results of 95% and 96%.

Dowel holes were drilled 9 inches into the existing concrete and ASTM Grade 60 #8 rebar dowels were placed in each hole. Eight inches of fiber-reinforced concrete was placed over the excavated area. Approximately 25 cubic yards of concrete was poured. A slump test was performed for each truck of concrete poured at Ex E. Slump test results and batch records are shown in Appendix 6. A medium to heavy broom finish was provided, contraction joints were saw-cut, and a curing agent was applied to help retain moisture.

### **3. Final Inspection**

On July 9, 2014 a final inspection of the construction site took place. CKG, Sierra West, NRC, and Owens-Brockway representatives were present. The inspection was successful and both excavation areas were accepted. The only remaining work item is to replace the Hi-Vac unit that was relocated at the beginning of the project. NRC will work directly with CKG and Owens-Brockway to re-install the Hi-Vac system at the Ex C area.

### **4. Daily Recordkeeping and Reporting**

Sierra West kept a daily reports of construction activities at the site. Information provided in these reports includes the site's weather conditions during the day, the personnel and visitors on site, main equipment used, as well as description of construction activities. The daily reports are provided in Appendix 3. Relevant pictures of construction activities are provided in Appendix 9. Landfill disposal summaries are provided in Appendix 10.

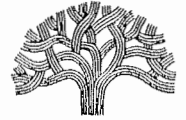
## **Appendix 1: Project Team Contacts List**

1. William (Bill) L. Boscacci  
Owens-Brockway  
O: (510) 436-2166  
M: (510) 774-6423
  
2. Christina Kennedy  
CKG Environmental, Inc.  
O: (707) 967-8080  
M: (707) 363-5740
  
3. Jeffrey C. Bensch, P.E.  
Sierra West Consultants, Inc.  
O: (916) 863-3220  
M: (916) 207-5706
  
4. Scott Norgren  
NRC  
O: (775) 473-3183  
M: (925) 787-6001
  
5. Katie Dickinson  
Rockridge Geotechnical  
O: (510) 420-5738  
M: (510) 504-4183
  
6. Terry England  
Testing Engineers, Inc.  
O: (510) 835-3142  
M: (510) 406-1517
  
7. Sheryl S. Skillern  
Oakland Fire Department  
O: (510) 238-7253  
M: (510) 755-5163
  
8. Robert Pringle (Lab Courier)  
McC Campbell Analytical, Inc.  
M: (925) 768-6061

Appendix 2  
UST Removal Permit



Oakland Fire Department, Fire Prevention Bureau  
 250 Frank H. Ogawa Plaza, Ste. 3341  
 Oakland, CA 94612-2032



(510) 238-3851  
 TTY (510) 238-6884

## Inspection Work Order

Business Name:	OWENS-BROCKWAY GLASS CONTAINER INC.	Reason:	Tanks
Address:	3600 ALAMEDA AVE	Scheduled:	2014-05-23 1:30PM
Job (Insp Ref#):	2014-28529	Assigned To:	Skillern, Sheryl

Comments: 5/23/14 - UST Removal Application received via fedex w/ck#3216 for \$1458.00, Jeffrey C. Bensch, P.E. w/Sierra West Consultants, Inc., Cell: 916-207-5706/ofc: 916-863-3220. hro

Invoice #	2014-01441	Applicant:	Jeffrey Bensch, P.E.
Invoice Amount	1,458.00	Applicant Ph#:	916-863-3220
		Contractor:	Sierra West Consultants, Inc.
		Contractor Ph#:	916-863-3220
Contact Name			Jeffrey C. Bensch, P.E
Field Contact #			916-863-3220
Inspection Service			Remove/Demolish

REVIEWED AND APPROVED  
 OAKLAND FIRE DEPARTMENT  
 BY: Sheryl Skillern  
 TITLE: SENIOR HAZMAT Insp  
 DATE: 5/27/14  
 ALL INSPECTIONS REQUIRE  
 48 HOURS NOTICE







May 21, 2014

Ms. Sheryl Skillern  
Oakland Fire Department  
Hazardous Materials Management Program  
250 Frank H. Ogawa Plaza, #3341  
Oakland, CA 94612

REVIEWED AND APPROVED  
OAKLAND FIRE DEPARTMENT  
BY: *Sheryl Skillern*  
TITLE: *SENIOR HAZ MAT INSP*  
DATE: *5/27/14*  
ALL INSPECTIONS REQUIRE  
48 HOURS NOTICE

**Subject: Work Plan for Underground Storage Tank Removal  
Owens-Brockway Glass Container Corporation  
3600 Alameda Avenue, Oakland, California 94601**

Dear Ms. Skillern:

On behalf of Owens-Brockway Glass Container Corporation (Owners) and CKG Environmental, Inc., Sierra West Consultants, Inc. (Sierra West) is pleased to provide this work plan as partial fulfillment of the Oakland Fire Department's (OFD) Underground Storage Tank (UST) removal permit application package (Attachment A).

This work plan outlines the requirements to remove one UST located at the Owens-Brockway glass container manufacturing facility at 3600 Alameda Avenue in Oakland, California. The UST is being removed as partial fulfillment of the January 17, 2014 *Revised Corrective Action Plan* approved by the Alameda County Environmental Health Department (ACEHD) in their letter, dated March 10, 2014, included as Attachment B.

**1.0 CURRENT UST STATUS**

The UST was used to store fuel oils, possibly diesel fuel or Bunker C fuel oil. The tank age is uncertain, although it is understood to be a 10,000 gallon tank, approximately 37 feet long and 84-inches in diameter. The glass manufacturing facility was constructed in the 1930's and is still an active facility. The tank was installed in 1937. The property boundary and approximate tank location are shown on Figure 1. The detailed tank location is shown on Figure 2 with respect to nearby buildings and other facilities.

**2.0 PROJECT PLANNING**

Project planning includes preparing a health and safety plan, preparing for erosion control measures, locating buried utilities and obtaining necessary permits.

Health and Safety Plan

The Health and Safety Plan for environmental work at the property is included as Attachment C (CKG Environmental, Inc., 2014). The health and safety plan has been prepared in general accordance with requirements set forth in Title 29 of the Code of Federal Regulations, Part 1910.120 (29CFR1910.120) and Title 8 of the Code of California Regulations, Section 5192 (8CCR5192). Additionally, each subcontractor that may come into contact with impacted soils or groundwater will be required to prepare their own task specific health and safety plans.



<b>REVIEWED AND APPROVED</b>
<b>OAKLAND FIRE DEPARTMENT</b>
BY: <u>Sheryl Skillern</u>
TITLE: <u>Service HAZ mat Insr</u>
DATE: <u>5/27/14</u>
<b>ALL INSPECTIONS REQUIRE</b>
<b>48 HOURS NOTICE</b>

Erosion Control

The work area is relatively flat and paved with asphalt. The extent of disturbed area will be minimized. The maximum open excavation area is expected to be less than 1,000 square feet. As such, erosion is expected to be minimal. In addition, excavation activities are likely to occur during the dry season (June 2014). Nonetheless, measures will be taken to limit erosion from disturbed areas and stockpiles.

The facility maintains an active storm water control system. Any runoff or groundwater from the excavation area will be controlled and routed to the onsite treatment facilities.

Permits and Buried Utilities

The Bay Area Air Quality Management District (BAAQMD) will be notified of the planned tank removal activities. An Underground Storage Tank System Closure Permit Application (Attachment A) will be submitted to the City of Oakland Office of the Fire Marshall. Tank removal activities will begin following receipt of the tank closure permit.

An independent buried utility locating service (Cruz Brothers) performed site surveys to identify buried utilities as part of the design process. Underground Service Alert (USA) was also notified, although their work does not include private property. Independent locates will be conducted again prior to beginning the excavation activities.

**3.0 TANK REMOVAL**

Sierra West will obtain the required tank removal permit from the OFD before proceeding with the work. Sierra West will also notify the Bay Area Air Quality Management District (BAAQMD). The work will be conducted in accordance with BAAQMD Regulation 8 Organic Compounds, Rule 40 Aeration of Contaminated Soil and Removal of Underground Storage Tanks (Attachment D).

Two fire extinguishers with a minimum rating of 20 BC will be maintained within 50 feet of work operations. A NO SMOKING sign will be posted at the Site. No welding or other ignition sources will be present during tank removal.

The tank will be inspected to verify that no liquids are present. If present, liquids and sludge will be removed to the greatest extent possible with a system pump and hand pump. The tank will be triple-rinsed. All liquids removed from the tank including rinsate are considered hazardous waste and will be handled and disposed of appropriately. After triple rinsing, the tank will be temporarily purged of flammable vapors with solid carbon dioxide (dry ice) at a ratio of 10 pounds of dry ice per 1,000 gallons of tank volume. Dry ice will be deposited in appropriate tank openings at least 1.5 hours prior to tank removal to insure sufficient purging and venting. Only dry ice will be used to purge vapors.

A photoionization detector (PID) will be used to evaluate the tank vapors. If hydrocarbon concentrations are greater than 5,000 ppm expressed as methane, then the Oakland Fire Department will be notified before continuing. The contaminated vapors shall be removed by vapor freeing or ventilation methods in accordance with BAAQMD regulations prior to excavation activities until hydrocarbon concentrations are less than 5,000 ppm expressed as methane, or as otherwise instructed by the Oakland Fire Department.

Immediately prior to tank removal, the lower explosive limit (LEL) and oxygen levels (O2) inside the tank will be measured with a metering device designed and calibrated to accurately assess those indicators. The tank will be made inert or be degassed to either of the following standards:



**REVIEWED AND APPROVED**  
**OAKLAND FIRE DEPARTMENT**  
BY: *[Signature]*  
TITLE: *SEWAGE HAZ MATERS*  
DATE: *5/27/14*  
**ALL INSPECTIONS REQUIRE**  
**48 HOURS NOTICE**  
~~exceed 10% of the PEL of the hazardous~~

- A. The concentration of flammable vapor will not exceed 10% of the PEL of the hazardous material, or
- B. The oxygen concentration will not exceed 5%.

A PID will be used to monitor the work area and the excavated soil for the presence of hydrocarbons. If impacted soils are encountered as determined by the PID readings, then the BAAQMD will be notified and appropriate procedures will be followed to ensure compliance Regulation 8, Rule 40.

Excavated soil will be stockpiled on impervious material directly adjacent to or in the immediate vicinity of the tank excavation. The soils will be securely covered with a material impervious to inclement weather.

Depth to groundwater is expected to be ten to 12 feet below ground surface. As such, dewatering of the excavation is expected. Any groundwater removed from the excavations will be routed to the onsite wastewater treatment facility.

The excavations will be conducted in accordance with California Division of Occupational Safety and Health (Cal/OSHA) requirements. Shoring is expected. Entrance into the excavations is not expected, although if necessary, confined space permitting will be required.

**4.0 SAMPLING AND ANALYSIS PLAN**

Soil samples will be collected from the excavations to evaluate whether chemical impacts are present in the subsurface. A minimum of two soil samples will be obtained from directly beneath the bottom of the tank, one at each end of each tank. Additional samples may be collected if substantial over excavation is conducted beneath the tank.

Soil samples from the UST excavation will be brought to the surface using a backhoe or excavator and will be collected by field personnel from the backhoe or excavator bucket. Soil samples will be collected by driving a pre-cleaned, brass or stainless-steel sample liner into the soil until full. Following sample collection, the ends of the liner will be covered with Teflon® sheets, capped with polyethylene lids, and then sealed with duct tape.

If groundwater is present in the UST excavation, a sample will be collected for laboratory analysis. The grab groundwater sample will be collected using a disposable bailer or a dipper/sampler on an extension pole. Water samples will be placed in sample containers appropriate to the required analyses.

Once collected, the soil and groundwater samples will be labeled and immediately placed in an ice-cooled, insulated chest. A chain-of-custody record will be completed for the samples and will accompany the samples until receipt by the laboratory.

The soil sample(s) and groundwater sample (if collected) will be submitted to a California-certified laboratory to be analyzed for total petroleum hydrocarbons as gasoline, diesel and motor oil by EPA Method 8015; a full scan target list VOCs, benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, methyl-tert butyl ether (MTBE), and lead scavengers (ethylene dibromide and 1,2-dichloroethane) by EPA Method 8260B, total lead by EPA Method 6010, 5 Metals (Cd, Cr, Pb, Ni, Zn) by EPA Method 6010B, 16 Priority Pollutants, including PAHs and creosote by EPA Method 8270, and PCBs using EPA Method 8082.



**5.0 CONTINGENCY FOR ADDITIONAL EXCAVATION**

If impacted soil is encountered in the tank excavation, additional excavations may be conducted, with approval from the Owners and OFD, to efficiently address residual contamination. In such case, BAAQMD would be notified and appropriate procedures would be followed to ensure compliance with BAAQMD Regulation 8/Rule 40.

**6.0 PROFILING AND DISPOSAL**

The emptied tank will be rendered non-reusable while on-site. The removed underground storage tank is considered hazardous waste and will be transported and disposed of accordingly. The tank will be transported under hazardous waste manifest to a state-permitted TSDF facility.

Soil samples have been recently collected for pre-profiling the proposed excavated materials and the laboratory results are pending. Samples are being analyzed using the methods listed in Section 4.0, and additional methods as needed to meet the profile requirements of either Vasco Road or Altamont disposal facilities. If the analytical results indicate that the tank contents and/or excavated soil are non-hazardous, then these materials will be transported to the selected landfill facility. A non-hazardous manifest or weight ticket from the receiving facility will be used to document the disposal. However, if the analytical results indicate that the tank contents and/or excavated soil are hazardous, then these materials will be transported under uniform hazardous waste manifest to an approved landfill or treatment facility.

**7.0 EXCAVATION BACKFILL**


The tank excavation will be backfilled and compacted using clean imported backfill consisting of aggregate base or crushed rock. With OFD approval, excavated tank overburden material may be re-used for backfill if laboratory results are available and indicate that all analyzed constituents in the material are below applicable clean-up standards. The surface pavement will be restored with a 4-inch layer of hot asphalt installed in two 2-inch lifts.

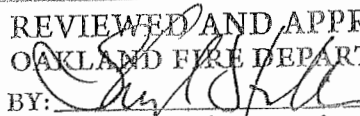
**8.0 REPORTING**

A tank closure report will be prepared documenting tank removal activities, conditions observed at the Site, and the soil and groundwater sampling methods and results. The report will include a written overview of procedures and activities, figures and tables as necessary for clarity of presentation, copies of chain-of-custody records and laboratory analysis reports, and copies of permits. Documentation of proper disposal activities will be also be provided in the report.

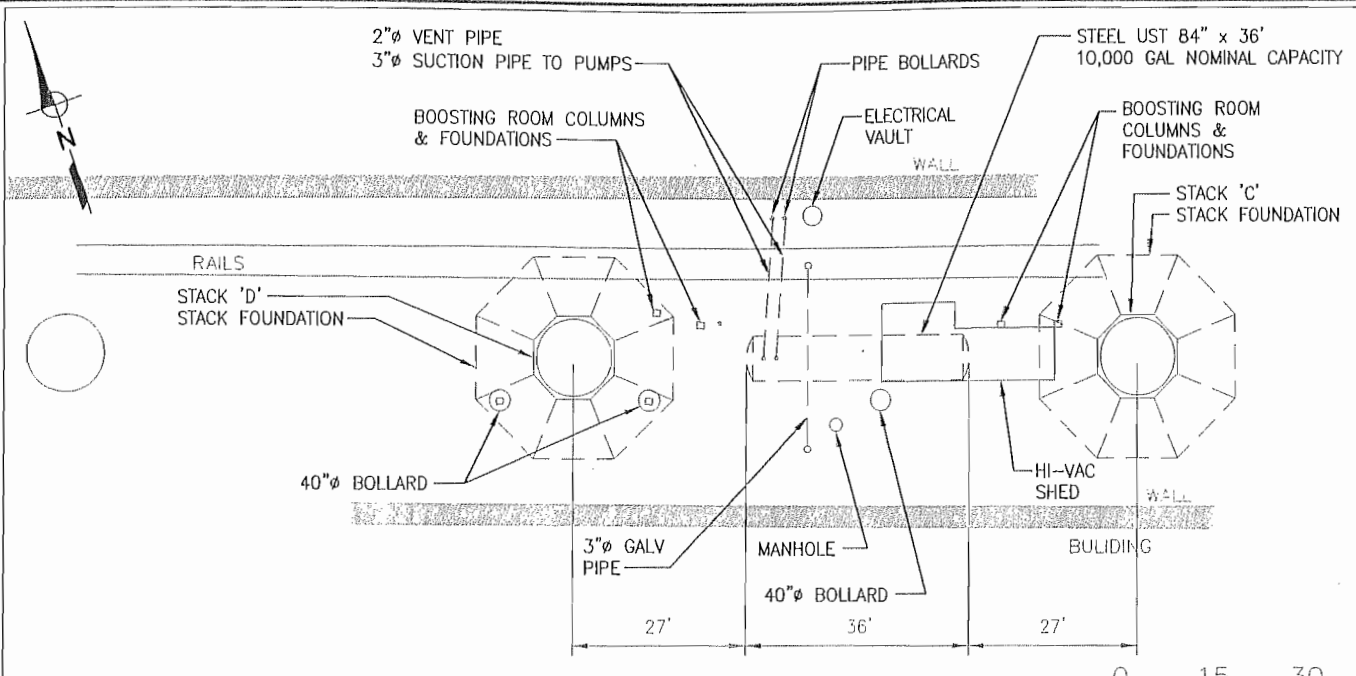
Sierra West appreciates the Oakland Fire Department's assistance with this project. If you have any questions, please contact Jeff Bensch at 916-863-3220.

Sincerely,  
Sierra West Consultants, Inc.

  
Jeffrey C. Bensch, P.E.  
Principal Engineer

REVIEWED AND APPROVED  
OAKLAND FIRE DEPARTMENT  
BY:   
TITLE: SENIOR HAZMAT INSP  
DATE: 5/27/14  
ALL INSPECTIONS REQUIRE  
48 HOURS NOTICE

Cc: Bill Boscacci, Owens-Brockway Glass Container Corporation  
Chris Kennedy, CKG Environmental, Inc.



**EXCAVATION C**

SCALE 1"=30'

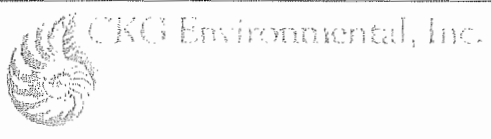


**EXCAVATION C REQUIREMENTS**

1. REMOVE EQUIPMENT INSIDE THE HI-VAC SHED AND RELOCATE AT STORAGE LOCATION ON THE PLANT PREMISES AS DIRECTED BY OWNER.
2. REMOVE HI-VAC SHED. TRANSPORT OFF SITE, RECYCLE OR OTHERWISE DISPOSE OF ALL MATERIALS.
3. CLEAR SURFACE AREA OF BOLLARDS, RAILROAD TRACKS, AND APPURTENANT PIPING TO THE TANK THAT INTERFERE WITH EXCAVATION REQUIREMENTS.
4. PROTECT FOUNDATIONS, SUPPORT STRUCTURES, BUILDINGS, MANHOLES, VAULTS, AND OTHER PERMANENT FACILITIES SHOWN ON THE DRAWINGS OR VISIBLE IN THE FIELD.
5. EXCAVATE SOIL MATERIALS TO EXPOSE TOP OF UNDERGROUND STORAGE TANK. REMOVE, TRANSPORT, AND DISPOSE OF MATERIALS AT LICENSED AND PERMITTED LANDFILL FACILITY.
6. REMOVE RESIDUAL LIQUIDS FROM INSIDE THE TANK. ANTICIPATE 4,000 GALLONS OF WEATHERED, AGED, DIESEL FUEL, OR BUNKER C FUEL OIL. CONTAIN, TRANSPORT, DISPOSE OF OR RECYCLE RECOVERED RESIDUAL LIQUIDS.
7. TRIPLE RINSE AND DEGAS UNDERGROUND STORAGE TANK. CONTAIN, TRANSPORT, AND DISPOSE OF ALL WASTEWATERS.
8. REMOVE TANK, TRANSPORT, AND RECYCLE AT APPROPRIATELY LICENSED STEEL RECYCLING FACILITY.
9. EXCAVATE SURROUNDING SOILS TO A DEPTH OF 12 FEET BELOW EXISTING GRADE. PROVIDE SHORING AND DEWATERING TO MAINTAIN A SAFE AND STABLE EXCAVATION. DEPTH TO GROUNDWATER IS APPROXIMATELY 12 FEET.
10. LOAD, TRANSPORT, AND DISPOSE OF EXCAVATED SOILS AT LICENSED AND PERMITTED LANDFILL FACILITY.
11. APPLY OXYGEN RELEASE COMPOUND TO THE BOTTOM OF THE EXCAVATION.
12. PLACE 2 FEET OF ROCK BEDDING MATERIAL
13. PLACE AND COMPACT IMPORTED FILL MATERIAL TO 8 INCHES BELOW FINISHED GRADE
14. PLACE AND COMPACT 8 INCHES OF CLASS 2 AGGREGATE BASE
15. RESTORE SURFACE CONDITIONS TO MATCH EXISTING.

**REVIEWED AND APPROVED**  
**OAKLAND FIRE DEPARTMENT**  
 BY: *[Signature]*  
 TITLE: *Senior Haz Mat Ins*  
 DATE: *5/27/14*  
**ALL INSPECTIONS REQUIRE 48 HOURS NOTICE**

C:\WORK\SIERRA WEST\14 OWENS-BROCKWAY\Owens-Brockway.dwg 5-20-14 05:59:42 PM Mary



**EXCAVATION C-PLAN**  
  
 OWENS-BROCKWAY  
 GLASS CONTAINER, INC.  
 3600 ALAMEDA AVE  
 OAKLAND, CALIFORNIA

**FIGURE**  
  
 2

Date:

CITY OF OAKLAND  
FIRE PREVENTION BUREAU  
250 Frank Ogawa Plaza, Suite 3341  
Oakland, California 94612-2032  
(510) 238-3851

REVIEWED AND APPROVED  
OAKLAND FIRE DEPARTMENT  
BY: [Signature]  
TITLE: SEWER AIR MATTERS  
REPAIR TANKS 5/27/14  
ALL INSPECTIONS REQUIRE  
48 HOURS NOTICE

APPLICATION for PERMIT to INSTALL, REMOVE or REPAIR  
In the CITY OF OAKLAND

Request Submittal Date: May 21, 2014

PLEASE CIRCLE APPROPRIATE ACTIONS: Application is hereby made for permit to:

(a) Remove (b) Install (c) Repair (d) Modify (e) Abandon/Close in Place A

(a) Gasoline (b) Fuel oil (c) Diesel (d) \_\_\_\_\_ tank(s) and excavate, commencing:

(a) four feet inside the curb line\* (b) inside the property line; (c) aboveground; (d) underground tank(s)  
\*inside curb line, please attach copy of sidewalk/excavation permit from PLANNING AND BUILDING

on the east side of Alameda St. 450 feet south of Fruitvale St.

Site Address: 3600 Alameda Avenue Present storage Residual Fuel Oil

Owner: Owens-Brockway Glass Container Corp. Address 3600 Alameda Avenue Phone 510-436-2000

Applicant: Sierra West Consultants, Inc. Address 4227 Sunrise Blvd., #220, Phone 916-863-3220  
Fair Oaks, CA 95628

Sidewalk surface to be disturbed NA X Number of Tanks 1 Capacity 10,000 Gallons ea.

Remarks Work is being performed pursuant to a Corrective Action Plan, dated 1/17/2014, approved by Alameda County Environmental Health Department.

Signature [Signature]

PLEASE ATTACH/SUBMIT: (All applicants must have a City Business License Permit)

- (2) Copies of Closure Plans for underground tank removal (s)
- (2) Sets of plans and (1) copy of specifications for above ground tank removal
- (2) Sets of plans and (2) sets of application packets for underground tank installation/modifications
- (2) Sets of plans for aboveground tank installation and specifications
- copy or prepare to show Planning and Building approval for aboveground tank removal and tank repair

NOTE: FOR TANK INSTALLATION PLEASE SUBMIT THIS APPLICATION FORM ALONG WITH A APPLICATION FOR PERMIT TO OPERATE, MAINTAIN OR STORE

FOR OFFICE USE ONLY

Permit No. \_\_\_\_\_ Amt. Recv'd \_\_\_\_\_ Date Issued: \_\_\_\_\_

Copies to: Electrical Inspection ck# \_\_\_\_\_ Cash \_\_\_\_\_

Receipt# \_\_\_\_\_ Recv'd by: \_\_\_\_\_

**FACILITY INFORMATION**

Owens-Brockway  
Facility/Residence Name Glass Container Corp. Business Type Manufacturing  
Site Address 3600 Alameda Avenue City Oakland Zip 94601  
Contact Person Bill Boscacci Title Env. Manager Phone 510-436-2166  
E-Mail bill.boscacci@o-i.com Cell Phone 510-774-6423  
Owner, Agency, or Corporation Name Owens-Brockway Corporation Phone 510-436-2000  
Mailing Address 3600 Alameda Avenue City Oakland State CA Zip 94601  
EPA ID Number CAT000618918  
Note: Include "Proof of Financial Responsibility"

**CONTRACTOR REMOVING TANK(S) AND PIPING:**

Contractor Sierra West Consultants, Inc.  
Contract Person Jeffrey Bensch Phone 916-863-3220  
Business Address 4227 Sunrise Blvd., Suite 220 City Fair Oaks, CA Zip 95628  
State Contractors License 863096  
Note: Attach a copy of Contractors License, Hazardous Materials Certification, and Workers Compensation

**HAZARDOUS WASTE HAULERS:**

Hazardous Waste Hauler, Tank(s) NRC EPA ID # CAR 000030114  
Business Address 1605 Ferry Point City Alameda, CA  
Contact Scott Norgren Phone 925-787-6001  
Tank(s) and piping destination Schnitzer Steel, 1101 Embarcadero West, Oakland, CA 94607  
Hazardous Waste Hauler (Rinsate) NRC EPA ID # CAR 000030114  
Business address 1605 Ferry Point City Alameda, CA  
Contact Scott Norgren Phone 925-787-6001  
Note: Include Hauler License No. 201800 License Exp. Date 3/31/2015

**SAMPLE COLLECTION AND ANALYSIS:**

Sample Collector Chris Kennedy, or representative Company CKG Environmental, Inc.  
Address P.O. Box 246 City St. Helena, CA 94575 Phone 707-363-5740  
Soil/Water Analysis Laboratory McC Campbell Analytical  
State certification No. 12283CA Contact Angela Rydelius Phone 877-252-9262  
Business Address 1534 Willow Pass Road City Pittsburg, CA Zip 94565

**TANK(S) INFORMATION**

TANK SYSTEM: SIZE (GALLONS)	TANK CONSTRUCTION	SUBSTANCE(S) PREVIOUSLY CONTAINED
TANK 1 <u>10,000</u>	<u>Steel</u>	<u>Fuel Oil</u>
TANK 2 _____	_____	_____
TANK 3 _____	_____	_____
TANK 4 _____	_____	_____

REVIEWED AND APPROVED  
OAKLAND FIRE DEPARTMENT  
BY: Shylis Mc  
TITLE: SEMI-ANNUAL HAZARDOUS WASTE  
DATE: 5/27/14  
ALL INSPECTIONS REQUIRE  
48 HOURS NOTICE

REVIEWED AND APPROVED  
OAKLAND FIRE DEPARTMENT  
BY: *[Signature]*  
TITLE: *Service Haz Mat Insp*  
DATE: *5/27/14*  
48 HOURS NOTICE

**“PROCEDURES TO CLOSE UNDERGROUND STORAGE TANK(S) SYSTEMS”**

- 1) Submit to the City of Oakland Office of the Fire Marshal (OFM) three (3) completed **Underground Storage Tank System Closure Permit Application**. Prepare State Water Resources Control Board Facility and Tank Pages. These Forms are available from the OFM or you may download the forms by logging on to [www.unidocs.org](http://www.unidocs.org).
  - Include a complete **Tank Page** for each tank to be closed.
  - Include a complete **Facility Page** (if) tank to be closed is home heating oil, or non-regulated.
  - One complete copy of your approved plan must be at the construction site at all the times.
  - Any cutting into tanks requires OFM approval.
  
- 2) Include with the submitted application a check payable to the City of Oakland for the amount of the designated fee, workmen’s compensation insurance verification, and plot plan drawing. The drawing consists of a scaled view of the facility which shows the tank(s) location and the following information:
  - Scale
  - North Arrow
  - Property Line
  - Location of structures near the tank(s)
  - Location of relevant existing equipment (including the tank(s) to be removed), associated piping, and fuel dispensers
  - Area Roadways
  - Underground conduits, sewers water lines utilities
  - Existing wells; drinking, monitoring, etc.
  - Depth of ground water
  
- 3) The OFM must be notified a minimum of 48 hours, two (2) days prior to commencement of work in order to schedule a removal inspection. The removal inspection appointment **must be confirmed with the district inspector**. A representative of the OFM must be present at the time of removal.
  
- 4) A site specific Health and Safety Plan must be submitted for review and available at the job site. Underground Service Alert must be contacted at 800-642-2444 prior to the start of any excavation.
  
- 5) A Tank Closure Report must be submitted within 30 days of removal/closure operations completed, containing a general description of the closure activities indicating:
  - Description of tank, fittings and piping conditions. Size and former contents; notes any corrosion, pitting, holes. If any leak(s) are suspected from any tank an unauthorized Leak/Contamination Report form must be included.
  - Description of the excavation itself. Include tank and excavation depth, a log of the stratigraphic units encountered within the excavation, a description of root holes or other potential pathways the depth to any observed ground water,



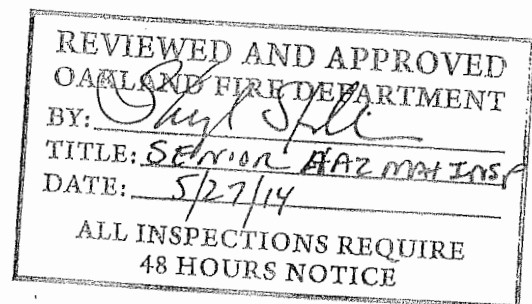
locations of stained or odor-bearing oil, and descriptions of any observed free product or sheen.

- Detailed description of sampling methods, i.e. – backhoe bucket, drive sampler, bailer, bottles, sleeves.
- Description of any remedial measures conducted at the time of removal.
- To-scale figures showing the excavation size and depth, nearby buildings, sample locations and depth, and tank and piping locations include a copy of the plot prepared for the Tank System Closure Plan Permit Application under item # 2).
- Chain of custody records.
- Copies of signed laboratory reports.
- Copies of TSDf to Generator manifests for all hazardous wastes hauled offsite (sludge, rinsate, tanks and piping, contaminated soil, etc.).
- Documentation of the disposal of/and volume and final destination all non-manifested contaminated soil disposed offsite.

The Closure Report and conclusions are subject to critical review; and the report must be approved by the OFM to be recognized as valid.

6) An additional hourly fee will be charged for inspection time exceeding four (4) hours.

The listed items are general closure requirements, modifications may be necessary in certain situations. A deficient application or incomplete information will only cause a delay in the permit process, if you have any questions or need assistance call the OFM at (510) 238-3927. The Underground Storage Tank System Closure Permit expires 365 days from the approval date. If the tanks have not been closed/removed within 365 days, a new closure permit application and fees are required. The closure/removal activities must be scheduled 48 hours in advance.



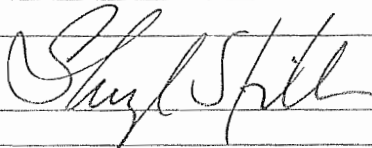
**Applicant Declaration:**

I certify the application information is correct and factual. I declare that I have read and will follow the "procedures to Close Underground Storage tank(s) Systems." I further agree to comply with all applicable City of Oakland Ordinances; Fire Code; Health and Safety Code Chapter 6.7; Title 23, California Code of Regulations.

Applicant Jeffrey Bensch  
Print

Applicant  Date 5/20/2014  
Signature

"This box for OFM use only"

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Inspectors Signature  Approval Date 5/27/14

HEALTH AND SAFETY PLAN  
TARGETED EXCAVATIONS

OWENS-BROCKWAY GLASS CONTAINER FACILITY  
3600 ALAMEDA AVENUE  
OAKLAND, CALIFORNIA

REVIEWED AND APPROVED  
OAKLAND FIRE DEPARTMENT  
BY: Stan Still  
TITLE: SENIOR HAZ MAT Insp  
DATE: 5/27/14  
ALL INSPECTIONS REQUIRE  
48 HOURS NOTICE



CKG Environmental, Inc.

P.O. Box 246  
St. Helena, CA 94574

Appendix 3  
Daily Construction Observation Reports

# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 06/16/14

Contractor: NRC

Page: 1 of 3

Day: Mon, Jun 16<sup>th</sup> Weather: Fair Temp: 70° Conditions: slightly windy

On-Site Observer: Yousuf Kaleem

Arrival: 8:45 AM

Departure: 4:00 PM

Visitors:


Work Force: Personnel, Company

Comments

<u>Mike McClish</u>	
<u>Scott</u>	
<u>1 Laborer</u>	
<u>Bill</u>	
<u>Katie, Ridgeport Geotech</u>	

Equipment:

<u>CAT Excavator 330 B</u>	
<u>CAT 420 "D-Series"</u>	

Activities

<u>Looked @ Ex. C @ 9:20 AM</u>	
<u>- Cut through pothole, water found @ +/- 4'</u>	
<u>- Dewatering started @ 8:30 AM, Dropped 2'-3' by 8:45 (real easy to dewater)</u>	
<u>- Backfill material is on sight (slightly moist/clayey.)</u>	
<u>- Aggregate base fill brought @ around 9:30 AM</u>	
<u>- Ex E: 27' X 56' 8" +/- <del>slab</del> concrete slab w/ fiber reinforcements</u>	
<u>- Dug 3' +/- hole @ corner of Ex E → Exposed soil heavily contaminated w/oil (flowing liquid)</u>	
<u>- Fiber backfill as well</u>	
<u>@ 10:30 AM, water @ Ex C is slightly less. Water level does not recharge fast.</u>	



**SIERRA WEST**  
CONSULTANTS INC

**FIELD OBSERVATIONS**



Project: Underground Facilities Removal Project	Date: 06/06/14	(M)	T	W	T	F	S	S
Client: CKE Environmental Inc.	Location: Oakland, CA							
Observer: Yousuf Kaleem	Weather: Fair, 70°, Slightly Windy							
Description:								
@ 10:40 AM backfilling of pothole @ Ex. C began								
@ 10:50 AM backfilling 50% complete								
Discussed that backfilling was done to support larger excavation/drilling equipment.								
Note:								
Water from Ex C collected in bucket prior to backfilling. Bucket water will be used as last resort sample if necessary.								
@ 10:45, base material stockpiled @ site. (Near Ex. E)								
@ 10:50 more drainage rock arrives								
@ 11:15 almost done backfilling @ Ex. C								
Jeff wanted to discuss excavation details for site E w/ Scott. Scott wasn't on site, so left for lunch. @ 11:30								
@ 12:45 Returned from lunch								
Mike								
Began further digging @ Ex E to check <del>at</del> for oil. Dug 6' trench								
Oil found within 3' of surface.								
No brick from bunker visible yet								
Water pipe line going through Ex. E. Bill says we can turn off valves.								
- Pipeline approx 40' long								
@ 1:50 pm observed Excavation @ Ex. C								
@ 2:10 began shutting valves for line going through Ex. E								
@ 2:15 <del>was</del> opened fire hydrant to see if water was shutt off.								
Test failed!								

See Reverse  
↳

**FIELD OBSERVATIONS**



Project:	Date:	M	T	W	T	F	S	S
Client:	Location:							
Observer:	Weather:							

Description:

@ 2:15 met w/geotech eng. Katie from Ridgeport Geotech  
 Backfill stockpile material was checked.  
 Katie recommended 1'-2' lifts (18") during compaction process  
 Equipment recommendation: Sheep roller on backhoe

@ 2:30 tried to find Additional Valves to turn off.

@ 3 found another valve and began closing

@ 3:10 went to check Ex C dimensions  
 Could not get accurate measurement due to excavation  
 still taking place.

@ 3:30 2<sup>nd</sup> Fire hydrant test passed. Water is shutoff.  
 -Tomorrow pipe running through Ex. E will be cut.

Notes: Excavation of Ex E scheduled to start @ 7 AM  
 -Shoring will not occur. Instead, slope to bottom surface  
 -Slope is 3' wide from edges.  
 -First 4' of material will be excavated and mixed with dry material  
 -Direct load and haul away, No stockpiling of excavated material

# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/17/14

Contractor: NRC

Page: 1 of 3

Day: Tue June 17<sup>th</sup> Weather: Fair Temp: 75° Conditions: Slightly Windy

On-Site Observer: YOUSUF Kabeem Arrival: 7:30 AM Departure: 4:20 PM

Visitors:

<u>Rob (from testing lab)</u>

Work Force: Personnel, Company Comments

Personnel, Company	Comments
<u>Bill</u>	
<u>Scott</u>	
<u>Mike</u>	
<u>Labores</u>	
<u>Chris</u>	

Equipment:

<u>CAT 320B Excavator</u>
<u>Forklift</u>
<u>CAT 420B - D series</u>
<u>Bobcat Sweeper</u>

Activities

<p style="text-align: right; margin: 0;"><u>Moist soil</u></p> <p><u>Water pipeline is <del>actually not</del> <del>at</del> pipeline. <del>It</del> is dripping from pipeline</u>  <span style="margin-left: 150px;"><u>partially exposed</u></span></p>
<p><u>Banker can be slightly seen</u> <u>Excavation E started @ around 7 AM</u>  <u>2 pallets of ORE on site</u> <u>46 55 lb containers</u>  <u>11 trucks have already left</u> <u>20 Tons a truck approx.</u></p>
<p><u>Plan is to dig to 14' but include <del>several</del> 16 ft holes to allow groundwater to cover bed.</u></p>
<p><u>12 @ 8:08 1 truck arrives @ 8:11 leaves</u></p>
<p><u>13 @ 8:20 1 truck arrives @ 8:26 leaves</u></p>





# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

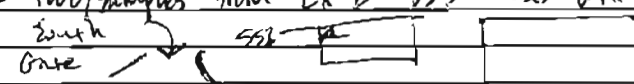
Date: 6/17/14

Contractor: NRC

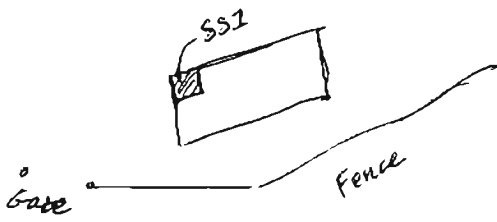
Page: 2 of 3

On-Site Observer: Yousuf Kuleem

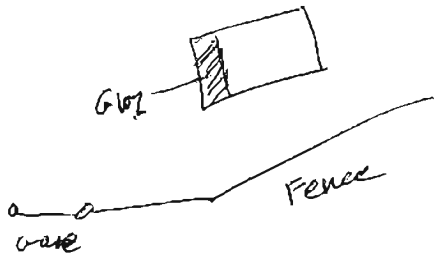
## Activities

	@ 8:15	observed <del>excavation</del> drilling @ Ex C
		- Spoke w/ laborer and double-checked width of Ex C
		- want 11"
		- measured and confirmed width
14	@ 8:37	1 truck Arrives leaves @ 8:46 This was 1 <sup>st</sup> truck to leave
	@ 8:46	measured bunker, bottom of bunker about 7 1/2' deep
	@	about 12'-15' slight amount of water and unknown liquid starts flowing from side of excavation - Very slow but steady flow
15	@ 9 AM	truck arrives leaves @ 9:06
16	@ 9:06	truck arrives " @ 9:10
17	@ 9:08	truck arrives " @ 9:15
18	@ 9:15	" " " @ 9:18
19	@ 9:13	" " " @ 9:22
20	@ 9:30	" " " @ 9:35
21	@ 10:06	" " " @ 10:10
	@ 9:50	took two <sup>soil</sup> samples from Ex E <sup>SS1</sup> Lab will comp pick up by 2 PM
		
	@ 10:41	observed Ex C progress
		- Eddie is clearing concrete rubble and stockpiling next to glass bunkers
	@ 11:20 AM	took water samples from Ex E
		- Used trailer to capture GW (Ex E GW2)

Ex E SS1 Location



Ex F GW1 Location



# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/17/14

Contractor: NRC

Page: 3 of 3

On-Site Observer: Yousaf Kaleem

## Activities

77 Touches left by 11:45 AM
<del>28</del> 29 green, 30 white, 31 white, 32 Red.
Lunch @ 12:05 PM
Returned from lunch @ 1:05 PM
(C) 1:08 observed Ex C
- Finishing drilling through concrete (edging out excavation site)
(C) 1:35 gave samples to Rob
- Will come tomorrow for 2 <sup>nd</sup> SS and Ex C GWI
(C) 2:10 Excavation E about 75% complete
↑
<del>Portions</del> Portions of Ex E has caved in @ sides. Will clear out fallen soil tomorrow
@ 3:35 sheepsfoot rollers brought to site
Notes: Bucket should be ready for Rob tomorrow
Will take Ex E SS2 and Ex C GWI
Will ask Scott for receipts
W/C and backfill set for tomorrow
@ 3:50 site cleaning began. Sweeping around Ex E
46
Total loads for the day: <del>4</del> Hauled and dumped
3 <del>1</del> preloads
<u>42</u>



# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/18/14

Contractor: NRC

Page: 1 of 3

Day: Wed Jun 18<sup>th</sup> Weather: ~~70°~~ Fair Temp: ~~70°~~ 80-90° Conditions: Sunny, Hot

On-Site Observer: Younis Kabeem Arrival: 7:00 AM Departure: 1:15 PM

Visitors:

<u>Sheryl</u>
<u>Katie</u>
<u>Peter</u>

Work Force: Personnel, Company Comments

<u>Scott</u>		
<u>Mike</u>		
<u>Eddie</u>		
<u>Katie</u>	<u>Ridgeport Geotech</u>	
<u>Sheryl</u>	<u>Fire Department Inspector</u>	
<u>Peter</u>	<u>Ridgeport Geotech</u>	

Equipment:

<u>CAT Excavator 330B</u>
<u>CAT 420 D "D series"</u>
<u>CAT Sheeproller</u>

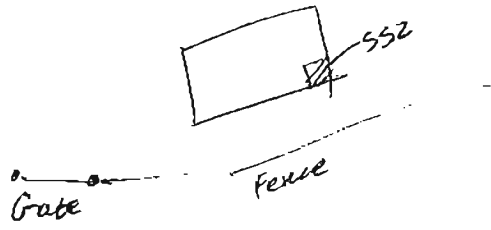
Activities

<u>Continuing to excavate EX E and haul out in trucks (no stock piling)</u>
<u>- Overnight a decent amount of soil collapsed from sides</u>
<u>(@ 7:15) Observed EX C. Drilling through concrete still</u>
<u>(@ 7:25) Katie from Ridgeport Geotech arrived</u>
<u>- thinks soil backfill might be too wet need about 10% moisture</u>
<u>- aeration might be required</u>
<u>- Katie left site after 15/20 min since backfill didn't start yet</u>
<u>(@ 8:30) Observed EX C</u>
<u>- clearing out concrete rubble</u>
<u>(@ 9:00 AM) took EX E 552</u>
<u>(@ 9:42) Began pouring ORC into bucket</u>
<u>      Truck tally</u>



6/18/14

Ex E SS2 Location



# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/19/14

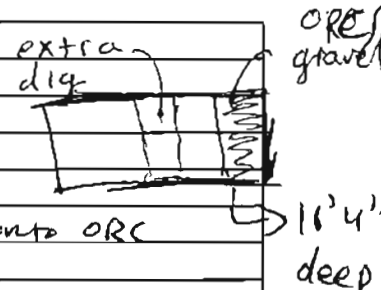
Contractor: NRC

Page: 2 of 3

On-Site Observer: \_\_\_\_\_

## Activities

- (1) 10:00 met with Fire Rep  
- showed her EX E & EX C
- (2) 10:00 began pouring ORC at one side of pit 50%  
- poured gravel for that side as well  
so dirt from sides would not collapse onto ORC
- (3) 10:15 began digging middle of EX E to expose more water  
- lots of soil caving from sides
- (4) 10:18 spoke with Rob. He will come soon to collect EX E SS2  
- will possibly collect ~~EX E~~ EX C GW2 later during day
- (5) 10:50 began pouring second round of ORC into backhoe
- (6) 11:00 poured ORC through rest of pit
- (7) 11:05 began backfilling with gravel
- (8) 11:25 additional truck of gravel arrives
- (9) 11:45 loaded and hauled concrete rubble stockpile near  
Excavation C
- (10) 11:50 Observed site C  
- NO Activity  
- Concrete surface completely removed
- LUNCH from 11:55 - 12:55 PM
- (11) 1:05 Drain Pan Unloaded ~~to~~ near EX C and concrete rubble  
Loaded and hauled
- (12) 1:00 Paved from Ridge Pitt
- (13) 1:10 Gave EX E SS2 to Rob
- Note: Did NOT give EX C GW1 sample to Rob today, will  
wait until excavation starts



# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/18/14

Contractor: NRC

Page: 3 of 3

On-Site Observer: \_\_\_\_\_

## Activities

Peter said soil is too wet, will need to be aerated.

@ 1:20 aeration begins

- ~~spreading~~ spreading soil backfill on top of gravel bed to aerate in heat

Gravel Placement @ Ex E is complete

- completed with backhoe and gravel bed seem well compressed

Moving remaining gravel to Ex C

@ 2:10 Katie returned to observe soil Placement @ Ex E

Mike is building a ramp to use sheeproller

@ 3:25 Mike dismantles dirt ramp, sheeproller is in Ex E pit

@ 3:40 Mike begins compacting

Dumps Today: 23 loads

No receipts yet, Scott needs to make copies



# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/19/14

Contractor: NRC

Page: 1 of 4

Day: ~~Wed~~ Thu, June 19<sup>th</sup> Weather: Warm

Temp: 75°

Conditions: \_\_\_\_\_

On-Site Observer: Yousuf Kabeem

Arrival: 6:15 AM

Departure: 3:10

Visitors:


Work Force:	Personnel, Company	Comments
Rob	NRC McClish	
Mike	<del>NRC</del> McClish	
Scott	NRC	
Eddie	NRC	
Katie	Ridgeport Greench	

Equipment:

CAT Excavator 330 B
CAT 420 D
CAT Sheepsoller

Activities

@ 6:15 AM Nobody on site
@ 7:00 AM only Eddie from NRC is on site
@ 7:15 AM spoke w/ Mike about cutting the pipe. Will make a small slump and pump excess water
@ 7:30 began setting up piping for <del>pump</del> dewatering.
@ 7:37 began dewatering corner where GW rose through gravel
@ 7:57 most of the water from corner is gone.
@ 8:05 wrapped chain around pipe and tied it to backhoe on excavator
@ 8:09 began sawing pipe
@ 8:10 small stream of water starts flowing out of cut in pipe - Note: Pipe is not completely sawed off yet





# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/19/2014

Contractor: NRC

Page: 2 of 4

On-Site Observer: \_\_\_\_\_

## Activities

~~@ 8:15~~ @ 8:20 Katie arrived

@ 8:45 about 15% of pipe cut through

@ 8:52 pipe is cut through and completely removed  
- only needed to saw one end. Other end was pulled out  
by using the chain and backhoe  
- not much water came out from other end

@ 8:55 began scooping out wet dirt and gravel from  
muddy area underneath pipe.

@ 9 began placing gravel to replace wetted area  
- compacted w/ backhoe

Note: wet dirt that was scooped out is being moved to another  
location on site and then will be hauled off.

@ 9:15 began pouring soil over gravel and compacting

Lift thickness is 18 in moisture content look good to Katie

First lift done @ 9:50

@ 10:25 poured more gravel ~~near~~ under saved off pipe area.

@ 10:30 second lift complete.

@ 11 AM on fourth lift

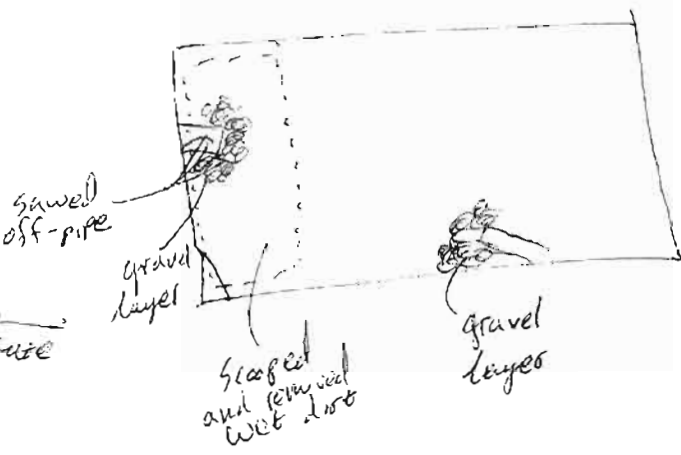
Note: heights are being measured and confirmed between lifts



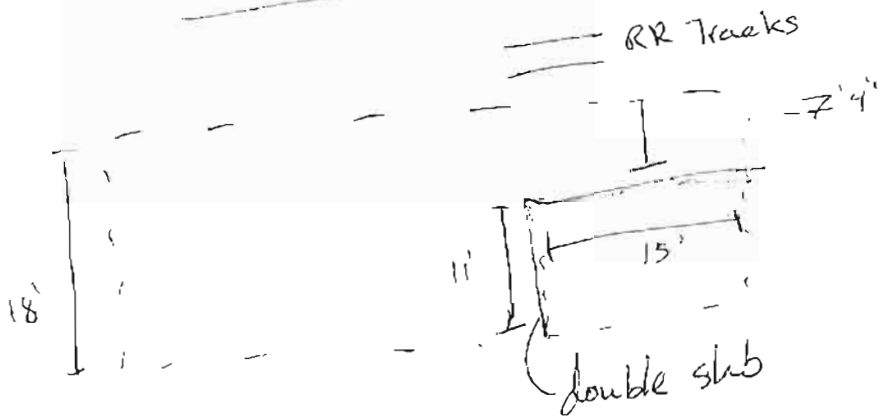


5/19/14

Ex B Plan View



Ex C Plan View





Project: UFR Project	Date: 6/19/14	M	T	W	<b>T</b>	F	S	S
Client: CKC	Location:							
Observer: Younsuf Kabeem	Weather:							

Description:

@ 10:50 walked over with Scott and Eddie to mark off railroad removal.

Railroad ties extend about ~~30~~<sup>18</sup> inches from rail (see below)



Scott told Eddie to lookout for footing foundations and electrical housing underground.



Only drill ~~enough to~~ far enough to remove ties.

67'-70' of rail is being removed.

Katie left around 11:20 am

Lunch @ 11:25 - 12:25 PM

@ 12:45 measured approx dimensions for double slab @ Ex C (~~see~~ ~~figure~~)  
Note: Eddie said top layer of concrete had rebar and bottom layer did not

Double layers are present due to pre-existing foundation for the structure that was removed

Eddie is drilling ~~through~~ next to rails in order to remove them. A few metal bolts that are securing the rails to the ground have been exposed.

@ 1:20 Observed Backfill @ Ex E. Slight pumping occurring near middle. Drain rock layer from bottom of pit is being built all the way to the top. ~~Drain rock~~ This layer is only near the sawed pipe. (See Figure

# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container

Engineer: Sierra West Consultants, Inc.

CKG Environmental, Inc.

Date: 6/19/17

Contractor: NRC

Page: 4 of 4

On-Site Observer: Younis Kabeem

## Activities

The drain rock is placed underneath the pipe to prevent the soil from getting wet overnight

Scott left for the day had a meeting to attend

@ 2:00 talked w/ Mike backfill will most likely not be completed today. Scott wants to ~~leave about~~ stop backfilling about 4-5' from the top so that he can drill holes for dowels.

Aggregare base will not come until later tomorrow or maybe over weekend, will need to confirm with Scott.

@ 2:06 backfill @ Ex E is about 9' from top.

@ 2:15 PM <sup>pumping</sup> ~~backfill~~ is getting slightly more evident near middle of Ex E. sides are completely fine

@ 2:30 began scraping up middle portion w/ backhoe with the hopes that it will aerate overnight.

Mike has not been able to compact directly underneath longer pipe (the one that Brit saved off) so he plans to place gravel underneath it, ~~and~~ Once gravel goes over the pipe, he will place backfill soil and compact. (See Figure)

@ 2:50 observed Ex C. Eddie is sawing off railroad bolts

@ 2:55 Mike pushed some backfill soil up against a side of Ex E to prevent further outfall of soil ~~during the night~~ overnight



# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/20/14

Contractor: NRC

Page: 1 of 2

Day: Fri, June 20<sup>th</sup> Weather: Sunny Temp: 65°-90° Conditions: \_\_\_\_\_

On-Site Observer: Yousuf Kabeer Arrival: 7:27 Departure: 2:35

Visitors:

<u>Adam</u>	

Work Force:	Personnel, Company	Comments
<u>Bob, Mike</u>		
<u>Scott, Eddie</u>		
<u>Adam</u>	<u>Rockridge Geotech</u>	

Equipment:

<u>CAT Excavator 330 B</u>
<u>CAT 4200</u>
<u>CAT Sheeproller</u>

Activities

<u>The scraped soil @ the bottom of Ex E that was left overnight is pretty dry. Good sign!</u>
<u>Adam from Rockridge is here to observe compaction relay</u>
<u>ⓐ 7:30 Aerated stockpile of soil backfill</u>
<u>ⓐ 7:50 Observed removal of RR tracks @ C</u>
<u>↳ Mike is using excavator to rip out tracks rails</u>
<u>ⓐ 8:08 broke up rails. Eddie will now clear debris</u>
<u>ⓐ 8:15 Sprinkled gravel <del>over</del> along middle of Ex E to help prevent pumping</u>
<u>ⓐ 8:20 Compaction started</u>



SIERRA WEST  
CONSULTANTS INC

Project: UFR Project	Date:	M	T	W	T	F	S	S
Client: CKG	Location:							
Observer: Youssuf Kuleem	Weather:							

Description:

@ C Eddie is moving rails out of the way and to an open area near Ex E.

@ 9:20 about 7 ft from top

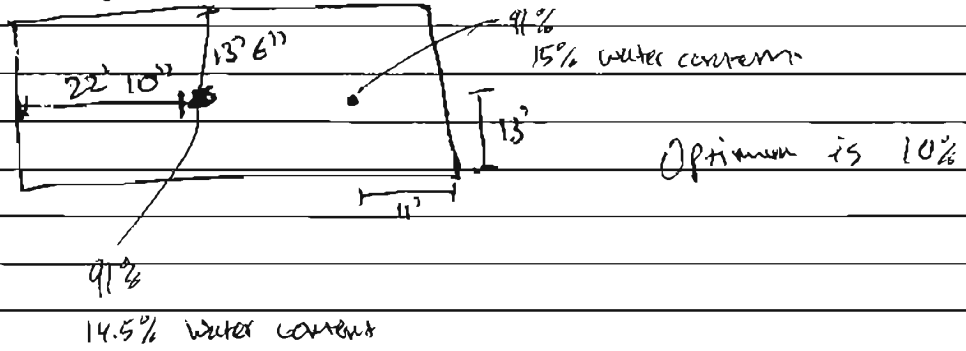
@ 9:55 observed Ex C. Measured exposed concrete: 6" slab

@ 10:08 about 6' 8" from top

Eddie is clearing rubble from C and stockpiling @ E

@ 10:40 light to moderate pumping near middle has started again

@ 10:48 preparing to test compaction



Lunch: 11:30 - 12:15 PM

Chris came by to take a look at site. ~~Activity~~ Will be aerating stockpile as well as scraping surface from Ex E.

Stockpile is currently being aerated  
 about 20 8' wooden posts excavated from railroads @ Ex C,  
 Ex E is being aerated  
 Ex C is mostly cleaned up of debris

# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/23/14

Contractor: NRC

Page: 1 of 2

Day: Mon

Weather: Cloudy

Temp: 60°-70°

Conditions: \_\_\_\_\_

On-Site Observer: Yousuf Kalaem

Arrival: 6:40 AM

Departure: 4:30 PM

Visitors:

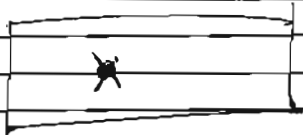
Katie

Work Force: Personnel, Company	Comments
2 Leaders	
Scott	
Mike	
Jeff	

Equipment:

Vibratory Shaker head (for Shoring)
EXCAVATOR CAT 330 B
CAT 420 D

Activities

Began compacting again @ E
Measured out and outlined pit excavation dimensions @ C
89%, 14% water content tested one location @ 9:50 AM
<div style="text-align: center;">  </div>
Katie and Jeff suggested that Mike make a few more rips and then test again.
@ 10:30 AM got 91% and 89% and 14% and 17% water content
Going to let it dry out meanwhile going to dig @ E & C





# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/23/14

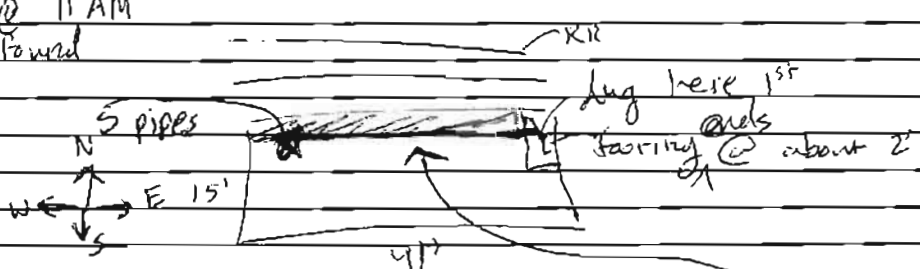
Contractor: NRC

Page: 2 of 2

On-Site Observer: Yousuf Kabeer

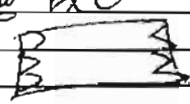
## Activities

measuring out 41' x 15' @ Ex C @ 10:55 PM  
started digging @ 11 AM  
dig to 4' and found footing



Natural clay layer starts @ about 2' along edge of pit  
Hit five pipes near NW corner of pit.

@ 1:50 PM started shoring @ Ex C  
- 2 sides shored



Shoring sheets are about 3'-4' wide and 15'-16' long

@ 3:10 Finished driving in shoring  
Dig a little bit out from Ex C (about 6'-9')

@ 3:45 Mike ran over the backfill @ Ex E a little bit more (→ runs)

@ 3:50 Added another lift and began merating stockpile

Note: Ex C Dimensions: 41' x 15'



# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/24/14

Contractor: NRC

Page: 1 of 3

Day: Tue Weather: Sunny Temp: 60°-70° Conditions: \_\_\_\_\_

On-Site Observer: Younif Kaleem Arrival: 6:40 AM Departure: 6 PM

Visitors:

<u>Katie</u>

Work Force:	Personnel, Company	Comments
	<u>3 laborers</u>	
	<u>Scott</u>	
	<u>Mike</u>	
	<u>Eddie</u>	

Equipment:

<u>CAT 314C Excavator</u>
<u>CAT 330B Excavator</u>
<u>CAT 420 D</u>
<u>Sheeproller</u>

Activities

<u>@ 6:45 held meeting and discussed plans for the day</u>
<u><del>Notes</del></u>
<u>@ 7 AM moved excavators over to Ex C to load trucks.</u>
<u>@ 7:05 began loading first truck</u>
<u>@ 7:10 began dewatering @ C and began digging also</u>
<u>@ 7:15 Mike dug a small pit to help with dewatering @ C</u>
<u>@ 7:20 gave Katie a call she will be here in about 30 min</u>



**SIERRA WEST**  
CONSULTANTS, INC.

# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container

CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/24/14

Contractor: NRC

Page: 2 of 3

On-Site Observer: Yongut Kakeen

## Activities

Katie tested backfill left from yesterday in 2 locations  
- Got 93% / 13% and 90% / 15% so they will add half a lift  
and she will come back in an hour and test again.

~~Note:~~

@ 9:35 AM Ex E is about 5' from top.

@ 9:05 took EX C 55Z

@ 9:40 Katie came to test again

91% / 12%

87% / 14%

@ 9:45 used vibratory to compact existing lift. (Note: now @ -3')  
Did not improve conditions.

~~Eddie~~

@ 10:00 AM held meeting with Scott, Chris, and Katie

will remove -2" from Ex E and Scott will bring in ~~Base~~ <sup>Base</sup> ~~about~~ <sup>about</sup>

material by today/tomorrow Eddie started drilling holes

Katie will test material after compaction @ E.

@ 11 AM took EX C GWZ samples

@ 12:10 Lunch

Tire on 420D ~~was~~ deflated, so it is being repaired.  
- New tire brought in.

Moving stockpile @ E to the edge of Owens-Brockway property  
(near fence)

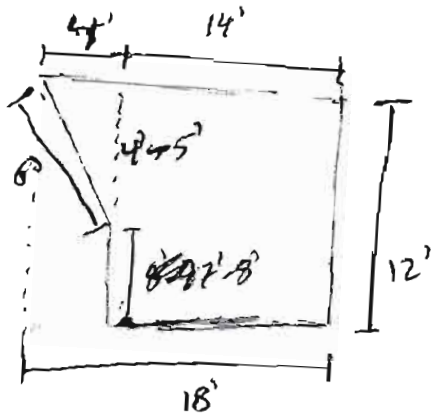
Observed C @ 1:10 PM. Currently clearing path for trucks -

loading truck to haul off (Note: there have been more

@ 1:45 measured and confirmed base hole } then 3 trucks) will confirm  
drill spacing @ E } w/Scott



# Cross Section of Excavation @ C



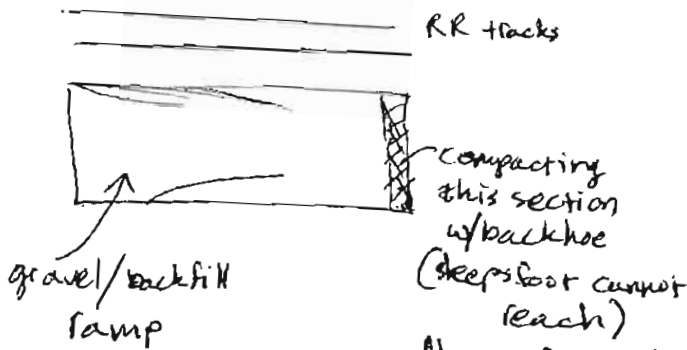
$$4^2 + x^2 = 36$$

$$x^2 = 20$$

$$x = 4.5'$$

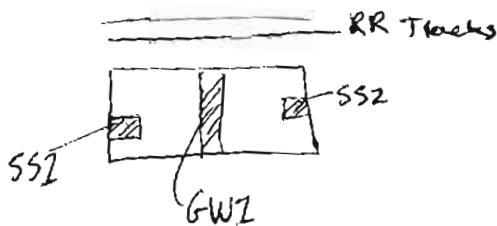
39' long

## Plan View of ExC



Note: Once the backfill was 3'-4' from top, the sheepsfoot was able to compact this area.

## Ex C SS1, SS2, and GWI Locations



# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container

Engineer: Sierra West Consultants, Inc.

CKG Environmental, Inc.

Date: 6/27/14

Contractor: NRC

Page: 3 of 3

On-Site Observer: Yousuf Kabeem

## Activities

ⓐ 1:50 took Ex C 551

ⓐ 2:20 poured remainder of ORE @ Ex C

ⓐ 2:35 gave samples to Rob

ⓐ 2:45 began pouring gravel in C

Drilling the clouds is going ~~fast~~ quite slow. Will bring more powerful equipment and/or more manpower tomorrow hopefully.

ⓐ Some of the crews base material has come in.

ⓐ 3:30 observed Ex C

- Ground has been placed

- ~~Using~~ ~~backfill~~ ~~@ E~~, ~~back~~ A ramp is being built into the pit @ C

ⓐ 4 pm, shoring on one side was removed

length of C is 39' See figure for cross section dimensions

Removed all metal pipe near top of Ex C → BR tracks

Compacting with vibratory

Ramp is built out of gravel and fill is being placed in lifts.



~~Note~~ NOTES: 9 trucks hauled out excavated material from C (verified by Scott)



# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/25/14

Contractor: NRC

Page: 1 of 2

Day: Wed

Weather: Mild

Temp: 55-60°

Conditions: Cloudy, Windy

On-Site Observer: Yousuf Kabeem

Arrival: 6:50 AM

Departure: 2:45 PM

Visitors:

<u>Katie</u>
<u>Chris</u>

Work Force: Personnel, Company Comments

Personnel, Company	Comments
<u>Sect</u>	
<u>Mire</u>	
<u>Eddie</u>	
<u>3 Laborers</u>	

Equipment:

<u>Two Drills (for daniel holes), Sweepshot roller</u>
<u>CAT 314C</u>
<u>CAT 330B</u>
<u>CAT 420D</u>

Activities

<u>@ 6:55 AM truck w/ base material arrives.</u>
<u>Katie arrived @ 7:15 AM</u>
<u>- Test Results: @ surface: 95%/14%</u>
<u>@ 3' below grade: 90%/15%</u>
<u>@ 8:00 AM Removing sloring from other end @ C</u>
<u>drill</u>
<u>Eddie and 1 laborer are continuing to plug holes @ E.</u>
<u>Chris was on site. She was OK w/ results for Ex C. She said Owens will most probably not build much on top of the site &amp; she is more concerned with making the area safe and free for trucks to pass.</u>



**SIERRA WEST**  
CONSULTANTS, INC.

# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/25/14

Contractor: NRC

Page: 2 of 2

On-Site Observer: Younis Kabeem

## Activities

All shoring @ C is removed

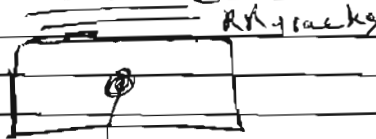
@ 10 AM Eddie and Hubert are still drilling

@ 10:45 took measurements of cleared area @ C ~~is~~ 43' x 25'

NOTE: The dimensions ARE NOT excavated area dimensions. Just cleared area including area where RR tracks were removed.

Scott made copy of my dimensions from yesterday for E & C

@ 11:15 began compacting road base @ C



this area about 2' below grade (before base was added)

@ 11:40-12:40 lunch

Drilling still continuing @ E

@ 12:55 Almost done placing road base @ C

Mike is moving backfill stockpile @ E to edge of property

Took a few measurements of completed holes @ E. 12"-14" ✓

@ 1:35 base for compaction finished @ C

9 trucks hauled out excavated material from C today.





# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/26/14

Contractor: NRC

Page: 1 of 4

Day: Thu

Weather: mild

Temp: 55-65°

Conditions: Cloudy

On-Site Observer: Younis Kalkan

Arrival: 7:15 AM

Departure: 5:30 PM

Visitors:

<u>Katie</u>	

Work Force:

Personnel, Company

Comments

<u>Scott</u>	
<u>Mike</u>	
<u>Eddie</u>	
<u>3 laborers</u>	

Equipment:

<u>CAT 314C</u>	
<u>CAT 330B</u>	
<u>CAT 420D</u>	
<u>Sheepsfoot Roller</u>	

Activities

<u>Ex E has been dug back down to .5' below grade</u>	<u>Removed about 3'-4' of old backfill.</u>
<u>- 1<sup>st</sup> lift is being placed. Lifts about 10"-12" thick</u>	
<u>- Some of the old backfill has been left to provide a decent height for the dewater hole drilling. It will be removed later</u>	
<u>- called Katie for testing she will be here around 8:15/8:30</u>	
<u>Tires are being changed on CAT 420D</u>	<u>? Fixed by 7:50 AM</u>
<u>Oil is being changed</u>	
<u>@ 8:45 AM Katie arrived</u>	



**SIERRA WEST  
CONSULTANTS, INC.**

# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container

Engineer: Sierra West Consultants, Inc.

CKG Environmental, Inc.

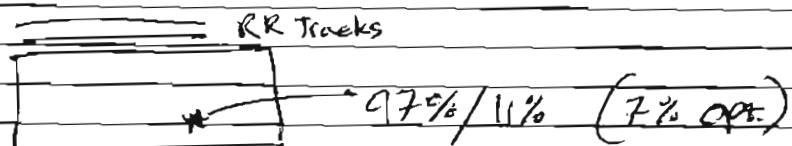
Date: 1/26/14

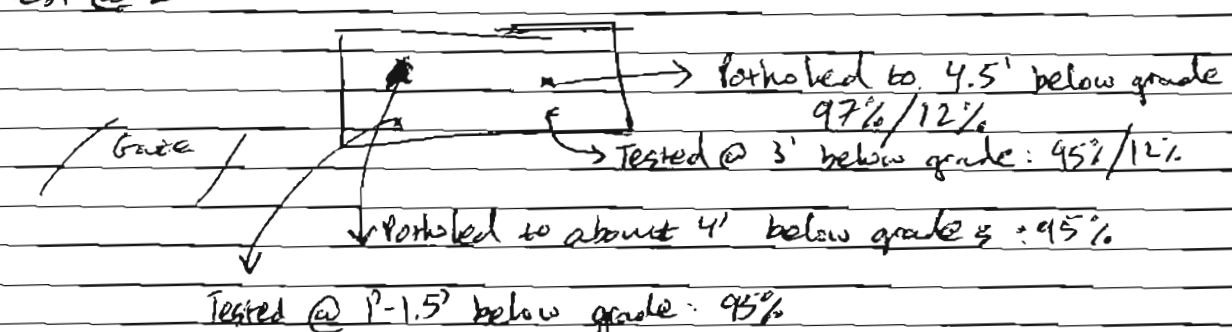
Contractor: NRC

Page: 2 of 9

On-Site Observer: Yousuf Kaleem

## Activities

Test @ C:  RR Tracks  
97% / 11% (7% opt.)

Test @ E  Potholed to 4.5' below grade  
97% / 12%  
Tested @ 3' below grade: 95% / 12%  
Potholed to about 4' below grade: 95%  
Tested @ 1.5' below grade: 95%

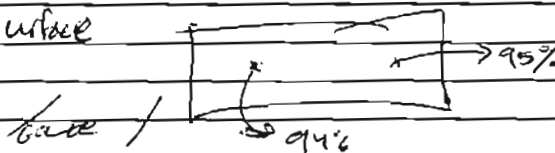
Katie will come back @ 11:30 to test one more time near far end of pit  
Finished drilling holes @ 9:50 AM

@ 10:45 finished compacting the del backfill for E along the edge of the property

@ 10:50 ~~went~~ went back to compacting @ E (new agg base)

Hauling off all scrap steel from site (ie RR tracks, rebar, concrete, etc)

@ 11:45 AM Katie tested surface

 95%

@ 10:50 did a couple more runs over pit.  
- Passed @ 95%





# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/26/14

Contractor: NRC

Page: 3 of 4

On-Site Observer: Yousuf Kabeem

## Activities

Lunch from 12:05-1:05 (Mike left site before lunch)

@ 1:10 marked trench line with spray paint and began digging trench to place water pipe.

top of pipe is -4' below grade.

Cleared inside of pipe ~~with~~ w/rag and removed dust/debris

Trench is 4' wide, 5' deep, 30' long

Length of pipe removed was originally 24'

Using repair coupling to reattach saved off end.

Placed about 1" <sup>at</sup> drainrock ~~under~~ trench bed

Applied pipe lubricant along inside seams of pipe.

Dimensions: EX E = 28 x 58 x 16'

includes ←  
sides that fell  
out about 1'

Dug 3 pits (5' x 5' x 3') and filled 2 trucks each @ 15  
then graded the ground and that's why he got ~~2~~ 2  
extra trucks

E 993 total for backfill

Excavation C @ 258 (dug out) + (46.33' x 27.5' x 6')

258 + 11 = 269 y<sup>3</sup>



# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/26/14

Contractor: NRC

Page: 4 of 4

On-Site Observer: Yousuf Kabeem

## Activities

Attached pipe and ~~test~~ performed hydro test. No leaks.  
Placed about 1-1.5" of gravel over pipe  
Backfilled and compacted.

Before leaving the site, marked lines for sawcutting @ 5 AM tomorrow



# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 6/27/14

Contractor: NRC

Page: 1 of 5

Day: Friday

Weather: Warm

Temp: 60°-70°

Conditions: Sunny

On-Site Observer: Yousuf Kaleem

Arrival: 7:35 AM

Departure: 12:00 PM

Visitors:


Work Force: Personnel, Company

Comments

<u>Scott</u>	
<u>Eddie</u>	
<u>1 Laborer</u>	

Equipment:


Activities

<u>59.3 X 29.3' → Dimensions for E after saw cutting.</u>
<u>Saw cut E this morning @ 5 AM</u>
<u>Cleaning surface @ E and using stringline to measure 8 in'</u>
<u>Eddie started inserting dowels into holes and angling them w/primer.</u>
<u>Prior to this holes were randomly checked. Holes were deep enough</u>
<u>(checked length) of rebar while they were inserted. Lengths were ok ✓</u>
<u>Dimensions Attached</u>



EXCAVATION E

$$58\text{ FT} \times 28\text{ FT} \times 1\text{ FT} = 962\text{ }^{\text{A}}\text{ CY} \Rightarrow 963\text{ CY}$$

ADD ADDITIONAL DEPTH / GRADING

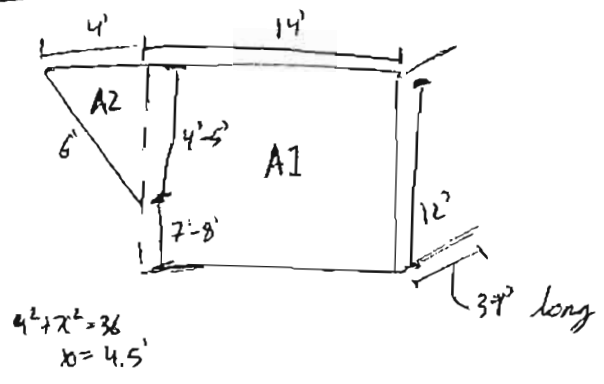
PER MIKE McCLISH - LOADED 2EA  
END DUMPS

\* ASSUME 15CY PER END DUMP  $\Rightarrow$  30CY

$$\text{TOTAL BF} = \underline{\underline{993\text{ CY}}} \rightarrow \text{Bid Item 12}$$

41.4 ~~sq~~ for concrete resurfacing @ E  
59.3' x 29.3'

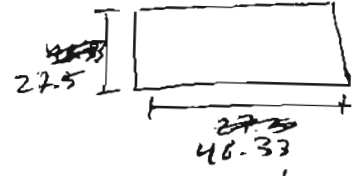
Cross-Section Area C



$A1 = 39' \times 14' \times 12' = 242.7 = 243 \text{ cy } \textcircled{1}$

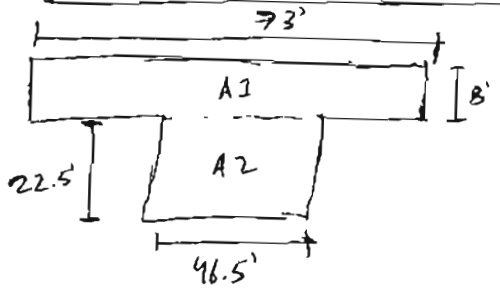
$A2 = \frac{4 \times 5}{2} \times 39' = 14.4 \text{ cy} = 15 \text{ cy } \textcircled{2}$

Base Rock Area  
(Plan View of C)



$46.33 \times 27.5 = 1274 \text{ ft}^2 \textcircled{3}$

Plan Views of Ex C for Concrete Pour



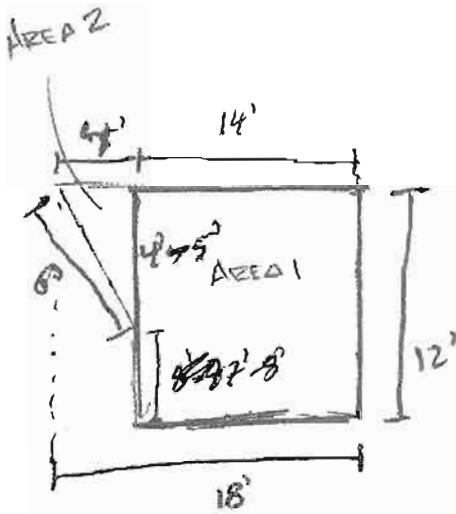
corrected area:  $18 \times 39 = 702 \text{ ft}^2 \textcircled{4}$

$\textcircled{3} - \textcircled{4} = 572 \text{ ft}^2$

$572 \times 0.5 \text{ ft of base rock} = 11 \text{ cy } \textcircled{5}$

$\textcircled{1} + \textcircled{2} + \textcircled{5} = 269 \text{ cy}$   
↓  
Bid Item  $\textcircled{7}$

$73' \times 8' \times 5' = 243 \text{ ft}^3$   
 $46.5' \times 22.5' \times 5' = 435 \text{ ft}^3$   
}  $\frac{678}{27} = 25 \text{ cy} \rightarrow \text{Change order \#1}$



$$4^2 + x^2 = 36$$

$$x^2 = 20$$

$$x = 4.5'$$

39' long

AREA 1

$$39 \text{ FT} \times 14 \text{ FT} \times 12 \text{ FT}$$

$$= 242.7 \Rightarrow 243 \text{ cy}$$

AREA 2

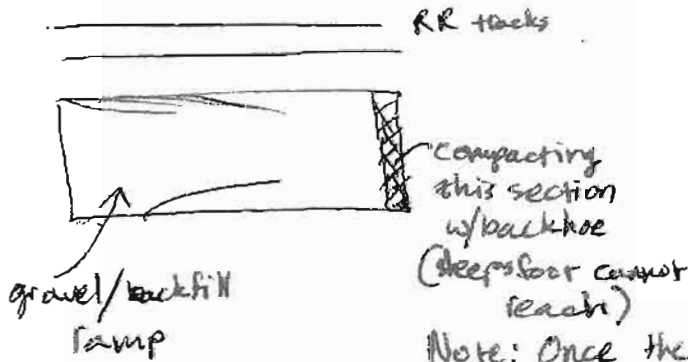
$$\frac{4 \text{ FT} \times 5 \text{ FT}}{2} \times 39 \text{ FT}$$

$$= 14.4 \text{ cy} \Rightarrow 15 \text{ cy}$$


---

258 cy

Plan View of Exc



Note: Once the backfill was 3'-4' from top, the sheepsfoot was able to compact this area.

ADDITIONAL AREA BASE ROCK

$$\text{TOTAL } 46.33 \text{ FT} \times 27.5 \text{ FT} = 1274 \text{ SF}$$

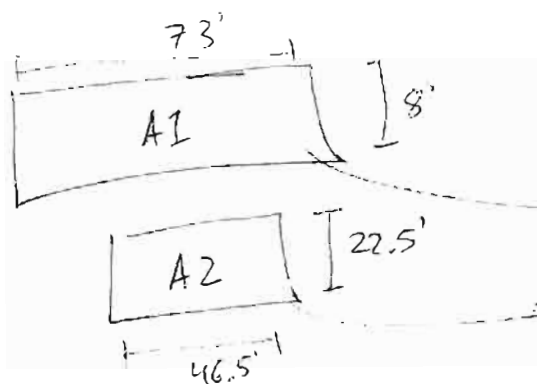
$$\text{CONTACT AREA } 18 \text{ FT} \times 39 \text{ FT} = 702 \text{ SF}$$


---


$$572 \text{ SF}$$

$$572 \text{ SF} \times 0.5 \text{ FT} = 10^6 \text{ cy} \Rightarrow 11 \text{ cy}$$

$$\text{Total} = 258 \text{ cy} + 11 \text{ cy} = \underline{\underline{269 \text{ cy}}}$$



Area for Concrete Paving @ C

554 ft<sup>2</sup>

1046 ft<sup>2</sup>

1630 ft<sup>2</sup>  $\Rightarrow$  680 ft<sup>3</sup>  $\Rightarrow$  25 cy  
avg  
5" thick

# CONSTRUCTION OBSERVATION REPORT

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 7/01/14

Contractor: NRC

Page: 1 of 3

Day: Tue Weather: Clear Temp: \_\_\_\_\_ Conditions: Sunny

On-Site Observer: Yousuf Kaleem Arrival: 8:35 AM Departure: 5:25 PM

Visitors:

<u>Katie</u>	
<u>Ryan</u>	<u>Slump Testing</u>

Work Force:	Personnel, Company	Comments
<u>6 laborers</u>	<u>(Concrete)</u>	
<u>Chris</u>		
<u>Scott</u>		
<u>Jeff</u>		
<u>Eddie</u>		

Equipment:

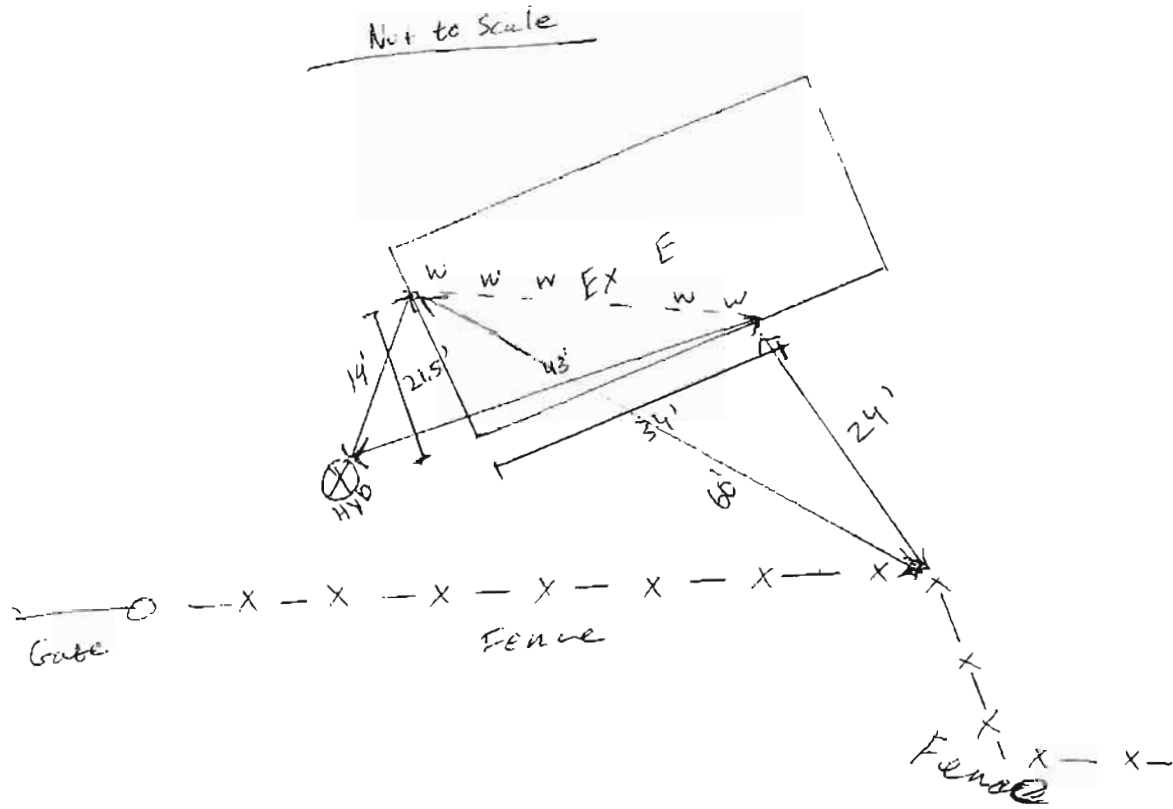
<u>Vibrating reedle</u>
<u>Sawcutting machine</u>
<u>Backhoe</u>

Activities

<u>46% slightly off-line</u>	
<u>45% on-line and 46%</u>	<u>21.5' from edge</u>
	<u>34' from edge</u>
	<u>74' from corner of fence</u>
	<u>60' from corner</u>
<u>@ 9:15 measured location of water pipe @ Ex E. w/ Jeff</u>	
<u>Points: Fire Hyd</u>	
<u>Corner of Excavation</u>	
<u>Corner of fence</u>	







# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 7/01/14

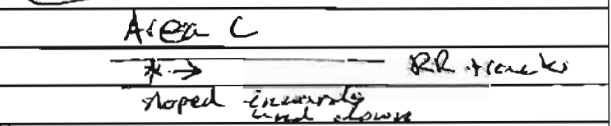
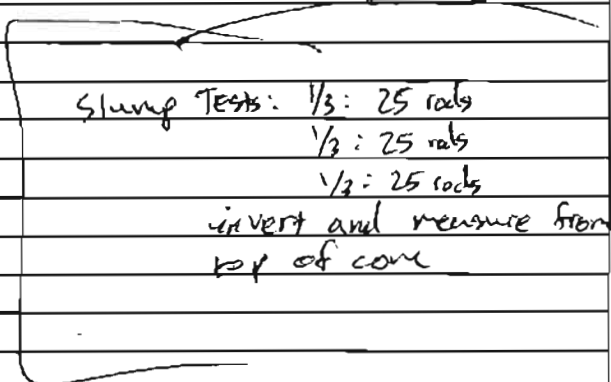
Contractor: NRC

Page: 2 of 3

On-Site Observer: Yusuf Kabeer

## Activities

Small stockpile of debris still @ C
Testing engineer will take 1 slump test per truckload
5 cylinders = 3
1 @ 7 days (60% threshold) normally 7-day break but will change paperwork
3 @ 28 days
1 extra in case average fails
Wet egg base @ E around 9:55 AM
@ 10:05 first load arrives : 2.25" slump ✓ (spec wants 2"-4")
@ 10:35 2nd load : 3.25" ✓
@ 10:50 3rd load : 1.75"-2"
4th load : 3"
@ 12:30 started pour @ C
<del>Jeff said it's ok to sprinkle a little water over poured concrete if needed.</del>
5" : 3.25"
Some swap concrete was lying around C. Eddie cracked it up and spread it around before continuing to pour
6" : 2.75"
Stopped work @ 2 pm waiting on 7th truck
@ 2:30 began spraying curing agent @ E



# CONSTRUCTION OBSERVATION REPORT

(Continued)

Project: Underground Facilities Removal Project

Owner: Owens-Brockway Glass Container  
CKG Environmental, Inc.

Engineer: Sierra West Consultants, Inc.

Date: 7/01/14

Contractor: NRC

Page: 3 of 3

On-Site Observer: Yousuf Kaberem

## Activities

@ 2:40 used backhoe to clear away ~~broken concrete~~ make a cold joint  
since concrete batch has not arrived yet.

After clearing away the concrete, placed stringline and measured: 3"-5"  
Clearing away some high spots to achieve 4"

Acrylic Curing Agent:  $300 \text{ ft}^2/\text{gal} \times 5 \text{ gal} = 1500 \text{ gal}$

@ 2:50 chalking marks for sawcuts @ E

@ 2:55 7<sup>th</sup> truck arrives to pour @ C

@ 3:00 started pouring again. Vibrating rear cold joints  
Slump: 3.75"

Received COPY of Test Results from Ryan before he left @ 3:25

@ 3:30 began sawcutting E

Marked lines for sawcutting @ C and sprayed curing agent

@ 4:45 finished sawcutting E. Sweeping up dust

@ 4:55 began sawcutting @ C. Only 1" saw cut since spec states (1/4 D)



Appendix 4  
Pre-Construction Soil Profile Laboratory Report



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1405768

**Report Created for:** CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

**Project Contact:** Christina Kennedy  
**Project P.O.:**  
**Project Name:** Owens Brockway Glass Plant

**Project Received:** 05/20/2014

Analytical Report reviewed & approved for release on 05/22/2014 by:

Question about  
your data?

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**WorkOrder:** 1405768

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

### Analytical Qualifiers

S	spike recovery outside accepted recovery limits
a3	sample diluted due to high organic content.
a4	the reporting limits were raised due to the sample's matrix prohibiting a full volume extraction.
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	no recognizable pattern
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-4	1405768-001A	Soil	05/20/2014	GC21	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		4.0	2	05/20/2014 17:05
Acenaphthylene	ND		4.0	2	05/20/2014 17:05
Acetochlor	ND		4.0	2	05/20/2014 17:05
Anthracene	ND		4.0	2	05/20/2014 17:05
Benzidine	ND		21	2	05/20/2014 17:05
Benzo (a) anthracene	ND		4.0	2	05/20/2014 17:05
Benzo (b) fluoranthene	ND		4.0	2	05/20/2014 17:05
Benzo (k) fluoranthene	ND		4.0	2	05/20/2014 17:05
Benzo (g,h,i) perylene	ND		4.0	2	05/20/2014 17:05
Benzo (a) pyrene	ND		4.0	2	05/20/2014 17:05
Benzyl Alcohol	ND		21	2	05/20/2014 17:05
1,1-Biphenyl	ND		4.0	2	05/20/2014 17:05
Bis (2-chloroethoxy) Methane	ND		4.0	2	05/20/2014 17:05
Bis (2-chloroethyl) Ether	ND		4.0	2	05/20/2014 17:05
Bis (2-chloroisopropyl) Ether	ND		4.0	2	05/20/2014 17:05
Bis (2-ethylhexyl) Adipate	ND		4.0	2	05/20/2014 17:05
Bis (2-ethylhexyl) Phthalate	ND		4.0	2	05/20/2014 17:05
4-Bromophenyl Phenyl Ether	ND		4.0	2	05/20/2014 17:05
Butylbenzyl Phthalate	ND		4.0	2	05/20/2014 17:05
4-Chloroaniline	ND		4.0	2	05/20/2014 17:05
4-Chloro-3-methylphenol	ND		4.0	2	05/20/2014 17:05
2-Chloronaphthalene	ND		4.0	2	05/20/2014 17:05
2-Chlorophenol	ND		4.0	2	05/20/2014 17:05
4-Chlorophenyl Phenyl Ether	ND		4.0	2	05/20/2014 17:05
Chrysene	ND		4.0	2	05/20/2014 17:05
Dibenzo (a,h) anthracene	ND		4.0	2	05/20/2014 17:05
Dibenzofuran	ND		4.0	2	05/20/2014 17:05
Di-n-butyl Phthalate	ND		4.0	2	05/20/2014 17:05
1,2-Dichlorobenzene	ND		4.0	2	05/20/2014 17:05
1,3-Dichlorobenzene	ND		4.0	2	05/20/2014 17:05
1,4-Dichlorobenzene	ND		4.0	2	05/20/2014 17:05
3,3-Dichlorobenzidine	ND		8.0	2	05/20/2014 17:05
2,4-Dichlorophenol	ND		4.0	2	05/20/2014 17:05
Diethyl Phthalate	ND		4.0	2	05/20/2014 17:05
2,4-Dimethylphenol	ND		4.0	2	05/20/2014 17:05
Dimethyl Phthalate	ND		4.0	2	05/20/2014 17:05
4,6-Dinitro-2-methylphenol	ND		21	2	05/20/2014 17:05
2,4-Dinitrophenol	ND		100	2	05/20/2014 17:05

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-4	1405768-001A	Soil	05/20/2014	GC21	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		4.0	2	05/20/2014 17:05
2,6-Dinitrotoluene	ND		4.0	2	05/20/2014 17:05
Di-n-octyl Phthalate	ND		8.0	2	05/20/2014 17:05
1,2-Diphenylhydrazine	ND		4.0	2	05/20/2014 17:05
Fluoranthene	ND		4.0	2	05/20/2014 17:05
Fluorene	ND		4.0	2	05/20/2014 17:05
Hexachlorobenzene	ND		4.0	2	05/20/2014 17:05
Hexachlorobutadiene	ND		4.0	2	05/20/2014 17:05
Hexachlorocyclopentadiene	ND		21	2	05/20/2014 17:05
Hexachloroethane	ND		4.0	2	05/20/2014 17:05
Indeno (1,2,3-cd) pyrene	ND		4.0	2	05/20/2014 17:05
Isophorone	ND		4.0	2	05/20/2014 17:05
2-Methylnaphthalene	ND		4.0	2	05/20/2014 17:05
2-Methylphenol (o-Cresol)	ND		4.0	2	05/20/2014 17:05
3 &/or 4-Methylphenol (m,p-Cresol)	ND		4.0	2	05/20/2014 17:05
Naphthalene	ND		4.0	2	05/20/2014 17:05
2-Nitroaniline	ND		21	2	05/20/2014 17:05
3-Nitroaniline	ND		21	2	05/20/2014 17:05
4-Nitroaniline	ND		21	2	05/20/2014 17:05
Nitrobenzene	ND		4.0	2	05/20/2014 17:05
2-Nitrophenol	ND		21	2	05/20/2014 17:05
4-Nitrophenol	ND		21	2	05/20/2014 17:05
N-Nitrosodiphenylamine	ND		4.0	2	05/20/2014 17:05
N-Nitrosodi-n-propylamine	ND		4.0	2	05/20/2014 17:05
Pentachlorophenol	ND		21	2	05/20/2014 17:05
Phenanthrene	ND		4.0	2	05/20/2014 17:05
Phenol	ND		4.0	2	05/20/2014 17:05
Pyrene	ND		4.0	2	05/20/2014 17:05
1,2,4-Trichlorobenzene	ND		4.0	2	05/20/2014 17:05
2,4,5-Trichlorophenol	ND		4.0	2	05/20/2014 17:05
2,4,6-Trichlorophenol	ND		4.0	2	05/20/2014 17:05

(Cont.)





## Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-4	1405768-001A	Soil	05/20/2014	GC21	90625
Analytes	Result	RL	DF	Date Analyzed	
Surrogates	REC (%)	Limits	Analytical Comments: a3,a4		
2-Fluorophenol	89	30-130	05/20/2014 17:05		
Phenol-d5	84	30-130	05/20/2014 17:05		
Nitrobenzene-d5	78	30-130	05/20/2014 17:05		
2-Fluorobiphenyl	86	30-130	05/20/2014 17:05		
2,4,6-Tribromophenol	25	16-130	05/20/2014 17:05		
4-Terphenyl-d14	90	30-130	05/20/2014 17:05		

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-7.5	1405768-002A	Soil	05/20/2014	GC21	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		4.0	2	05/20/2014 17:32
Acenaphthylene	ND		4.0	2	05/20/2014 17:32
Acetochlor	ND		4.0	2	05/20/2014 17:32
Anthracene	ND		4.0	2	05/20/2014 17:32
Benzidine	ND		21	2	05/20/2014 17:32
Benzo (a) anthracene	ND		4.0	2	05/20/2014 17:32
Benzo (b) fluoranthene	ND		4.0	2	05/20/2014 17:32
Benzo (k) fluoranthene	ND		4.0	2	05/20/2014 17:32
Benzo (g,h,i) perylene	ND		4.0	2	05/20/2014 17:32
Benzo (a) pyrene	ND		4.0	2	05/20/2014 17:32
Benzyl Alcohol	ND		21	2	05/20/2014 17:32
1,1-Biphenyl	ND		4.0	2	05/20/2014 17:32
Bis (2-chloroethoxy) Methane	ND		4.0	2	05/20/2014 17:32
Bis (2-chloroethyl) Ether	ND		4.0	2	05/20/2014 17:32
Bis (2-chloroisopropyl) Ether	ND		4.0	2	05/20/2014 17:32
Bis (2-ethylhexyl) Adipate	ND		4.0	2	05/20/2014 17:32
Bis (2-ethylhexyl) Phthalate	ND		4.0	2	05/20/2014 17:32
4-Bromophenyl Phenyl Ether	ND		4.0	2	05/20/2014 17:32
Butylbenzyl Phthalate	ND		4.0	2	05/20/2014 17:32
4-Chloroaniline	ND		4.0	2	05/20/2014 17:32
4-Chloro-3-methylphenol	ND		4.0	2	05/20/2014 17:32
2-Chloronaphthalene	ND		4.0	2	05/20/2014 17:32
2-Chlorophenol	ND		4.0	2	05/20/2014 17:32
4-Chlorophenyl Phenyl Ether	ND		4.0	2	05/20/2014 17:32
Chrysene	ND		4.0	2	05/20/2014 17:32
Dibenzo (a,h) anthracene	ND		4.0	2	05/20/2014 17:32
Dibenzofuran	ND		4.0	2	05/20/2014 17:32
Di-n-butyl Phthalate	ND		4.0	2	05/20/2014 17:32
1,2-Dichlorobenzene	ND		4.0	2	05/20/2014 17:32
1,3-Dichlorobenzene	ND		4.0	2	05/20/2014 17:32
1,4-Dichlorobenzene	ND		4.0	2	05/20/2014 17:32
3,3-Dichlorobenzidine	ND		8.0	2	05/20/2014 17:32
2,4-Dichlorophenol	ND		4.0	2	05/20/2014 17:32
Diethyl Phthalate	ND		4.0	2	05/20/2014 17:32
2,4-Dimethylphenol	ND		4.0	2	05/20/2014 17:32
Dimethyl Phthalate	ND		4.0	2	05/20/2014 17:32
4,6-Dinitro-2-methylphenol	ND		21	2	05/20/2014 17:32
2,4-Dinitrophenol	ND		100	2	05/20/2014 17:32

(Cont.)



## Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-7.5	1405768-002A	Soil	05/20/2014	GC21	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		4.0	2	05/20/2014 17:32
2,6-Dinitrotoluene	ND		4.0	2	05/20/2014 17:32
Di-n-octyl Phthalate	ND		8.0	2	05/20/2014 17:32
1,2-Diphenylhydrazine	ND		4.0	2	05/20/2014 17:32
Fluoranthene	ND		4.0	2	05/20/2014 17:32
Fluorene	ND		4.0	2	05/20/2014 17:32
Hexachlorobenzene	ND		4.0	2	05/20/2014 17:32
Hexachlorobutadiene	ND		4.0	2	05/20/2014 17:32
Hexachlorocyclopentadiene	ND		21	2	05/20/2014 17:32
Hexachloroethane	ND		4.0	2	05/20/2014 17:32
Indeno (1,2,3-cd) pyrene	ND		4.0	2	05/20/2014 17:32
Isophorone	ND		4.0	2	05/20/2014 17:32
2-Methylnaphthalene	ND		4.0	2	05/20/2014 17:32
2-Methylphenol (o-Cresol)	ND		4.0	2	05/20/2014 17:32
3 &/or 4-Methylphenol (m,p-Cresol)	ND		4.0	2	05/20/2014 17:32
Naphthalene	ND		4.0	2	05/20/2014 17:32
2-Nitroaniline	ND		21	2	05/20/2014 17:32
3-Nitroaniline	ND		21	2	05/20/2014 17:32
4-Nitroaniline	ND		21	2	05/20/2014 17:32
Nitrobenzene	ND		4.0	2	05/20/2014 17:32
2-Nitrophenol	ND		21	2	05/20/2014 17:32
4-Nitrophenol	ND		21	2	05/20/2014 17:32
N-Nitrosodiphenylamine	ND		4.0	2	05/20/2014 17:32
N-Nitrosodi-n-propylamine	ND		4.0	2	05/20/2014 17:32
Pentachlorophenol	ND		21	2	05/20/2014 17:32
Phenanthrene	ND		4.0	2	05/20/2014 17:32
Phenol	ND		4.0	2	05/20/2014 17:32
Pyrene	ND		4.0	2	05/20/2014 17:32
1,2,4-Trichlorobenzene	ND		4.0	2	05/20/2014 17:32
2,4,5-Trichlorophenol	ND		4.0	2	05/20/2014 17:32
2,4,6-Trichlorophenol	ND		4.0	2	05/20/2014 17:32

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# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-7.5	1405768-002A	Soil	05/20/2014	GC21	90625

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a3,a4	
2-Fluorophenol	94	30-130		05/20/2014 17:32
Phenol-d5	88	30-130		05/20/2014 17:32
Nitrobenzene-d5	87	30-130		05/20/2014 17:32
2-Fluorobiphenyl	96	30-130		05/20/2014 17:32
2,4,6-Tribromophenol	67	16-130		05/20/2014 17:32
4-Terphenyl-d14	108	30-130		05/20/2014 17:32

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-12.5	1405768-003A	Soil	05/20/2014	GC21	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		20	10	05/20/2014 18:00
Acenaphthylene	ND		20	10	05/20/2014 18:00
Acetochlor	ND		20	10	05/20/2014 18:00
Anthracene	ND		20	10	05/20/2014 18:00
Benzidine	ND		100	10	05/20/2014 18:00
Benzo (a) anthracene	ND		20	10	05/20/2014 18:00
Benzo (b) fluoranthene	ND		20	10	05/20/2014 18:00
Benzo (k) fluoranthene	ND		20	10	05/20/2014 18:00
Benzo (g,h,i) perylene	ND		20	10	05/20/2014 18:00
Benzo (a) pyrene	ND		20	10	05/20/2014 18:00
Benzyl Alcohol	ND		100	10	05/20/2014 18:00
1,1-Biphenyl	ND		20	10	05/20/2014 18:00
Bis (2-chloroethoxy) Methane	ND		20	10	05/20/2014 18:00
Bis (2-chloroethyl) Ether	ND		20	10	05/20/2014 18:00
Bis (2-chloroisopropyl) Ether	ND		20	10	05/20/2014 18:00
Bis (2-ethylhexyl) Adipate	ND		20	10	05/20/2014 18:00
Bis (2-ethylhexyl) Phthalate	ND		20	10	05/20/2014 18:00
4-Bromophenyl Phenyl Ether	ND		20	10	05/20/2014 18:00
Butylbenzyl Phthalate	ND		20	10	05/20/2014 18:00
4-Chloroaniline	ND		20	10	05/20/2014 18:00
4-Chloro-3-methylphenol	ND		20	10	05/20/2014 18:00
2-Chloronaphthalene	ND		20	10	05/20/2014 18:00
2-Chlorophenol	ND		20	10	05/20/2014 18:00
4-Chlorophenyl Phenyl Ether	ND		20	10	05/20/2014 18:00
Chrysene	ND		20	10	05/20/2014 18:00
Dibenzo (a,h) anthracene	ND		20	10	05/20/2014 18:00
Dibenzofuran	ND		20	10	05/20/2014 18:00
Di-n-butyl Phthalate	ND		20	10	05/20/2014 18:00
1,2-Dichlorobenzene	ND		20	10	05/20/2014 18:00
1,3-Dichlorobenzene	ND		20	10	05/20/2014 18:00
1,4-Dichlorobenzene	ND		20	10	05/20/2014 18:00
3,3-Dichlorobenzidine	ND		40	10	05/20/2014 18:00
2,4-Dichlorophenol	ND		20	10	05/20/2014 18:00
Diethyl Phthalate	ND		20	10	05/20/2014 18:00
2,4-Dimethylphenol	ND		20	10	05/20/2014 18:00
Dimethyl Phthalate	ND		20	10	05/20/2014 18:00
4,6-Dinitro-2-methylphenol	ND		100	10	05/20/2014 18:00
2,4-Dinitrophenol	ND		500	10	05/20/2014 18:00

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-12.5	1405768-003A	Soil	05/20/2014	GC21	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		20	10	05/20/2014 18:00
2,6-Dinitrotoluene	ND		20	10	05/20/2014 18:00
Di-n-octyl Phthalate	ND		40	10	05/20/2014 18:00
1,2-Diphenylhydrazine	ND		20	10	05/20/2014 18:00
Fluoranthene	ND		20	10	05/20/2014 18:00
Fluorene	ND		20	10	05/20/2014 18:00
Hexachlorobenzene	ND		20	10	05/20/2014 18:00
Hexachlorobutadiene	ND		20	10	05/20/2014 18:00
Hexachlorocyclopentadiene	ND		100	10	05/20/2014 18:00
Hexachloroethane	ND		20	10	05/20/2014 18:00
Indeno (1,2,3-cd) pyrene	ND		20	10	05/20/2014 18:00
Isophorone	ND		20	10	05/20/2014 18:00
2-Methylnaphthalene	ND		20	10	05/20/2014 18:00
2-Methylphenol (o-Cresol)	ND		20	10	05/20/2014 18:00
3 &/or 4-Methylphenol (m,p-Cresol)	ND		20	10	05/20/2014 18:00
Naphthalene	ND		20	10	05/20/2014 18:00
2-Nitroaniline	ND		100	10	05/20/2014 18:00
3-Nitroaniline	ND		100	10	05/20/2014 18:00
4-Nitroaniline	ND		100	10	05/20/2014 18:00
Nitrobenzene	ND		20	10	05/20/2014 18:00
2-Nitrophenol	ND		100	10	05/20/2014 18:00
4-Nitrophenol	ND		100	10	05/20/2014 18:00
N-Nitrosodiphenylamine	ND		20	10	05/20/2014 18:00
N-Nitrosodi-n-propylamine	ND		20	10	05/20/2014 18:00
Pentachlorophenol	ND		100	10	05/20/2014 18:00
Phenanthrene	ND		20	10	05/20/2014 18:00
Phenol	ND		20	10	05/20/2014 18:00
Pyrene	ND		20	10	05/20/2014 18:00
1,2,4-Trichlorobenzene	ND		20	10	05/20/2014 18:00
2,4,5-Trichlorophenol	ND		20	10	05/20/2014 18:00
2,4,6-Trichlorophenol	ND		20	10	05/20/2014 18:00

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-12.5	1405768-003A	Soil	05/20/2014	GC21	90625

Analytes	Result		RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3,a4,c1	
2-Fluorophenol	68		30-130		05/20/2014 18:00
Phenol-d5	61		30-130		05/20/2014 18:00
Nitrobenzene-d5	89		30-130		05/20/2014 18:00
2-Fluorobiphenyl	88		30-130		05/20/2014 18:00
2,4,6-Tribromophenol	0	S	16-130		05/20/2014 18:00
4-Terphenyl-d14	94		30-130		05/20/2014 18:00

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-16	1405768-004A	Soil	05/20/2014	GC17	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		10	5	05/21/2014 17:20
Acenaphthylene	ND		10	5	05/21/2014 17:20
Acetochlor	ND		10	5	05/21/2014 17:20
Anthracene	ND		10	5	05/21/2014 17:20
Benzidine	ND		52	5	05/21/2014 17:20
Benzo (a) anthracene	ND		10	5	05/21/2014 17:20
Benzo (b) fluoranthene	ND		10	5	05/21/2014 17:20
Benzo (k) fluoranthene	ND		10	5	05/21/2014 17:20
Benzo (g,h,i) perylene	ND		10	5	05/21/2014 17:20
Benzo (a) pyrene	ND		10	5	05/21/2014 17:20
Benzyl Alcohol	ND		52	5	05/21/2014 17:20
1,1-Biphenyl	ND		10	5	05/21/2014 17:20
Bis (2-chloroethoxy) Methane	ND		10	5	05/21/2014 17:20
Bis (2-chloroethyl) Ether	ND		10	5	05/21/2014 17:20
Bis (2-chloroisopropyl) Ether	ND		10	5	05/21/2014 17:20
Bis (2-ethylhexyl) Adipate	ND		10	5	05/21/2014 17:20
Bis (2-ethylhexyl) Phthalate	ND		10	5	05/21/2014 17:20
4-Bromophenyl Phenyl Ether	ND		10	5	05/21/2014 17:20
Butylbenzyl Phthalate	ND		10	5	05/21/2014 17:20
4-Chloroaniline	ND		10	5	05/21/2014 17:20
4-Chloro-3-methylphenol	ND		10	5	05/21/2014 17:20
2-Chloronaphthalene	ND		10	5	05/21/2014 17:20
2-Chlorophenol	ND		10	5	05/21/2014 17:20
4-Chlorophenyl Phenyl Ether	ND		10	5	05/21/2014 17:20
Chrysene	ND		10	5	05/21/2014 17:20
Dibenzo (a,h) anthracene	ND		10	5	05/21/2014 17:20
Dibenzofuran	ND		10	5	05/21/2014 17:20
Di-n-butyl Phthalate	ND		10	5	05/21/2014 17:20
1,2-Dichlorobenzene	ND		10	5	05/21/2014 17:20
1,3-Dichlorobenzene	ND		10	5	05/21/2014 17:20
1,4-Dichlorobenzene	ND		10	5	05/21/2014 17:20
3,3-Dichlorobenzidine	ND		20	5	05/21/2014 17:20
2,4-Dichlorophenol	ND		10	5	05/21/2014 17:20
Diethyl Phthalate	ND		10	5	05/21/2014 17:20
2,4-Dimethylphenol	ND		10	5	05/21/2014 17:20
Dimethyl Phthalate	ND		10	5	05/21/2014 17:20
4,6-Dinitro-2-methylphenol	ND		52	5	05/21/2014 17:20
2,4-Dinitrophenol	ND		250	5	05/21/2014 17:20

(Cont.)





## Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-16	1405768-004A	Soil	05/20/2014	GC17	90625
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		10	5	05/21/2014 17:20
2,6-Dinitrotoluene	ND		10	5	05/21/2014 17:20
Di-n-octyl Phthalate	ND		20	5	05/21/2014 17:20
1,2-Diphenylhydrazine	ND		10	5	05/21/2014 17:20
Fluoranthene	ND		10	5	05/21/2014 17:20
Fluorene	ND		10	5	05/21/2014 17:20
Hexachlorobenzene	ND		10	5	05/21/2014 17:20
Hexachlorobutadiene	ND		10	5	05/21/2014 17:20
Hexachlorocyclopentadiene	ND		52	5	05/21/2014 17:20
Hexachloroethane	ND		10	5	05/21/2014 17:20
Indeno (1,2,3-cd) pyrene	ND		10	5	05/21/2014 17:20
Isophorone	ND		10	5	05/21/2014 17:20
2-Methylnaphthalene	ND		10	5	05/21/2014 17:20
2-Methylphenol (o-Cresol)	ND		10	5	05/21/2014 17:20
3 &/or 4-Methylphenol (m,p-Cresol)	ND		10	5	05/21/2014 17:20
Naphthalene	ND		10	5	05/21/2014 17:20
2-Nitroaniline	ND		52	5	05/21/2014 17:20
3-Nitroaniline	ND		52	5	05/21/2014 17:20
4-Nitroaniline	ND		52	5	05/21/2014 17:20
Nitrobenzene	ND		10	5	05/21/2014 17:20
2-Nitrophenol	ND		52	5	05/21/2014 17:20
4-Nitrophenol	ND		52	5	05/21/2014 17:20
N-Nitrosodiphenylamine	ND		10	5	05/21/2014 17:20
N-Nitrosodi-n-propylamine	ND		10	5	05/21/2014 17:20
Pentachlorophenol	ND		52	5	05/21/2014 17:20
Phenanthrene	ND		10	5	05/21/2014 17:20
Phenol	ND		10	5	05/21/2014 17:20
Pyrene	ND		10	5	05/21/2014 17:20
1,2,4-Trichlorobenzene	ND		10	5	05/21/2014 17:20
2,4,5-Trichlorophenol	ND		10	5	05/21/2014 17:20
2,4,6-Trichlorophenol	ND		10	5	05/21/2014 17:20

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-16	1405768-004A	Soil	05/20/2014	GC17	90625

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a3,a4	
2-Fluorophenol	92	30-130		05/21/2014 17:20
Phenol-d5	84	30-130		05/21/2014 17:20
Nitrobenzene-d5	82	30-130		05/21/2014 17:20
2-Fluorobiphenyl	97	30-130		05/21/2014 17:20
2,4,6-Tribromophenol	53	16-130		05/21/2014 17:20
4-Terphenyl-d14	94	30-130		05/21/2014 17:20



## Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
<b>BB-4</b>	<b>1405768-001A</b>	<b>Soil</b>	<b>05/20/2014</b>	<b>GC19</b>	<b>90605</b>

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	<b>5.8</b>	1.0	1	05/21/2014 15:17
MTBE	ND	0.050	1	05/21/2014 15:17
Benzene	ND	0.0050	1	05/21/2014 15:17
Toluene	<b>0.011</b>	0.0050	1	05/21/2014 15:17
Ethylbenzene	ND	0.0050	1	05/21/2014 15:17
Xylenes	<b>0.012</b>	0.0050	1	05/21/2014 15:17
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d7,d9	
2-Fluorotoluene	90	70-130		05/21/2014 15:17

<b>BB-7.5</b>	<b>1405768-002A</b>	<b>Soil</b>	<b>05/20/2014</b>	<b>GC19</b>	<b>90605</b>
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	<b>61</b>	20	20	05/21/2014 13:42
MTBE	ND	1.0	20	05/21/2014 13:42
Benzene	ND	0.10	20	05/21/2014 13:42
Toluene	ND	0.10	20	05/21/2014 13:42
Ethylbenzene	ND	0.10	20	05/21/2014 13:42
Xylenes	ND	0.10	20	05/21/2014 13:42
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	105	70-130		05/21/2014 13:42

<b>BB-12.5</b>	<b>1405768-003A</b>	<b>Soil</b>	<b>05/20/2014</b>	<b>GC7</b>	<b>90605</b>
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	<b>610</b>	200	200	05/20/2014 18:13
MTBE	ND	10	200	05/20/2014 18:13
Benzene	ND	1.0	200	05/20/2014 18:13
Toluene	ND	1.0	200	05/20/2014 18:13
Ethylbenzene	ND	1.0	200	05/20/2014 18:13
Xylenes	ND	1.0	200	05/20/2014 18:13
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d7	
aaa-TFT	90	70-130		05/20/2014 18:13

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-16	1405768-004A	Soil	05/20/2014	GC7	90605
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	750		200	200	05/20/2014 18:43
MTBE	ND		10	200	05/20/2014 18:43
Benzene	ND		1.0	200	05/20/2014 18:43
Toluene	ND		1.0	200	05/20/2014 18:43
Ethylbenzene	ND		1.0	200	05/20/2014 18:43
Xylenes	ND		1.0	200	05/20/2014 18:43
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7	
aaa-TFT	95		70-130	05/20/2014 18:43	



## Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg

### Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
<b>BB-4</b>	<b>1405768-001A</b>	<b>Soil/TOTAL</b>	<b>05/20/2014</b>	<b>ICP-MS1</b>	<b>90619</b>
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	2.1		0.25	1	05/21/2014 10:24
Chromium	26		0.50	1	05/21/2014 10:24
Copper	20		0.50	1	05/21/2014 10:24
Lead	4.2		0.50	1	05/21/2014 10:24
Mercury	ND		0.050	1	05/21/2014 10:24
Nickel	33		0.50	1	05/21/2014 10:24
Zinc	65		5.0	1	05/21/2014 10:24
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	110		70-130		05/21/2014 10:24
<b>BB-7.5</b>	<b>1405768-002A</b>	<b>Soil/TOTAL</b>	<b>05/20/2014</b>	<b>ICP-MS1</b>	<b>90619</b>
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		0.25	1	05/21/2014 10:30
Chromium	50		0.50	1	05/21/2014 10:30
Copper	16		0.50	1	05/21/2014 10:30
Lead	6.8		0.50	1	05/21/2014 10:30
Mercury	0.054		0.050	1	05/21/2014 10:30
Nickel	55		0.50	1	05/21/2014 10:30
Zinc	44		5.0	1	05/21/2014 10:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	111		70-130		05/21/2014 10:30
<b>BB-12.5</b>	<b>1405768-003A</b>	<b>Soil/TOTAL</b>	<b>05/20/2014</b>	<b>ICP-MS1</b>	<b>90619</b>
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		0.25	1	05/21/2014 10:37
Chromium	63		0.50	1	05/21/2014 10:37
Copper	17		0.50	1	05/21/2014 10:37
Lead	47		0.50	1	05/21/2014 10:37
Mercury	0.080		0.050	1	05/21/2014 10:37
Nickel	83		0.50	1	05/21/2014 10:37
Zinc	54		5.0	1	05/21/2014 10:37
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	109		70-130		05/21/2014 10:37

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg

## Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-16	1405768-004A	Soil/TOTAL	05/20/2014	ICP-MS1	90619
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		0.25	1	05/21/2014 10:43
Chromium	62		0.50	1	05/21/2014 10:43
Copper	13		0.50	1	05/21/2014 10:43
Lead	3.0		0.50	1	05/21/2014 10:43
Mercury	ND		0.050	1	05/21/2014 10:43
Nickel	53		0.50	1	05/21/2014 10:43
Zinc	31		5.0	1	05/21/2014 10:43
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	109		70-130		05/21/2014 10:43



# Analytical Report

**Client:** CKG Environmental  
**Project:** Owens Brockway Glass Plant  
**Date Received:** 5/20/14 13:28  
**Date Prepared:** 5/20/14

**WorkOrder:** 1405768  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-4	1405768-001A	Soil	05/20/2014	GC6B	90588

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	89	5.0	5	05/22/2014 16:16
TPH-Motor Oil (C18-C36)	140	25	5	05/22/2014 16:16
TPH-Fuel Oil (C10-C36)	180	10	5	05/22/2014 16:16
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	111	70-130		05/22/2014 16:16

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-7.5	1405768-002A	Soil	05/20/2014	GC6A	90588

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	450	20	20	05/22/2014 16:16
TPH-Motor Oil (C18-C36)	570	100	20	05/22/2014 16:16
TPH-Fuel Oil (C10-C36)	740	40	20	05/22/2014 16:16
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	86	70-130		05/22/2014 16:16

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-12.5	1405768-003A	Soil	05/20/2014	GC2B	90588

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	2200	10	10	05/22/2014 04:19
TPH-Motor Oil (C18-C36)	2400	50	10	05/22/2014 04:19
TPH-Fuel Oil (C10-C36)	3500	20	10	05/22/2014 04:19
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	107	70-130		05/22/2014 04:19

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
BB-16	1405768-004A	Soil	05/20/2014	GC11A	90588

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	2400	20	20	05/22/2014 05:42
TPH-Motor Oil (C18-C36)	2800	100	20	05/22/2014 05:42
TPH-Fuel Oil (C10-C36)	3800	40	20	05/22/2014 05:42
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	119	70-130		05/22/2014 05:42



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 5/20/14  
**Date Analyzed:** 5/20/14  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** Owens Brockway Glass Plant

**WorkOrder:** 1405768  
**BatchID:** 90625  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-90625  
 1405725-001AMS/MSD

## QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	4.29	0.25	5	-	85.9	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	5.34	0.25	5	-	107	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	5.14	0.25	5	-	103	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	4.56	0.25	5	-	91.2	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	4.73	0.25	5	-	94.6	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)





## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 5/20/14  
**Date Analyzed:** 5/20/14  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** Owens Brockway Glass Plant

**WorkOrder:** 1405768  
**BatchID:** 90625  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-90625  
 1405725-001AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	3.94	1.3	5	-	78.7	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	5.49	0.25	5	-	110	30-130
Pentachlorophenol	ND	3.29	1.3	5	-	65.9	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.90	0.25	5	-	98	30-130
Pyrene	ND	4.94	0.25	5	-	98.7	30-130
1,2,4-Trichlorobenzene	ND	4.86	0.25	5	-	97.3	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

#### Surrogate Recovery

2-Fluorophenol	4.84	4.62		5	97	92	30-130
Phenol-d5	4.81	4.63		5	96	93	30-130
Nitrobenzene-d5	4.32	4.33		5	86	87	30-130
2-Fluorobiphenyl	4.34	4.22		5	87	84	30-130
2,4,6-Tribromophenol	3.57	3.95		5	71	79	16-130
4-Terphenyl-d14	5.16	5.34		5	103	107	30-130

(Cont.)



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 5/20/14  
**Date Analyzed:** 5/20/14  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** Owens Brockway Glass Plant

**WorkOrder:** 1405768  
**BatchID:** 90625  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-90625  
 1405725-001AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<20	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<20	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<20	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<20	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<20	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<100	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<20	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<100	NR	NR	-	NR	
Phenol	NR	NR	0	ND<20	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<20	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<20	NR	NR	-	NR	

**Surrogate Recovery**

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 5/19/14  
**Date Analyzed:** 5/21/14  
**Instrument:** GC7  
**Matrix:** Soil  
**Project:** Owens Brockway Glass Plant

**WorkOrder:** 1405768  
**BatchID:** 90605  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-90605  
 1405779-002AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.687	0.40	0.60	-	114	70-130
MTBE	ND	0.0813	0.050	0.10	-	81.3	70-130
Benzene	ND	0.115	0.0050	0.10	-	115	70-130
Toluene	ND	0.112	0.0050	0.10	-	112	70-130
Ethylbenzene	ND	0.117	0.0050	0.10	-	117	70-130
Xylenes	ND	0.359	0.0050	0.30	-	120	70-130

### Surrogate Recovery

2-Fluorotoluene	0.120	0.108		0.10	120	108	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR	0	ND<4	NR	NR	-	NR	
MTBE	NR	NR	0	ND<0.5	NR	NR	-	NR	
Benzene	NR	NR	0	ND<0.05	NR	NR	-	NR	
Toluene	NR	NR	0	ND<0.05	NR	NR	-	NR	
Ethylbenzene	NR	NR	0	ND<0.05	NR	NR	-	NR	
Xylenes	NR	NR	0	ND<0.05	NR	NR	-	NR	

### Surrogate Recovery

2-Fluorotoluene	NR	NR	0		NR	NR	-	NR	
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# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 5/20/14  
**Date Analyzed:** 5/21/14  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** Owens Brockway Glass Plant

**WorkOrder:** 1405768  
**BatchID:** 90619  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-90619  
 1405768-004AMS/MSD

## QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	53.4	0.25	50	-	107	75-125
Chromium	ND	53.4	0.50	50	-	107	75-125
Copper	ND	52.8	0.50	50	-	106	75-125
Lead	ND	53.4	0.50	50	-	107	75-125
Mercury	ND	1.18	0.050	1.25	-	94.7	75-125
Nickel	ND	52.4	0.50	50	-	105	75-125
Zinc	ND	544	5.0	500	-	109	75-125

**Surrogate Recovery**

Tb 350.917	552	538		500	110	108	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	54.4	53.9	50	ND	109	108	75-125	1.02	20
Chromium	116	106	50	61.60	110	87.8	75-125	9.82	20
Copper	64.2	64.8	50	12.66	103	104	75-125	0.977	20
Lead	57.0	57.3	50	2.982	108	109	75-125	0.578	20
Mercury	1.16	1.18	1.25	ND	92.6	94.5	75-125	1.97	20
Nickel	NR	NR	50	52.51	NR	NR	75-125	NR	20
Zinc	565	564	500	30.84	107	107	75-125	0	20

**Surrogate Recovery**

Tb 350.917	554	547	500		111	109	70-130	1.31	20
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 5/19/14  
**Date Analyzed:** 5/20/14  
**Instrument:** GC6A, GC6B  
**Matrix:** Soil  
**Project:** Owens Brockway Glass Plant

**WorkOrder:** 1405768  
**BatchID:** 90588  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-90588  
 1405722-001AMS/MSD

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	38.9	1.0	40	-	97.2	70-130
<b>Surrogate Recovery</b>							
C9	22.0	24.3		25	88	97	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR	0	1800	NR	NR	-	NR	
<b>Surrogate Recovery</b>									
C9	NR	NR	0		NR	NR	-	NR	

1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1405768

ClientCode: CKGS

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Christina Kennedy  
CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574  
(707) 967-8080    FAX: (707) 967-8080

Email: ckennedy@geologist.com  
cc/3rd Party:  
PO:  
ProjectNo: Owens Brockway Glass Plant

**Bill to:**

Accounts Payable  
CKG Environmental  
808 Zinfindel Lane  
St. Helena, CA 94574

**Requested TAT:**

**2 days**

**Date Received: 05/20/2014**

**Date Printed: 05/20/2014**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1405768-001	BB-4	Soil	5/20/2014	<input type="checkbox"/>	A	A	A	A									
1405768-002	BB-7.5	Soil	5/20/2014	<input type="checkbox"/>	A	A	A	A									
1405768-003	BB-12.5	Soil	5/20/2014	<input type="checkbox"/>	A	A	A	A									
1405768-004	BB-16	Soil	5/20/2014	<input type="checkbox"/>	A	A	A	A									

**Test Legend:**

1	8270D_S	2	G-MBTEX_S	3	METALSMS_S	4	TPH_S	5	
6		7		8		9		10	
11		12							

**Prepared by: Maria Venegas**

**Comments:**    2 Day TAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL  
**Project:** Owens Brockway Glass Plant  
**Comments:** 2 Day TAT

**QC Level:** LEVEL 2  
**Client Contact:** Christina Kennedy  
**Contact's Email:** ckennedy@geologist.com

**Work Order:** 1405768  
**Date Received:** 5/20/2014

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1405768-001A	BB-4	Soil	SW8015B (TEPHs) <TPH-Diesel (C10-C23), TPH-Fuel Oil (C10-C36), TPH-Motor Oil (C18-C36)>	1	Acetate Liner	<input type="checkbox"/>	5/20/2014	2 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc>			<input type="checkbox"/>		2 days			
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		2 days			
			SW8270C (SVOCs)			<input type="checkbox"/>		2 days			
1405768-002A	BB-7.5	Soil	SW8015B (TEPHs) <TPH-Diesel (C10-C23), TPH-Fuel Oil (C10-C36), TPH-Motor Oil (C18-C36)>	1	Acetate Liner	<input type="checkbox"/>	5/20/2014	2 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc>			<input type="checkbox"/>		2 days			
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		2 days			
			SW8270C (SVOCs)			<input type="checkbox"/>		2 days			
1405768-003A	BB-12.5	Soil	SW8015B (TEPHs) <TPH-Diesel (C10-C23), TPH-Fuel Oil (C10-C36), TPH-Motor Oil (C18-C36)>	1	Acetate Liner	<input type="checkbox"/>	5/20/2014	2 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc>			<input type="checkbox"/>		2 days			
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>		2 days			
			SW8270C (SVOCs)			<input type="checkbox"/>		2 days			

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Acetate Liner = Acetate Liner



## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL  
**Project:** Owens Brockway Glass Plant  
**Comments:** 2 Day TAT

**QC Level:** LEVEL 2  
**Client Contact:** Christina Kennedy  
**Contact's Email:** ckennedy@geologist.com

**Work Order:** 1405768  
**Date Received:** 5/20/2014

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1405768-003A	BB-12.5	Soil	SW8270C (SVOCs)	1	Acetate Liner	<input type="checkbox"/>	5/20/2014	2 days		<input type="checkbox"/>	
1405768-004A	BB-16	Soil	SW8015B (TEPHs) <TPH-Diesel (C10-C23), TPH-Fuel Oil (C10-C36), TPH-Motor Oil (C18-C36)> SW6020 (Metals) <Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc> SW8021B/8015Bm (G/MBTEX) SW8270C (SVOCs)	1	Acetate Liner	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	5/20/2014	2 days 2 days 2 days 2 days		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Acetate Liner = Acetate Liner







### Sample Receipt Checklist

Client Name: **CKG Environmental** Date and Time Received: **5/20/2014 1:28:41 PM**  
 Project Name: **Owens Brockway Glass Plant** LogIn Reviewed by: **Maria Venegas**  
 WorkOrder N°: **1405768** Matrix: Soil Carrier: Client Drop-In

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 10.6°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:

Appendix 5  
Excavation C Laboratory Report



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1406907

**Report Created for:** CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

**Project Contact:** Christina Kennedy

**Project P.O.:**

**Project Name:** Underground Facilities Removal, Owens Brockway

**Project Received:** 06/24/2014

Analytical Report reviewed & approved for release on 07/10/2014 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Glossary of Terms & Qualifier Definitions

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**WorkOrder:** 1406907

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

### Analytical Qualifiers

H	samples were analyzed out of holding time
S	spike recovery outside accepted recovery limits
a3	sample diluted due to high organic content.
b1	aqueous sample that contains greater than ~1 vol. % sediment
b6	lighter than water immiscible sheen/product is present
c2	surrogate recovery outside of the control limits due to matrix interference.
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	diesel range compounds are significant; no recognizable pattern
e3	aged diesel is significant
e7	oil range compounds are significant
h4	sulfuric acid permanganate (EPA 3665) cleanup
j1	see attached narrative



## Case Narrative

**Client:** CKG Environmental

**Work Order:** 1406907

**Project:** Underground Facilities Removal, Owens Brockway

June 27, 2014

j1) surrogate recovery is over acceptance limits however, the reported PCB data is Not Detected (ND) therefore, the data is considered acceptable.



## Analytical Report

**Client:** CKG Environmental **WorkOrder:** 1406907  
**Project:** Underground Facilities Removal, Owens Brockway **Extraction Method:** SW3550B  
**Date Received:** 6/24/14 19:30 **Analytical Method:** SW8082  
**Date Prepared:** 6/24/14 **Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC5A	92006

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	06/26/2014 17:22
Aroclor1221	ND	0.050	1	06/26/2014 17:22
Aroclor1232	ND	0.050	1	06/26/2014 17:22
Aroclor1242	ND	0.050	1	06/26/2014 17:22
Aroclor1248	ND	0.050	1	06/26/2014 17:22
Aroclor1254	ND	0.050	1	06/26/2014 17:22
Aroclor1260	ND	0.050	1	06/26/2014 17:22
PCBs, total	ND	0.050	1	06/26/2014 17:22

Surrogates	REC (%)	Limits	Analytical Comments: h4
Decachlorobiphenyl	105	70-130	06/26/2014 17:22

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil	06/24/2014	GC5A	92006

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	06/26/2014 16:45
Aroclor1221	ND	0.050	1	06/26/2014 16:45
Aroclor1232	ND	0.050	1	06/26/2014 16:45
Aroclor1242	ND	0.050	1	06/26/2014 16:45
Aroclor1248	ND	0.050	1	06/26/2014 16:45
Aroclor1254	ND	0.050	1	06/26/2014 16:45
Aroclor1260	ND	0.050	1	06/26/2014 16:45
PCBs, total	ND	0.050	1	06/26/2014 16:45

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: h4,j1
Decachlorobiphenyl	162	S	70-130	06/26/2014 16:45



# Analytical Report

**Client:** CKG Environmental **WorkOrder:** 1406907  
**Project:** Underground Facilities Removal, Owens Brockway **Extraction Method:** SW3510C  
**Date Received:** 6/24/14 19:30 **Analytical Method:** SW8082  
**Date Prepared:** 6/24/14 **Unit:** µg/L

## Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003D	Water	06/24/2014	GC20	92012

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	2.5	5	06/25/2014 23:20
Aroclor1221	ND	2.5	5	06/25/2014 23:20
Aroclor1232	ND	2.5	5	06/25/2014 23:20
Aroclor1242	ND	2.5	5	06/25/2014 23:20
Aroclor1248	ND	2.5	5	06/25/2014 23:20
Aroclor1254	ND	2.5	5	06/25/2014 23:20
Aroclor1260	ND	2.5	5	06/25/2014 23:20
PCBs, total	ND	2.5	5	06/25/2014 23:20

Surrogates	REC (%)	Limits	Analytical Comments: b6,a3,b1
Decachlorobiphenyl	116	70-130	06/25/2014 23:20





## Analytical Report

**Client:** CKG Environmental **WorkOrder:** 1406907  
**Project:** Underground Facilities Removal, Owens Brockway **Extraction Method:** SW5030B  
**Date Received:** 6/24/14 19:30 **Analytical Method:** SW8260B  
**Date Prepared:** 6/24/14-6/30/14 **Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC10	92198
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	07/03/2014 17:56
tert-Amyl methyl ether (TAME)	ND		0.0050	1	07/03/2014 17:56
Benzene	ND		0.0050	1	07/03/2014 17:56
Bromobenzene	ND		0.0050	1	07/03/2014 17:56
Bromochloromethane	ND		0.0050	1	07/03/2014 17:56
Bromodichloromethane	ND		0.0050	1	07/03/2014 17:56
Bromoform	ND		0.0050	1	07/03/2014 17:56
Bromomethane	ND		0.0050	1	07/03/2014 17:56
2-Butanone (MEK)	ND		0.020	1	07/03/2014 17:56
t-Butyl alcohol (TBA)	ND		0.050	1	07/03/2014 17:56
n-Butyl benzene	ND		0.0050	1	07/03/2014 17:56
sec-Butyl benzene	ND		0.0050	1	07/03/2014 17:56
tert-Butyl benzene	ND		0.0050	1	07/03/2014 17:56
Carbon Disulfide	ND		0.0050	1	07/03/2014 17:56
Carbon Tetrachloride	ND		0.0050	1	07/03/2014 17:56
Chlorobenzene	ND		0.0050	1	07/03/2014 17:56
Chloroethane	ND		0.0050	1	07/03/2014 17:56
Chloroform	ND		0.0050	1	07/03/2014 17:56
Chloromethane	ND		0.0050	1	07/03/2014 17:56
2-Chlorotoluene	ND		0.0050	1	07/03/2014 17:56
4-Chlorotoluene	ND		0.0050	1	07/03/2014 17:56
Dibromochloromethane	ND		0.0050	1	07/03/2014 17:56
1,2-Dibromo-3-chloropropane	ND		0.0040	1	07/03/2014 17:56
1,2-Dibromoethane (EDB)	ND		0.0040	1	07/03/2014 17:56
Dibromomethane	ND		0.0050	1	07/03/2014 17:56
1,2-Dichlorobenzene	ND		0.0050	1	07/03/2014 17:56
1,3-Dichlorobenzene	ND		0.0050	1	07/03/2014 17:56
1,4-Dichlorobenzene	ND		0.0050	1	07/03/2014 17:56
Dichlorodifluoromethane	ND		0.0050	1	07/03/2014 17:56
1,1-Dichloroethane	ND		0.0050	1	07/03/2014 17:56
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	07/03/2014 17:56
1,1-Dichloroethene	ND		0.0050	1	07/03/2014 17:56
cis-1,2-Dichloroethene	ND		0.0050	1	07/03/2014 17:56
trans-1,2-Dichloroethene	ND		0.0050	1	07/03/2014 17:56
1,2-Dichloropropane	ND		0.0050	1	07/03/2014 17:56
1,3-Dichloropropane	ND		0.0050	1	07/03/2014 17:56
2,2-Dichloropropane	ND		0.0050	1	07/03/2014 17:56
1,1-Dichloropropene	ND		0.0050	1	07/03/2014 17:56

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# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14-6/30/14

**WorkOrder:** 1406907  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC10	92198
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	07/03/2014 17:56
trans-1,3-Dichloropropene	ND		0.0050	1	07/03/2014 17:56
Diisopropyl ether (DIPE)	ND		0.0050	1	07/03/2014 17:56
Ethylbenzene	ND		0.0050	1	07/03/2014 17:56
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	07/03/2014 17:56
Freon 113	ND		0.10	1	07/03/2014 17:56
Hexachlorobutadiene	ND		0.0050	1	07/03/2014 17:56
Hexachloroethane	ND		0.0050	1	07/03/2014 17:56
2-Hexanone	ND		0.0050	1	07/03/2014 17:56
Isopropylbenzene	ND		0.0050	1	07/03/2014 17:56
4-Isopropyl toluene	ND		0.0050	1	07/03/2014 17:56
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	07/03/2014 17:56
Methylene chloride	<b>0.0051</b>		0.0050	1	07/03/2014 17:56
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	07/03/2014 17:56
Naphthalene	ND		0.0050	1	07/03/2014 17:56
n-Propyl benzene	ND		0.0050	1	07/03/2014 17:56
Styrene	ND		0.0050	1	07/03/2014 17:56
1,1,1,2-Tetrachloroethane	ND		0.0050	1	07/03/2014 17:56
1,1,2,2-Tetrachloroethane	ND		0.0050	1	07/03/2014 17:56
Tetrachloroethene	ND		0.0050	1	07/03/2014 17:56
Toluene	ND		0.0050	1	07/03/2014 17:56
1,2,3-Trichlorobenzene	ND		0.0050	1	07/03/2014 17:56
1,2,4-Trichlorobenzene	ND		0.0050	1	07/03/2014 17:56
1,1,1-Trichloroethane	ND		0.0050	1	07/03/2014 17:56
1,1,2-Trichloroethane	ND		0.0050	1	07/03/2014 17:56
Trichloroethene	ND		0.0050	1	07/03/2014 17:56
Trichlorofluoromethane	ND		0.0050	1	07/03/2014 17:56
1,2,3-Trichloropropane	ND		0.0050	1	07/03/2014 17:56
1,2,4-Trimethylbenzene	ND		0.0050	1	07/03/2014 17:56
1,3,5-Trimethylbenzene	ND		0.0050	1	07/03/2014 17:56
Vinyl Chloride	ND		0.0050	1	07/03/2014 17:56
Xylenes, Total	ND		0.0050	1	07/03/2014 17:56
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	93		70-130		07/03/2014 17:56
Toluene-d8	98		70-130		07/03/2014 17:56
4-BFB	97		70-130		07/03/2014 17:56

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# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14-6/30/14

**WorkOrder:** 1406907  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil	06/24/2014	GC16	91981
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	06/29/2014 19:55
tert-Amyl methyl ether (TAME)	ND		0.0050	1	06/29/2014 19:55
Benzene	ND		0.0050	1	06/29/2014 19:55
Bromobenzene	ND		0.0050	1	06/29/2014 19:55
Bromochloromethane	ND		0.0050	1	06/29/2014 19:55
Bromodichloromethane	ND		0.0050	1	06/29/2014 19:55
Bromoform	ND		0.0050	1	06/29/2014 19:55
Bromomethane	ND		0.0050	1	06/29/2014 19:55
2-Butanone (MEK)	ND		0.020	1	06/29/2014 19:55
t-Butyl alcohol (TBA)	ND		0.050	1	06/29/2014 19:55
n-Butyl benzene	ND		0.0050	1	06/29/2014 19:55
sec-Butyl benzene	ND		0.0050	1	06/29/2014 19:55
tert-Butyl benzene	ND		0.0050	1	06/29/2014 19:55
Carbon Disulfide	ND		0.0050	1	06/29/2014 19:55
Carbon Tetrachloride	ND		0.0050	1	06/29/2014 19:55
Chlorobenzene	ND		0.0050	1	06/29/2014 19:55
Chloroethane	ND		0.0050	1	06/29/2014 19:55
Chloroform	ND		0.0050	1	06/29/2014 19:55
Chloromethane	ND		0.0050	1	06/29/2014 19:55
2-Chlorotoluene	ND		0.0050	1	06/29/2014 19:55
4-Chlorotoluene	ND		0.0050	1	06/29/2014 19:55
Dibromochloromethane	ND		0.0050	1	06/29/2014 19:55
1,2-Dibromo-3-chloropropane	ND		0.0040	1	06/29/2014 19:55
1,2-Dibromoethane (EDB)	ND		0.0040	1	06/29/2014 19:55
Dibromomethane	ND		0.0050	1	06/29/2014 19:55
1,2-Dichlorobenzene	ND		0.0050	1	06/29/2014 19:55
1,3-Dichlorobenzene	ND		0.0050	1	06/29/2014 19:55
1,4-Dichlorobenzene	ND		0.0050	1	06/29/2014 19:55
Dichlorodifluoromethane	ND		0.0050	1	06/29/2014 19:55
1,1-Dichloroethane	ND		0.0050	1	06/29/2014 19:55
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	06/29/2014 19:55
1,1-Dichloroethene	ND		0.0050	1	06/29/2014 19:55
cis-1,2-Dichloroethene	ND		0.0050	1	06/29/2014 19:55
trans-1,2-Dichloroethene	ND		0.0050	1	06/29/2014 19:55
1,2-Dichloropropane	ND		0.0050	1	06/29/2014 19:55
1,3-Dichloropropane	ND		0.0050	1	06/29/2014 19:55
2,2-Dichloropropane	ND		0.0050	1	06/29/2014 19:55
1,1-Dichloropropene	ND		0.0050	1	06/29/2014 19:55

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# Analytical Report

**Client:** CKG Environmental **WorkOrder:** 1406907  
**Project:** Underground Facilities Removal, Owens Brockway **Extraction Method:** SW5030B  
**Date Received:** 6/24/14 19:30 **Analytical Method:** SW8260B  
**Date Prepared:** 6/24/14-6/30/14 **Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil	06/24/2014	GC16	91981
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	06/29/2014 19:55
trans-1,3-Dichloropropene	ND		0.0050	1	06/29/2014 19:55
Diisopropyl ether (DIPE)	ND		0.0050	1	06/29/2014 19:55
Ethylbenzene	ND		0.0050	1	06/29/2014 19:55
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	06/29/2014 19:55
Freon 113	ND		0.10	1	06/29/2014 19:55
Hexachlorobutadiene	ND		0.0050	1	06/29/2014 19:55
Hexachloroethane	ND		0.0050	1	06/29/2014 19:55
2-Hexanone	ND		0.0050	1	06/29/2014 19:55
Isopropylbenzene	ND		0.0050	1	06/29/2014 19:55
4-Isopropyl toluene	ND		0.0050	1	06/29/2014 19:55
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	06/29/2014 19:55
Methylene chloride	ND		0.0050	1	06/29/2014 19:55
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	06/29/2014 19:55
Naphthalene	ND		0.0050	1	06/29/2014 19:55
n-Propyl benzene	ND		0.0050	1	06/29/2014 19:55
Styrene	ND		0.0050	1	06/29/2014 19:55
1,1,1,2-Tetrachloroethane	ND		0.0050	1	06/29/2014 19:55
1,1,2,2-Tetrachloroethane	ND		0.0050	1	06/29/2014 19:55
Tetrachloroethene	ND		0.0050	1	06/29/2014 19:55
Toluene	ND		0.0050	1	06/29/2014 19:55
1,2,3-Trichlorobenzene	ND		0.0050	1	06/29/2014 19:55
1,2,4-Trichlorobenzene	ND		0.0050	1	06/29/2014 19:55
1,1,1-Trichloroethane	ND		0.0050	1	06/29/2014 19:55
1,1,2-Trichloroethane	ND		0.0050	1	06/29/2014 19:55
Trichloroethene	ND		0.0050	1	06/29/2014 19:55
Trichlorofluoromethane	ND		0.0050	1	06/29/2014 19:55
1,2,3-Trichloropropane	ND		0.0050	1	06/29/2014 19:55
1,2,4-Trimethylbenzene	ND		0.0050	1	06/29/2014 19:55
1,3,5-Trimethylbenzene	ND		0.0050	1	06/29/2014 19:55
Vinyl Chloride	ND		0.0050	1	06/29/2014 19:55
Xylenes, Total	ND		0.0050	1	06/29/2014 19:55
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	<u>Analytical Comments:</u> c4,c11	
Dibromofluoromethane	100		70-130		06/29/2014 19:55
Toluene-d8	109		70-130		06/29/2014 19:55
4-BFB	139	S	70-130		06/29/2014 19:55



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 7/4/14

**WorkOrder:** 1406907  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003C	Water	06/24/2014	GC28	92358
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	15		10	1	07/04/2014 15:13
tert-Amyl methyl ether (TAME)	ND		0.50	1	07/04/2014 15:13
Benzene	ND		0.50	1	07/04/2014 15:13
Bromobenzene	ND		0.50	1	07/04/2014 15:13
Bromochloromethane	ND		0.50	1	07/04/2014 15:13
Bromodichloromethane	ND		0.50	1	07/04/2014 15:13
Bromoform	ND		0.50	1	07/04/2014 15:13
Bromomethane	ND		0.50	1	07/04/2014 15:13
2-Butanone (MEK)	3.6		2.0	1	07/04/2014 15:13
t-Butyl alcohol (TBA)	ND		2.0	1	07/04/2014 15:13
n-Butyl benzene	ND		0.50	1	07/04/2014 15:13
sec-Butyl benzene	ND		0.50	1	07/04/2014 15:13
tert-Butyl benzene	ND		0.50	1	07/04/2014 15:13
Carbon Disulfide	ND		0.50	1	07/04/2014 15:13
Carbon Tetrachloride	ND		0.50	1	07/04/2014 15:13
Chlorobenzene	ND		0.50	1	07/04/2014 15:13
Chloroethane	ND		0.50	1	07/04/2014 15:13
Chloroform	ND		0.50	1	07/04/2014 15:13
Chloromethane	ND		0.50	1	07/04/2014 15:13
2-Chlorotoluene	ND		0.50	1	07/04/2014 15:13
4-Chlorotoluene	ND		0.50	1	07/04/2014 15:13
Dibromochloromethane	ND		0.50	1	07/04/2014 15:13
1,2-Dibromo-3-chloropropane	ND		0.20	1	07/04/2014 15:13
1,2-Dibromoethane (EDB)	ND		0.50	1	07/04/2014 15:13
Dibromomethane	ND		0.50	1	07/04/2014 15:13
1,2-Dichlorobenzene	ND		0.50	1	07/04/2014 15:13
1,3-Dichlorobenzene	ND		0.50	1	07/04/2014 15:13
1,4-Dichlorobenzene	ND		0.50	1	07/04/2014 15:13
Dichlorodifluoromethane	ND		0.50	1	07/04/2014 15:13
1,1-Dichloroethane	ND		0.50	1	07/04/2014 15:13
1,2-Dichloroethane (1,2-DCA)	ND		0.50	1	07/04/2014 15:13
1,1-Dichloroethene	ND		0.50	1	07/04/2014 15:13
cis-1,2-Dichloroethene	ND		0.50	1	07/04/2014 15:13
trans-1,2-Dichloroethene	ND		0.50	1	07/04/2014 15:13
1,2-Dichloropropane	ND		0.50	1	07/04/2014 15:13
1,3-Dichloropropane	ND		0.50	1	07/04/2014 15:13
2,2-Dichloropropane	ND		0.50	1	07/04/2014 15:13
1,1-Dichloropropene	ND		0.50	1	07/04/2014 15:13

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# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 7/4/14

**WorkOrder:** 1406907  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003C	Water	06/24/2014	GC28	92358
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.50	1	07/04/2014 15:13
trans-1,3-Dichloropropene	ND		0.50	1	07/04/2014 15:13
Diisopropyl ether (DIPE)	ND		0.50	1	07/04/2014 15:13
Ethylbenzene	ND		0.50	1	07/04/2014 15:13
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/04/2014 15:13
Freon 113	ND		0.50	1	07/04/2014 15:13
Hexachlorobutadiene	ND		0.50	1	07/04/2014 15:13
Hexachloroethane	ND		0.50	1	07/04/2014 15:13
2-Hexanone	ND		0.50	1	07/04/2014 15:13
Isopropylbenzene	ND		0.50	1	07/04/2014 15:13
4-Isopropyl toluene	ND		0.50	1	07/04/2014 15:13
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/04/2014 15:13
Methylene chloride	ND		0.50	1	07/04/2014 15:13
4-Methyl-2-pentanone (MIBK)	<b>0.62</b>		0.50	1	07/04/2014 15:13
Naphthalene	ND		0.50	1	07/04/2014 15:13
n-Propyl benzene	ND		0.50	1	07/04/2014 15:13
Styrene	ND		0.50	1	07/04/2014 15:13
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/04/2014 15:13
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/04/2014 15:13
Tetrachloroethene	ND		0.50	1	07/04/2014 15:13
Toluene	ND		0.50	1	07/04/2014 15:13
1,2,3-Trichlorobenzene	ND		0.50	1	07/04/2014 15:13
1,2,4-Trichlorobenzene	ND		0.50	1	07/04/2014 15:13
1,1,1-Trichloroethane	ND		0.50	1	07/04/2014 15:13
1,1,2-Trichloroethane	ND		0.50	1	07/04/2014 15:13
Trichloroethene	ND		0.50	1	07/04/2014 15:13
Trichlorofluoromethane	ND		0.50	1	07/04/2014 15:13
1,2,3-Trichloropropane	ND		0.50	1	07/04/2014 15:13
1,2,4-Trimethylbenzene	ND		0.50	1	07/04/2014 15:13
1,3,5-Trimethylbenzene	ND		0.50	1	07/04/2014 15:13
Vinyl Chloride	ND		0.50	1	07/04/2014 15:13
Xylenes, Total	ND		0.50	1	07/04/2014 15:13
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> b6,b1	
Dibromofluoromethane	93		70-130	07/04/2014 15:13	
Toluene-d8	91		70-130	07/04/2014 15:13	
4-BFB	88		70-130	07/04/2014 15:13	



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/26/14

**WorkOrder:** 1406907  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC35	92083
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.010	1	06/26/2014 16:17
Acenaphthylene	ND		0.010	1	06/26/2014 16:17
Anthracene	ND		0.010	1	06/26/2014 16:17
Benzo (a) anthracene	ND		0.010	1	06/26/2014 16:17
Benzo (b) fluoranthene	ND		0.010	1	06/26/2014 16:17
Benzo (k) fluoranthene	ND		0.010	1	06/26/2014 16:17
Benzo (g,h,i) perylene	ND		0.010	1	06/26/2014 16:17
Benzo (a) pyrene	ND		0.010	1	06/26/2014 16:17
Chrysene	ND		0.010	1	06/26/2014 16:17
Dibenzo (a,h) anthracene	ND		0.010	1	06/26/2014 16:17
Fluoranthene	ND		0.010	1	06/26/2014 16:17
Fluorene	ND		0.010	1	06/26/2014 16:17
Indeno (1,2,3-cd) pyrene	ND		0.010	1	06/26/2014 16:17
1-Methylnaphthalene	ND		0.010	1	06/26/2014 16:17
2-Methylnaphthalene	ND		0.010	1	06/26/2014 16:17
Naphthalene	ND		0.010	1	06/26/2014 16:17
Phenanthrene	ND		0.010	1	06/26/2014 16:17
Pyrene	ND		0.010	1	06/26/2014 16:17
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: c2	
1-Fluoronaphthalene	132	S	30-130	06/26/2014 16:17	
2-Fluorobiphenyl	129		30-130	06/26/2014 16:17	

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## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/26/14

**WorkOrder:** 1406907  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil	06/24/2014	GC35	92083
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.050	5	06/27/2014 17:23
Acenaphthylene	ND		0.050	5	06/27/2014 17:23
Anthracene	ND		0.050	5	06/27/2014 17:23
Benzo (a) anthracene	ND		0.050	5	06/27/2014 17:23
Benzo (b) fluoranthene	ND		0.050	5	06/27/2014 17:23
Benzo (k) fluoranthene	ND		0.050	5	06/27/2014 17:23
Benzo (g,h,i) perylene	ND		0.050	5	06/27/2014 17:23
Benzo (a) pyrene	ND		0.050	5	06/27/2014 17:23
Chrysene	ND		0.050	5	06/27/2014 17:23
Dibenzo (a,h) anthracene	ND		0.050	5	06/27/2014 17:23
Fluoranthene	ND		0.050	5	06/27/2014 17:23
Fluorene	ND		0.050	5	06/27/2014 17:23
Indeno (1,2,3-cd) pyrene	ND		0.050	5	06/27/2014 17:23
1-Methylnaphthalene	ND		0.050	5	06/27/2014 17:23
2-Methylnaphthalene	ND		0.050	5	06/27/2014 17:23
Naphthalene	ND		0.050	5	06/27/2014 17:23
Phenanthrene	ND		0.050	5	06/27/2014 17:23
Pyrene	ND		0.050	5	06/27/2014 17:23
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: a3	
1-Fluoronaphthalene	124		30-130	06/27/2014 17:23	
2-Fluorobiphenyl	116		30-130	06/27/2014 17:23	





## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/27/14

**WorkOrder:** 1406907  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8270C-SIM  
**Unit:** µg/L

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003E	Water	06/24/2014	GC35	92145
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		25	50	06/30/2014 15:18
Acenaphthylene	ND		25	50	06/30/2014 15:18
Anthracene	ND		25	50	06/30/2014 15:18
Benzo (a) anthracene	ND		25	50	06/30/2014 15:18
Benzo (b) fluoranthene	ND		25	50	06/30/2014 15:18
Benzo (k) fluoranthene	ND		25	50	06/30/2014 15:18
Benzo (g,h,i) perylene	ND		25	50	06/30/2014 15:18
Benzo (a) pyrene	ND		25	50	06/30/2014 15:18
Chrysene	ND		25	50	06/30/2014 15:18
Dibenzo (a,h) anthracene	ND		25	50	06/30/2014 15:18
Fluoranthene	ND		25	50	06/30/2014 15:18
Fluorene	ND		25	50	06/30/2014 15:18
Indeno (1,2,3-cd) pyrene	ND		25	50	06/30/2014 15:18
1-Methylnaphthalene	ND		25	50	06/30/2014 15:18
2-Methylnaphthalene	ND		25	50	06/30/2014 15:18
Naphthalene	ND		25	50	06/30/2014 15:18
Phenanthrene	ND		25	50	06/30/2014 15:18
Pyrene	ND		25	50	06/30/2014 15:18
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: a3,b6,b1	
1-Fluoronaphthalene	72		30-130	06/30/2014 15:18	
2-Fluorobiphenyl	79		30-130	06/30/2014 15:18	



## Analytical Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Extraction Method:</b>	SW5030B
<b>Date Received:</b>	6/24/14 19:30	<b>Analytical Method:</b>	SW8260B
<b>Date Prepared:</b>	6/24/14	<b>Unit:</b>	mg/kg

### TPH(g) by Purge & Trap and GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC16	91981

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	0.25	1	06/29/2014 19:12
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Toluene-d8	94	70-130		06/29/2014 19:12

EXC SS1	1406907-002A	Soil	06/24/2014	GC16	91981
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	0.25	1	06/29/2014 19:55
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Toluene-d8	96	70-130		06/29/2014 19:55



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 7/3/14

**WorkOrder:** 1406907  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## TPH(g) by Purge & Trap and GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003C	Water	06/24/2014	GC28	92358
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
TPH(g)	110		50	1	07/03/2014 22:08
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: b6,b1	
Toluene-d8	95		70-130	07/03/2014 22:08	



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14-6/30/14

**WorkOrder:** 1406907  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC19	91983

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	06/27/2014 04:23
MTBE	ND	0.050	1	06/27/2014 04:23
Benzene	ND	0.0050	1	06/27/2014 04:23
Toluene	ND	0.0050	1	06/27/2014 04:23
Ethylbenzene	ND	0.0050	1	06/27/2014 04:23
Xylenes	ND	0.0050	1	06/27/2014 04:23

Surrogates	REC (%)	Limits	
2-Fluorotoluene	100	70-130	06/27/2014 04:23

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil	06/24/2014	GC7	92222

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	6.5	1.0	1	07/01/2014 16:48
MTBE	ND	0.050	1	07/01/2014 16:48
Benzene	ND	0.0050	1	07/01/2014 16:48
Toluene	ND	0.0050	1	07/01/2014 16:48
Ethylbenzene	ND	0.0050	1	07/01/2014 16:48
Xylenes	0.069	0.0050	1	07/01/2014 16:48

Surrogates	REC (%)	Limits	Analytical Comments: d7
2-Fluorotoluene	117	70-130	07/01/2014 16:48



## Analytical Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Extraction Method:</b>	SW5030B
<b>Date Received:</b>	6/24/14 19:30	<b>Analytical Method:</b>	SW8021B/8015Bm
<b>Date Prepared:</b>	6/26/14	<b>Unit:</b>	µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003A	Water	06/24/2014	GC3	92124
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		50	1	06/26/2014 19:36
MTBE	ND		5.0	1	06/26/2014 19:36
Benzene	ND		0.50	1	06/26/2014 19:36
Toluene	ND		0.50	1	06/26/2014 19:36
Ethylbenzene	ND		0.50	1	06/26/2014 19:36
Xylenes	ND		0.50	1	06/26/2014 19:36
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: b6,b1	
aaa-TFT	100		70-130		06/26/2014 19:36



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14

**WorkOrder:** 1406907  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil/TOTAL	06/24/2014	ICP-MS2	91998

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/26/2014 20:47
Chromium	85	0.50	1	06/26/2014 20:47
Lead	4.0	0.50	1	06/26/2014 20:47
Nickel	130	5.0	10	06/27/2014 16:48
Zinc	52	5.0	1	06/26/2014 20:47
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	91	70-130		06/26/2014 20:47

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil/TOTAL	06/24/2014	ICP-MS2	91998

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/26/2014 20:53
Chromium	61	0.50	1	06/26/2014 20:53
Lead	3.0	0.50	1	06/26/2014 20:53
Nickel	100	5.0	10	06/27/2014 16:55
Zinc	48	5.0	1	06/26/2014 20:53
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	90	70-130		06/26/2014 20:53



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14

**WorkOrder:** 1406907  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L

## LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003F	Water/TOTAL	06/24/2014	ICP-MS2	92010
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	2.9		2.5	10	06/27/2014 00:26
Chromium	140		5.0	10	06/27/2014 00:26
Lead	79		5.0	10	06/27/2014 00:26
Nickel	200		5.0	10	06/27/2014 00:26
Zinc	270		50	10	06/27/2014 00:26
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: b1	
Tb 350.917	100		70-130	06/27/2014 00:26	



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14

**WorkOrder:** 1406907  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS2	1406907-001A	Soil	06/24/2014	GC6A	91975

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	13	1.0	1	07/02/2014 10:48
TPH-Motor Oil (C18-C36)	25	5.0	1	07/02/2014 10:48
Surrogates	REC (%)	Limits	Analytical Comments: e7,e2	
C9	124	70-130	07/02/2014 10:48	

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC SS1	1406907-002A	Soil	06/24/2014	GC2B	92011

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	1400	5.0	5	07/02/2014 08:01
TPH-Motor Oil (C18-C36)	1500	25	5	07/02/2014 08:01
Surrogates	REC (%)	Limits	Analytical Comments: e3	
C9	109	70-130	07/02/2014 08:01	





# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal, Owens Brockway  
**Date Received:** 6/24/14 19:30  
**Date Prepared:** 6/24/14

**WorkOrder:** 1406907  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8015B  
**Unit:** µg/L

## Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXC GW1	1406907-003B	Water	06/24/2014	GC6A	92009

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	69,000	5000	100	07/01/2014 19:58
TPH-Motor Oil (C18-C36)	70,000	25,000	100	07/01/2014 19:58

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2,b6,b1
C9	94	70-130	07/01/2014 19:58



## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/24/14	<b>BatchID:</b> 92006
<b>Date Analyzed:</b> 6/25/14	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC5A	<b>Analytical Method:</b> SW8082
<b>Matrix:</b> Soil	<b>Unit:</b> mg/kg
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92006 1406894-001AMS/MSD

### QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.150	0.050	0.15	-	100	70-130
PCBs, total	ND	-	0.050	-	-	-	-

**Surrogate Recovery**

Decachlorobiphenyl	0.0460	0.0468		0.050	92	94	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	NR	NR	0	ND<2.5	NR	NR	-	NR	

**Surrogate Recovery**

Decachlorobiphenyl	NR	NR	0		NR	NR	-	NR
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/24/14  
**Date Analyzed:** 6/26/14  
**Instrument:** GC20  
**Matrix:** Water  
**Project:** Underground Facilities Removal, Owens Brockway

**WorkOrder:** 1406907  
**BatchID:** 92012  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8082  
**Unit:** µg/L  
**Sample ID:** MB/LCS-92012

### QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.50	-	-	-	-
Aroclor1221	ND	-	0.50	-	-	-	-
Aroclor1232	ND	-	0.50	-	-	-	-
Aroclor1242	ND	-	0.50	-	-	-	-
Aroclor1248	ND	-	0.50	-	-	-	-
Aroclor1254	ND	-	0.50	-	-	-	-
Aroclor1260	ND	3.80	0.50	3.75	-	101	70-130
PCBs, total	ND	-	0.50	-	-	-	-
<b>Surrogate Recovery</b>							
Decachlorobiphenyl	1.38	1.47		1.25	110	117	70-130



# Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	6/30/14	<b>BatchID:</b>	92198
<b>Date Analyzed:</b>	7/1/14	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-92198 1406A98-004AMS/MSD

## QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0389	0.0050	0.050	-	77.8	70-130
Benzene	ND	0.0455	0.0050	0.050	-	91	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.196	0.050	0.20	-	98.1	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0464	0.0050	0.050	-	92.8	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0414	0.0040	0.050	-	82.9	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0450	0.0040	0.050	-	89.9	70-130
1,1-Dichloroethene	ND	0.0328	0.0050	0.050	-	65.5, F2	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/30/14	<b>BatchID:</b> 92198
<b>Date Analyzed:</b> 7/1/14	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC16	<b>Analytical Method:</b> SW8260B
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92198 1406A98-004AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0427	0.0050	0.050	-	85.5	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0421	0.0050	0.050	-	84.2	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0426	0.0050	0.050	-	85.2	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0479	0.0050	0.050	-	95.9	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0460	0.0050	0.050	-	92.1	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

**Surrogate Recovery**

Dibromofluoromethane	0.112	0.147	0.18	90	84	70-130
Toluene-d8	0.121	0.154	0.18	97	88	70-130
4-BFB	0.0124	0.0166	0.018	99	95	70-130

(Cont.)



## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/30/14	<b>BatchID:</b> 92198
<b>Date Analyzed:</b> 7/1/14	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC16	<b>Analytical Method:</b> SW8260B
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92198 1406A98-004AMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0325	0.0335	0.050	ND	65,F1	67.1,F1	70-130	3.12	30
Benzene	0.0367	0.0380	0.050	ND	73.5	76	70-130	3.40	30
t-Butyl alcohol (TBA)	0.161	0.166	0.20	ND	80.4	82.8	70-130	2.89	30
Chlorobenzene	0.0384	0.0396	0.050	ND	76.8	79.1	70-130	2.94	30
1,2-Dibromoethane (EDB)	0.0347	0.0358	0.050	ND	69.5,F1	71.7	70-130	3.11	30
1,2-Dichloroethane (1,2-DCA)	0.0369	0.0380	0.050	ND	73.9	76.1	70-130	2.94	30
1,1-Dichloroethene	0.0274	0.0285	0.050	ND	54.9,F1	57,F1	70-130	3.74	30
Diisopropyl ether (DIPE)	0.0346	0.0360	0.050	ND	69.3,F1	71.9	70-130	3.68	30
Ethyl tert-butyl ether (ETBE)	0.0342	0.0356	0.050	ND	68.4,F1	71.3	70-130	4.10	30
Methyl-t-butyl ether (MTBE)	0.0350	0.0363	0.050	ND	70.1	72.7	70-130	3.63	30
Toluene	0.0397	0.0409	0.050	ND	79.4	81.7	70-130	2.93	30
Trichloroethene	0.0373	0.0385	0.050	ND	74.6	77	70-130	3.12	30
<b>Surrogate Recovery</b>									
Dibromofluoromethane	0.149	0.151	0.18		85	86	70-130	1.27	30
Toluene-d8	0.161	0.162	0.18		92	93	70-130	0.786	30
4-BFB	0.0170	0.0172	0.018		97	98	70-130	1.49	30



# Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	7/3/14	<b>BatchID:</b>	92358
<b>Date Analyzed:</b>	7/3/14	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC28	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-92358 1407098-001BMS/MSD

## QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	17.2	0.50	20	-	85.8	70-130
Benzene	ND	19.4	0.50	20	-	97	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	62.9	2.0	80	-	78.7	70-130
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	19.9	0.50	20	-	99.5	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	16.2	0.50	20	-	80.8	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	16.8	0.50	20	-	83.9	70-130
1,1-Dichloroethene	ND	17.9	0.50	20	-	89.5	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

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# Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	7/3/14	<b>BatchID:</b>	92358
<b>Date Analyzed:</b>	7/3/14	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC28	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-92358 1407098-001BMS/MSD

## QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	17.0	0.50	20	-	85.2	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	17.5	0.50	20	-	87.6	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	17.2	0.50	20	-	86	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	20.1	0.50	20	-	101	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	20.4	0.50	20	-	102	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

### Surrogate Recovery

Dibromofluoromethane	22.9	40.8		45	92	91	70-130
Toluene-d8	22.8	41.7		45	91	93	70-130
4-BFB	2.09	4.16		4.5	84	93	70-130

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## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 7/3/14	<b>BatchID:</b> 92358
<b>Date Analyzed:</b> 7/3/14	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC28	<b>Analytical Method:</b> SW8260B
<b>Matrix:</b> Water	<b>Unit:</b> µg/L
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92358 1407098-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	22.8	21.8	20	ND	114	109	70-130	4.05	20
Benzene	22.3	21.9	20	ND	112	109	70-130	2.15	20
t-Butyl alcohol (TBA)	107	103	80	ND	133,F1	129	70-130	3.25	20
Chlorobenzene	23.2	22.2	20	ND	116	111	70-130	4.04	20
1,2-Dibromoethane (EDB)	20.8	20.4	20	ND	104	102	70-130	1.87	20
1,2-Dichloroethane (1,2-DCA)	20.7	20.4	20	ND	104	102	70-130	1.64	20
1,1-Dichloroethene	19.9	19.4	20	ND	99.6	96.8	70-130	2.82	20
Diisopropyl ether (DIPE)	20.9	20.0	20	ND	105	100	70-130	4.18	20
Ethyl tert-butyl ether (ETBE)	22.6	21.8	20	ND	113	109	70-130	3.49	20
Methyl-t-butyl ether (MTBE)	22.7	22.4	20	ND	113	112	70-130	1.40	20
Toluene	22.7	22.1	20	ND	114	111	70-130	2.57	20
Trichloroethene	23.5	22.7	20	ND	117	113	70-130	3.41	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	43.6	43.2	45		97	96	70-130	0.864	20
Toluene-d8	40.5	40.1	45		90	89	70-130	1.09	20
4-BFB	4.11	4.27	4.5		91	95	70-130	3.73	20



# Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	6/26/14	<b>BatchID:</b>	92083
<b>Date Analyzed:</b>	6/26/14	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC35	<b>Analytical Method:</b>	SW8270C-SIM
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-92083 1406907-001AMS/MSD

## QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.010	-	-	-	-
Acenaphthylene	ND	-	0.010	-	-	-	-
Anthracene	ND	-	0.010	-	-	-	-
Benzo (a) anthracene	ND	-	0.010	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.010	-	-	-	-
Benzo (a) pyrene	ND	0.106	0.010	0.20	-	52.9	30-130
Chrysene	ND	0.156	0.010	0.20	-	78	30-130
Dibenzo (a,h) anthracene	ND	-	0.010	-	-	-	-
Fluoranthene	ND	-	0.010	-	-	-	-
Fluorene	ND	-	0.010	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.010	-	-	-	-
1-Methylnaphthalene	ND	0.165	0.010	0.20	-	82.4	30-130
2-Methylnaphthalene	ND	0.140	0.010	0.20	-	70.2	30-130
Naphthalene	ND	-	0.010	-	-	-	-
Phenanthrene	ND	0.159	0.010	0.20	-	79.3	30-130
Pyrene	ND	0.140	0.010	0.20	-	69.9	30-130

### Surrogate Recovery

1-Fluoronaphthalene	0.631	0.614		0.50	126	123	30-130
2-Fluorobiphenyl	0.643	0.592		0.50	129	118	30-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Benzo (a) pyrene	0.157	0.163	0.20	ND	78.7	81.4	30-130	3.43	30
Chrysene	0.183	0.182	0.20	ND	91.5	90.8	30-130	0.856	30
1-Methylnaphthalene	0.198	0.196	0.20	ND	98.9	97.9	30-130	1.05	30
2-Methylnaphthalene	0.168	0.167	0.20	ND	84	83.7	30-130	0.351	30
Phenanthrene	0.182	0.182	0.20	ND	91.1	90.9	30-130	0.209	30
Pyrene	0.193	0.192	0.20	ND	96.7	95.8	30-130	0.931	30

### Surrogate Recovery

1-Fluoronaphthalene	0.695	0.698	0.50		139,F3	140,F3	30-130	0.431	30
2-Fluorobiphenyl	0.648	0.648	0.50		130	130	30-130	0	30



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/27/14  
**Date Analyzed:** 6/27/14  
**Instrument:** GC35  
**Matrix:** Water  
**Project:** Underground Facilities Removal, Owens Brockway

**WorkOrder:** 1406907  
**BatchID:** 92145  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8270C-SIM  
**Unit:** µg/L  
**Sample ID:** MB/LCS-92145

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.50	-	-	-	-
Acenaphthylene	ND	-	0.50	-	-	-	-
Anthracene	ND	-	0.50	-	-	-	-
Benzo (a) anthracene	ND	-	0.50	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.50	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.50	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.50	-	-	-	-
Benzo (a) pyrene	ND	4.40	0.50	10	-	44	30-130
Chrysene	ND	5.96	0.50	10	-	59.6	30-130
Dibenzo (a,h) anthracene	ND	-	0.50	-	-	-	-
Fluoranthene	ND	-	0.50	-	-	-	-
Fluorene	ND	-	0.50	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.50	-	-	-	-
1-Methylnaphthalene	ND	6.35	0.50	10	-	63.5	30-130
2-Methylnaphthalene	ND	5.60	0.50	10	-	56	30-130
Naphthalene	ND	-	0.50	-	-	-	-
Phenanthrene	ND	6.08	0.50	10	-	60.8	30-130
Pyrene	ND	5.88	0.50	10	-	58.8	30-130
<b>Surrogate Recovery</b>							
1-Fluoronaphthalene	20.0	21.5		25	80	86	30-130
2-Fluorobiphenyl	18.6	19.8		25	74	79	30-130



# Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	6/24/14	<b>BatchID:</b>	91983
<b>Date Analyzed:</b>	6/24/14	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC19	<b>Analytical Method:</b>	SW8021B/8015Bm
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-91983 1406829-001AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.552	0.40	0.60	-	92	70-130
MTBE	ND	0.0929	0.050	0.10	-	92.9	70-130
Benzene	ND	0.106	0.0050	0.10	-	107	70-130
Toluene	ND	0.107	0.0050	0.10	-	107	70-130
Ethylbenzene	ND	0.107	0.0050	0.10	-	107	70-130
Xylenes	ND	0.335	0.0050	0.30	-	112	70-130

### Surrogate Recovery

2-Fluorotoluene	0.108	0.110		0.10	108	109	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.564	0.568	0.60	ND	93.9	94.6	70-130	0.719	20
MTBE	0.0871	0.0929	0.10	ND	87.1	92.9	70-130	6.49	20
Benzene	0.101	0.109	0.10	ND	101	109	70-130	7.38	20
Toluene	0.103	0.111	0.10	ND	103	111	70-130	8.08	20
Ethylbenzene	0.103	0.110	0.10	ND	103	110	70-130	6.53	20
Xylenes	0.325	0.345	0.30	ND	108	115	70-130	6.19	20

### Surrogate Recovery

2-Fluorotoluene	0.100	0.109	0.10		100	109	70-130	8.21	20
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# Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/30/14	<b>BatchID:</b> 92222
<b>Date Analyzed:</b> 7/1/14	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC19	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92222 1406B25-001AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.572	0.40	0.60	-	95.3	70-130
MTBE	ND	0.0855	0.050	0.10	-	85.5	70-130
Benzene	ND	0.108	0.0050	0.10	-	108	70-130
Toluene	ND	0.109	0.0050	0.10	-	109	70-130
Ethylbenzene	ND	0.109	0.0050	0.10	-	109	70-130
Xylenes	ND	0.344	0.0050	0.30	-	115	70-130

### Surrogate Recovery

2-Fluorotoluene	0.112	0.110		0.10	112	110	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.494	0.509	0.60	ND	82.3	84.9	70-130	3.11	20
MTBE	0.0854	0.0851	0.10	ND	85.4	85.1	70-130	0.341	20
Benzene	0.0976	0.105	0.10	ND	97.6	105	70-130	7.43	20
Toluene	0.0990	0.106	0.10	ND	99	106	70-130	6.92	20
Ethylbenzene	0.0989	0.105	0.10	ND	98.9	105	70-130	6.18	20
Xylenes	0.316	0.331	0.30	ND	105	110	70-130	4.47	20

### Surrogate Recovery

2-Fluorotoluene	0.0965	0.106	0.10		96	106	70-130	9.26	20
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# Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	6/27/14	<b>BatchID:</b>	92124
<b>Date Analyzed:</b>	6/26/14	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC3	<b>Analytical Method:</b>	SW8021B/8015Bm
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-92124 1406978-002AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	61.6	40	60	-	103	70-130
MTBE	ND	11.5	5.0	10	-	115	70-130
Benzene	ND	10.2	0.50	10	-	103	70-130
Toluene	ND	10.3	0.50	10	-	103	70-130
Ethylbenzene	ND	10.3	0.50	10	-	103	70-130
Xylenes	ND	31.4	0.50	30	-	105	70-130

**Surrogate Recovery**

aaa-TFT_2	9.72	9.44		10	97	94	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	58.4	56.8	60	ND	97.3	94.7	70-130	2.70	20
MTBE	9.67	9.50	10	ND	96.7	95	70-130	1.84	20
Benzene	10.3	9.90	10	ND	103	99	70-130	4.30	20
Toluene	10.4	9.92	10	ND	104	99.2	70-130	4.47	20
Ethylbenzene	10.4	9.97	10	ND	104	99.7	70-130	4.41	20
Xylenes	31.6	30.2	30	ND	105	101	70-130	4.67	20

**Surrogate Recovery**

aaa-TFT_2	9.94	9.91	10		99	99	70-130	0	20
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## Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	6/24/14	<b>BatchID:</b>	91998
<b>Date Analyzed:</b>	6/25/14	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS2	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-91998 1406875-001AMS/MSD

### QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	51.3	0.25	50	-	103	75-125
Chromium	ND	53.6	0.50	50	-	107	75-125
Lead	ND	52.2	0.50	50	-	104	75-125
Nickel	ND	53.0	0.50	50	-	106	75-125
Zinc	ND	525	5.0	500	-	105	75-125
<b>Surrogate Recovery</b>							
Tb 350.917	489	488		500	98	98	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	52.7	52.0	50	ND	105	104	75-125	1.43	20
Chromium	74.9	85.7	50	28.35	93.2	115	75-125	13.4	20
Lead	59.2	60.6	50	5.676	107	110	75-125	2.34	20
Nickel	96.8	109	50	46.87	99.8	124	75-125	11.8	20
Zinc	565	556	500	31.84	107	105	75-125	1.57	20
<b>Surrogate Recovery</b>									
Tb 350.917	503	502	500		101	100	70-130	0.139	20



## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/24/14	<b>BatchID:</b> 92010
<b>Date Analyzed:</b> 6/25/14	<b>Extraction Method:</b> E200.8
<b>Instrument:</b> ICP-MS2	<b>Analytical Method:</b> E200.8
<b>Matrix:</b> Water	<b>Unit:</b> µg/L
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92010 1406907-003FMS/MSD

### QC Summary Report for E200.8

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	46.8	0.25	50	-	93.6	85-115
Chromium	ND	49.1	0.50	50	-	98.2	85-115
Lead	ND	47.8	0.50	50	-	95.6	85-115
Nickel	ND	48.6	0.50	50	-	97.2	85-115
Zinc	ND	490	5.0	500	-	98	85-115

**Surrogate Recovery**

Tb 350.917	694	686		750	93	91	70-130
------------	-----	-----	--	-----	----	----	--------

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	NR	NR	0	2.9	NR	NR	-	NR	
Chromium	NR	NR	0	140	NR	NR	-	NR	
Lead	NR	NR	0	79	NR	NR	-	NR	
Nickel	NR	NR	0	200	NR	NR	-	NR	
Zinc	NR	NR	0	270	NR	NR	-	NR	

**Surrogate Recovery**

Tb 350.917	NR	NR	0		NR	NR	-	NR
------------	----	----	---	--	----	----	---	----





## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/24/14	<b>BatchID:</b> 91975
<b>Date Analyzed:</b> 6/25/14	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC11A, GC11B	<b>Analytical Method:</b> SW8015B
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-91975 1406869-002AMS/MSD

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	43.7	1.0	40	-	109	70-130
<b>Surrogate Recovery</b>							
C9	25.2	27.9		25	101	112	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	41.6	42.6	40	2.096	98.7	101	70-130	2.51	30
<b>Surrogate Recovery</b>									
C9	24.9	25.4	25		100	102	70-130	1.88	30

(Cont.)



## Quality Control Report

<b>Client:</b> CKG Environmental	<b>WorkOrder:</b> 1406907
<b>Date Prepared:</b> 6/24/14	<b>BatchID:</b> 92011
<b>Date Analyzed:</b> 6/26/14	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC6B	<b>Analytical Method:</b> SW8015B
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b> MB/LCS-92011 1406907-002AMS/MSD

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	40.0	1.0	40	-	100	70-130
<b>Surrogate Recovery</b>							
C9	25.8	24.8		25	103	99	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR	0	1400	NR	NR	-	NR	
<b>Surrogate Recovery</b>									
C9	NR	NR	0		NR	NR	-	NR	



## Quality Control Report

<b>Client:</b>	CKG Environmental	<b>WorkOrder:</b>	1406907
<b>Date Prepared:</b>	6/24/14	<b>BatchID:</b>	92009
<b>Date Analyzed:</b>	6/26/14	<b>Extraction Method:</b>	SW3510C
<b>Instrument:</b>	GC6A	<b>Analytical Method:</b>	SW8015B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Underground Facilities Removal, Owens Brockway	<b>Sample ID:</b>	MB/LCS-92009

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	965	50	1000	-	96.5	70-130
<b>Surrogate Recovery</b>							
C9	579	550		625	93	88	70-130



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1406907

ClientCode: CKGS

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Christina Kennedy  
CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574  
(707) 967-8080    FAX: (707) 967-8080

Email: ckennedy@geologist.com  
cc/3rd Party:  
PO:  
ProjectNo: Underground Facilities Removal, Owens  
Brockway

**Bill to:**

Accounts Payable  
CKG Environmental  
808 Zinfindel Lane  
St. Helena, CA 94574

**Requested TAT:**

**5 days**

**Date Received: 06/24/2014**

**Date Printed: 06/24/2014**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1406907-001	EXC SS2	Soil	6/24/2014	<input type="checkbox"/>	A		A		A		A		A		A	
1406907-002	EXC SS1	Soil	6/24/2014	<input type="checkbox"/>	A		A		A		A		A		A	
1406907-003	EXC GW1	Water	6/24/2014	<input type="checkbox"/>		D		E		C		A		F		B

**Test Legend:**

1	8082A_PCB_S	2	8082A_PCB_W	3	8270D-PNA_S	4	8270D-PNA_W	5	GAS8260_S
6	GAS8260_W	7	G-MBTEX_S	8	G-MBTEX_W	9	LUFTMS_S	10	LUFTMS_W
11	TPH(DMO)_S	12	TPH(DMO)_W						

The following SamplIDs: 001A, 002A, 003C contain testgroup.

**Prepared by: Ana Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL

**QC Level:** LEVEL 2

**Work Order:** 1406907

**Project:** Underground Facilities Removal, Owens Brockway

**Client Contact:** Christina Kennedy

**Date Received:** 6/24/2014

**Comments:**

**Contact's Email:** ckennedy@geologist.com

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut		
1406907-001A	EXC SS2	Soil	SW8015B (Diesel & Motor Oil)	2	Big Brass Tube	<input type="checkbox"/>	6/24/2014	5 days		<input type="checkbox"/>			
			SW6020 (LUFT) <Cadmium, Chromium, Lead, Nickel, Zinc>			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			TPH(g) & 8260 (Basic List) by P&T GCMS			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8082 (PCBs Only)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1406907-002A	EXC SS1	Soil	SW8015B (Diesel & Motor Oil)	2	Big Brass Tube	<input type="checkbox"/>	6/24/2014	5 days		<input type="checkbox"/>			
			SW6020 (LUFT) <Cadmium, Chromium, Lead, Nickel, Zinc>			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8021B/8015Bm (G/MBTEX)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			TPH(g) & 8260 (Basic List) by P&T GCMS			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8082 (PCBs Only)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1406907-003A	EXC GW1	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	6/24/2014	5 days	1%+	<input type="checkbox"/>			
1406907-003B	EXC GW1	Water	SW8015B (Diesel & Motor Oil)	2	VOA w/ HCl	<input type="checkbox"/>	6/24/2014	5 days	1%+	<input type="checkbox"/>			
1406907-003C	EXC GW1	Water	TPH(g) & 8260 (Basic List) by P&T GCMS	2	VOA w/ HCl	<input type="checkbox"/>	6/24/2014	5 days	1%+	<input type="checkbox"/>			

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Big Brass Tube =  
 1LA = 1L Amber Glass Jar, Unpreserved  
 250mL HDPE w/ HNO3 = 250mL HDPE Bottle w/ HNO3

aVOA = 43mL Amber VOA, Unpreserved  
 VOA w/ HCl = 43mL VOA w/ HCl



## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL

**QC Level:** LEVEL 2

**Work Order:** 1406907

**Project:** Underground Facilities Removal, Owens Brockway

**Client Contact:** Christina Kennedy

**Date Received:** 6/24/2014

**Comments:**

**Contact's Email:** ckennedy@geologist.com

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1406907-003D	EXC GW1	Water	SW8082 (PCBs Only)	2	aVOA	<input type="checkbox"/>	6/24/2014	5 days	1%+	<input type="checkbox"/>	
1406907-003E	EXC GW1	Water	SW8270C (PAHs/PNAs)	1	1LA	<input type="checkbox"/>	6/24/2014	5 days	1%+	<input type="checkbox"/>	
1406907-003F	EXC GW1	Water	E200.8 (LUFT)	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	6/24/2014	5 days	1%+	<input type="checkbox"/>	

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Big Brass Tube =

1LA = 1L Amber Glass Jar, Unpreserved

250mL HDPE w/ HNO3 = 250mL HDPE Bottle w/ HNO3

aVOA = 43mL Amber VOA, Unpreserved

VOA w/ HCl = 43mL VOA w/ HCl







### Sample Receipt Checklist

Client Name: **CKG Environmental** Date and Time Received: **6/24/2014 7:30:37 PM**  
 Project Name: **Underground Facilities Removal, Owens Brockway** Login Reviewed by: **Ana Venegas**  
 WorkOrder No: **1406907** Matrix: Soil/Water Carrier: Rob Pringle (MAI Courier)

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 4.6°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments: water had to have the pH adjusted for metals



Appendix 6  
Excavation E Laboratory Report



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1406632

**Report Created for:** CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

**Project Contact:** Christina Kennedy  
**Project P.O.:**  
**Project Name:** Underground facilities Removal

**Project Received:** 06/17/2014

Analytical Report reviewed & approved for release on 06/24/2014 by:

Question about  
your data?

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Glossary of Terms & Qualifier Definitions

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**WorkOrder:** 1406632

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

### Analytical Qualifiers

S	spike recovery outside accepted recovery limits
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	no recognizable pattern
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant
h4	sulfuric acid permanganate (EPA 3665) cleanup

### Quality Control Qualifiers

F3	the surrogate standard recovery is outside of acceptance limits.
----	--



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406632  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8082  
**Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil	06/12/2014 09:30	GC5A	91660

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	10	06/20/2014 17:31
Aroclor1221	ND	0.50	10	06/20/2014 17:31
Aroclor1232	ND	0.50	10	06/20/2014 17:31
Aroclor1242	ND	0.50	10	06/20/2014 17:31
Aroclor1248	ND	0.50	10	06/20/2014 17:31
Aroclor1254	ND	0.50	10	06/20/2014 17:31
Aroclor1260	ND	0.50	10	06/20/2014 17:31
PCBs, total	ND	0.50	10	06/20/2014 17:31

Surrogates	REC (%)	Limits	Analytical Comments: h4
Decachlorobiphenyl	76	70-130	06/20/2014 17:31



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406632  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil	06/12/2014 09:30	GC10	91713
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		5.0	50	06/19/2014 17:04
tert-Amyl methyl ether (TAME)	ND		0.25	50	06/19/2014 17:04
Benzene	ND		0.25	50	06/19/2014 17:04
Bromobenzene	ND		0.25	50	06/19/2014 17:04
Bromochloromethane	ND		0.25	50	06/19/2014 17:04
Bromodichloromethane	ND		0.25	50	06/19/2014 17:04
Bromoform	ND		0.25	50	06/19/2014 17:04
Bromomethane	ND		0.25	50	06/19/2014 17:04
2-Butanone (MEK)	ND		1.0	50	06/19/2014 17:04
t-Butyl alcohol (TBA)	ND		2.5	50	06/19/2014 17:04
n-Butyl benzene	0.27		0.25	50	06/19/2014 17:04
sec-Butyl benzene	0.50		0.25	50	06/19/2014 17:04
tert-Butyl benzene	ND		0.25	50	06/19/2014 17:04
Carbon Disulfide	ND		0.25	50	06/19/2014 17:04
Carbon Tetrachloride	ND		0.25	50	06/19/2014 17:04
Chlorobenzene	ND		0.25	50	06/19/2014 17:04
Chloroethane	ND		0.25	50	06/19/2014 17:04
Chloroform	ND		0.25	50	06/19/2014 17:04
Chloromethane	ND		0.25	50	06/19/2014 17:04
2-Chlorotoluene	ND		0.25	50	06/19/2014 17:04
4-Chlorotoluene	ND		0.25	50	06/19/2014 17:04
Dibromochloromethane	ND		0.25	50	06/19/2014 17:04
1,2-Dibromo-3-chloropropane	ND		0.20	50	06/19/2014 17:04
1,2-Dibromoethane (EDB)	ND		0.20	50	06/19/2014 17:04
Dibromomethane	ND		0.25	50	06/19/2014 17:04
1,2-Dichlorobenzene	ND		0.25	50	06/19/2014 17:04
1,3-Dichlorobenzene	ND		0.25	50	06/19/2014 17:04
1,4-Dichlorobenzene	ND		0.25	50	06/19/2014 17:04
Dichlorodifluoromethane	ND		0.25	50	06/19/2014 17:04
1,1-Dichloroethane	ND		0.25	50	06/19/2014 17:04
1,2-Dichloroethane (1,2-DCA)	ND		0.20	50	06/19/2014 17:04
1,1-Dichloroethene	ND		0.25	50	06/19/2014 17:04
cis-1,2-Dichloroethene	ND		0.25	50	06/19/2014 17:04
trans-1,2-Dichloroethene	ND		0.25	50	06/19/2014 17:04
1,2-Dichloropropane	ND		0.25	50	06/19/2014 17:04
1,3-Dichloropropane	ND		0.25	50	06/19/2014 17:04
2,2-Dichloropropane	ND		0.25	50	06/19/2014 17:04
1,1-Dichloropropene	ND		0.25	50	06/19/2014 17:04

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406632  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil	06/12/2014 09:30	GC10	91713
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.25	50	06/19/2014 17:04
trans-1,3-Dichloropropene	ND		0.25	50	06/19/2014 17:04
Diisopropyl ether (DIPE)	ND		0.25	50	06/19/2014 17:04
Ethylbenzene	ND		0.25	50	06/19/2014 17:04
Ethyl tert-butyl ether (ETBE)	ND		0.25	50	06/19/2014 17:04
Freon 113	ND		5.0	50	06/19/2014 17:04
Hexachlorobutadiene	ND		0.25	50	06/19/2014 17:04
Hexachloroethane	ND		0.25	50	06/19/2014 17:04
2-Hexanone	ND		0.25	50	06/19/2014 17:04
Isopropylbenzene	ND		0.25	50	06/19/2014 17:04
4-Isopropyl toluene	ND		0.25	50	06/19/2014 17:04
Methyl-t-butyl ether (MTBE)	ND		0.25	50	06/19/2014 17:04
Methylene chloride	ND		0.25	50	06/19/2014 17:04
4-Methyl-2-pentanone (MIBK)	ND		0.25	50	06/19/2014 17:04
Naphthalene	ND		0.25	50	06/19/2014 17:04
n-Propyl benzene	ND		0.25	50	06/19/2014 17:04
Styrene	ND		0.25	50	06/19/2014 17:04
1,1,1,2-Tetrachloroethane	ND		0.25	50	06/19/2014 17:04
1,1,2,2-Tetrachloroethane	ND		0.25	50	06/19/2014 17:04
Tetrachloroethene	ND		0.25	50	06/19/2014 17:04
Toluene	ND		0.25	50	06/19/2014 17:04
1,2,3-Trichlorobenzene	ND		0.25	50	06/19/2014 17:04
1,2,4-Trichlorobenzene	ND		0.25	50	06/19/2014 17:04
1,1,1-Trichloroethane	ND		0.25	50	06/19/2014 17:04
1,1,2-Trichloroethane	ND		0.25	50	06/19/2014 17:04
Trichloroethene	ND		0.25	50	06/19/2014 17:04
Trichlorofluoromethane	ND		0.25	50	06/19/2014 17:04
1,2,3-Trichloropropane	ND		0.25	50	06/19/2014 17:04
1,2,4-Trimethylbenzene	ND		0.25	50	06/19/2014 17:04
1,3,5-Trimethylbenzene	ND		0.25	50	06/19/2014 17:04
Vinyl Chloride	ND		0.25	50	06/19/2014 17:04
Xylenes, Total	ND		0.25	50	06/19/2014 17:04
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	103		70-130		06/19/2014 17:04
Toluene-d8	96		70-130		06/19/2014 17:04
4-BFB	115		70-130		06/19/2014 17:04



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406632  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil	06/12/2014 09:30	GC35	91782

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	1.3	1.0	100	06/23/2014 16:20
Acenaphthylene	ND	1.0	100	06/23/2014 16:20
Anthracene	ND	1.0	100	06/23/2014 16:20
Benzo (a) anthracene	1.1	1.0	100	06/23/2014 16:20
Benzo (b) fluoranthene	ND	1.0	100	06/23/2014 16:20
Benzo (k) fluoranthene	ND	1.0	100	06/23/2014 16:20
Benzo (g,h,i) perylene	ND	1.0	100	06/23/2014 16:20
Benzo (a) pyrene	ND	1.0	100	06/23/2014 16:20
Chrysene	ND	1.0	100	06/23/2014 16:20
Dibenzo (a,h) anthracene	ND	1.0	100	06/23/2014 16:20
Fluoranthene	ND	1.0	100	06/23/2014 16:20
Fluorene	2.5	1.0	100	06/23/2014 16:20
Indeno (1,2,3-cd) pyrene	ND	1.0	100	06/23/2014 16:20
1-Methylnaphthalene	2.7	1.0	100	06/23/2014 16:20
2-Methylnaphthalene	ND	1.0	100	06/23/2014 16:20
Naphthalene	ND	1.0	100	06/23/2014 16:20
Phenanthrene	3.3	1.0	100	06/23/2014 16:20
Pyrene	ND	1.0	100	06/23/2014 16:20
Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: c1
1-Fluoronaphthalene	551	S	30-130	06/23/2014 16:20
2-Fluorobiphenyl	246	S	30-130	06/23/2014 16:20



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406632  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil	06/12/2014 09:30	GC19	91686
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	750		20	20	06/19/2014 14:04
MTBE	---		1.0	20	06/19/2014 14:04
Benzene	---		0.10	20	06/19/2014 14:04
Toluene	---		0.10	20	06/19/2014 14:04
Ethylbenzene	---		0.10	20	06/19/2014 14:04
Xylenes	---		0.10	20	06/19/2014 14:04
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7,d9	
2-Fluorotoluene	83		70-130		06/19/2014 14:04





# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406632  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil/TOTAL	06/12/2014 09:30	ICP-MS1	91687
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		0.25	1	06/19/2014 01:09
Chromium	140		5.0	10	06/19/2014 22:30
Lead	3.6		0.50	1	06/19/2014 01:09
Nickel	220		5.0	10	06/19/2014 22:30
Zinc	38		5.0	1	06/19/2014 01:09
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	122		70-130		06/19/2014 01:09



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground facilities Removal  
**Date Received:** 6/17/14 18:27  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406632  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE-SS1	1406632-001A	Soil	06/12/2014 09:30	GC11A	91712

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	11,000	1000	1000	06/23/2014 20:10
TPH-Motor Oil (C18-C36)	12,000	5000	1000	06/23/2014 20:10

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	115	70-130	06/23/2014 20:10



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/16/14  
**Date Analyzed:** 6/16/14  
**Instrument:** GC5A  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91660  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8082  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-91660  
 1406580-001AMS/MSD

## QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.171	0.050	0.15	-	114	70-130
PCBs, total	ND	-	0.050	-	-	-	-

**Surrogate Recovery**

Decachlorobiphenyl	0.0545	0.0558		0.050	109	112	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	0.193	0.192	0.15	ND	128	128	70-130	0	30

**Surrogate Recovery**

Decachlorobiphenyl	0.0599	0.0573	0.050		120	115	70-130	4.37	30
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# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91713  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91713  
 1406632-001AMS/MSD

## QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0428	0.0050	0.050	-	85.5	70-130
Benzene	ND	0.0483	0.0050	0.050	-	96.5	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.179	0.050	0.20	-	89.4	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0474	0.0050	0.050	-	94.7	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0464	0.0040	0.050	-	92.7	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0446	0.0040	0.050	-	89.2	70-130
1,1-Dichloroethene	ND	0.0383	0.0050	0.050	-	76.6	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91713  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91713  
 1406632-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0460	0.0050	0.050	-	92	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0456	0.0050	0.050	-	91.2	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0448	0.0050	0.050	-	89.6	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0497	0.0050	0.050	-	99.4	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0495	0.0050	0.050	-	99.1	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	0.122	0.185		0.18	98	106	70-130
Toluene-d8	0.132	0.177		0.18	106	101	70-130
4-BFB	0.0134	0.0178		0.018	107	102	70-130

(Cont.)



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91713  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91713  
 1406632-001AMS/MSD

## QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	NR	NR	0	ND<0.25	NR	NR	-	NR	
Benzene	NR	NR	0	ND<0.25	NR	NR	-	NR	
t-Butyl alcohol (TBA)	NR	NR	0	ND<2.5	NR	NR	-	NR	
Chlorobenzene	NR	NR	0	ND<0.25	NR	NR	-	NR	
1,2-Dibromoethane (EDB)	NR	NR	0	ND<0.2	NR	NR	-	NR	
1,2-Dichloroethane (1,2-DCA)	NR	NR	0	ND<0.2	NR	NR	-	NR	
1,1-Dichloroethene	NR	NR	0	ND<0.25	NR	NR	-	NR	
Diisopropyl ether (DIPE)	NR	NR	0	ND<0.25	NR	NR	-	NR	
Ethyl tert-butyl ether (ETBE)	NR	NR	0	ND<0.25	NR	NR	-	NR	
Methyl-t-butyl ether (MTBE)	NR	NR	0	ND<0.25	NR	NR	-	NR	
Toluene	NR	NR	0	ND<0.25	NR	NR	-	NR	
Trichloroethene	NR	NR	0	ND<0.25	NR	NR	-	NR	
<b>Surrogate Recovery</b>									
Dibromofluoromethane	NR	NR	0		NR	NR	-	NR	
Toluene-d8	NR	NR	0		NR	NR	-	NR	
4-BFB	NR	NR	0		NR	NR	-	NR	



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC35  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91782  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-91782  
 1406662-001AMS/MSD

## QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.010	-	-	-	-
Acenaphthylene	ND	-	0.010	-	-	-	-
Anthracene	ND	-	0.010	-	-	-	-
Benzo (a) anthracene	ND	-	0.010	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.010	-	-	-	-
Benzo (a) pyrene	ND	0.134	0.010	0.20	-	66.9	30-130
Chrysene	ND	0.173	0.010	0.20	-	86.7	30-130
Dibenzo (a,h) anthracene	ND	-	0.010	-	-	-	-
Fluoranthene	ND	-	0.010	-	-	-	-
Fluorene	ND	-	0.010	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.010	-	-	-	-
1-Methylnaphthalene	ND	0.179	0.010	0.20	-	89.6	30-130
2-Methylnaphthalene	ND	0.156	0.010	0.20	-	77.8	30-130
Naphthalene	ND	-	0.010	-	-	-	-
Phenanthrene	ND	0.173	0.010	0.20	-	86.6	30-130
Pyrene	ND	0.166	0.010	0.20	-	82.8	30-130

### Surrogate Recovery

1-Fluoronaphthalene	0.648	0.650		0.50	130	130	30-130
2-Fluorobiphenyl	0.646	0.638		0.50	129	128	30-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Benzo (a) pyrene	0.271	0.274	0.20	0.01765	126	128	30-130	1.11	30
Chrysene	0.228	0.225	0.20	0.02770	100	98.6	30-130	1.46	30
1-Methylnaphthalene	0.221	0.222	0.20	ND	111	111	30-130	0	30
2-Methylnaphthalene	0.197	0.196	0.20	ND	98.4	98.2	30-130	0.186	30
Phenanthrene	0.254	0.248	0.20	0.06491	94.4	91.7	30-130	2.21	30
Pyrene	0.322	0.322	0.20	0.09370	114	114	30-130	0	30

### Surrogate Recovery

1-Fluoronaphthalene	0.725	0.715	0.50		145,F3	143,F3	30-130	1.34	30
2-Fluorobiphenyl	0.696	0.679	0.50		139,F3	136,F3	30-130	2.36	30



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/17/14  
**Instrument:** GC19  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91686  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91686  
 1406599-010AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.578	0.40	0.60	-	96.3	70-130
MTBE	ND	0.0948	0.050	0.10	-	94.8	70-130
Benzene	ND	0.112	0.0050	0.10	-	112	70-130
Toluene	ND	0.114	0.0050	0.10	-	114	70-130
Ethylbenzene	ND	0.115	0.0050	0.10	-	115	70-130
Xylenes	ND	0.354	0.0050	0.30	-	118	70-130

### Surrogate Recovery

2-Fluorotoluene	0.108	0.114		0.10	108	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.568	0.602	0.60	ND	94.6	100	70-130	5.88	20
MTBE	0.0969	0.0927	0.10	ND	96.9	92.7	70-130	4.44	20
Benzene	0.0960	0.0952	0.10	ND	96	95.2	70-130	0.818	20
Toluene	0.0997	0.100	0.10	ND	99.7	100	70-130	0.283	20
Ethylbenzene	0.100	0.102	0.10	ND	100	102	70-130	1.57	20
Xylenes	0.315	0.319	0.30	ND	105	106	70-130	1.21	20

### Surrogate Recovery

2-Fluorotoluene	0.0989	0.100	0.10		99	100	70-130	1.11	20
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/18/14  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91687  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91687  
 1406599-010AMS/MSD

### QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	55.0	0.25	50	-	110	75-125
Chromium	ND	55.4	0.50	50	-	111	75-125
Lead	ND	54.9	0.50	50	-	110	75-125
Nickel	ND	54.9	0.50	50	-	110	75-125
Zinc	ND	555	5.0	500	-	111	75-125

**Surrogate Recovery**

Tb 350.917	566	551		500	113	110	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	52.2	54.5	50	ND	104	109	75-125	4.37	20
Chromium	95.2	99.7	50	40.12	110	119	75-125	4.55	20
Lead	NR	NR	50	141.1	NR	NR	75-125	NR	20
Nickel	91.4	95.2	50	37.75	107	115	75-125	4.04	20
Zinc	597	637	500	202.3	79	87	75-125	6.48	20

**Surrogate Recovery**

Tb 350.917	527	551	500		105	110	70-130	4.42	20
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC11A, GC2B  
**Matrix:** Soil  
**Project:** Underground facilities Removal

**WorkOrder:** 1406632  
**BatchID:** 91712  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91712  
 1406632-001AMS/MSD

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	46.4	1.0	40	-	116	70-130
<b>Surrogate Recovery</b>							
C9	24.4	27.2		25	98	109	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR	0	11000	NR	NR	-	NR	
<b>Surrogate Recovery</b>									
C9	NR	NR	0		NR	NR	-	NR	



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1406632

ClientCode: CKGS

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Christina Kennedy  
 CKG Environmental  
 P.O. Box 246  
 St. Helena, CA 94574  
 (707) 967-8080    FAX: (707) 967-8080

Email: ckennedy@geologist.com  
 cc/3rd Party:  
 PO:  
 ProjectNo: Underground facilities Removal

**Bill to:**  
 Accounts Payable  
 CKG Environmental  
 808 Zinfindel Lane  
 St. Helena, CA 94574

**Requested TAT: 5 days**  
  
**Date Received: 06/17/2014**  
**Date Printed: 06/18/2014**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1406632-001	EXE-SS1	Soil	6/12/2014 9:30	<input type="checkbox"/>	A	A	A	A	A								

**Test Legend:**

1	8082A_PCB_S	2	8260B_S	3	8270D-PNA_S	4	G-MBTEX_S	5	LUFTMS_S
6		7		8		9		10	
11		12							

The following SampID: 001A contains testgroup.

**Prepared by:** \_\_\_\_\_

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL  
**Project:** Underground facilities Removal  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Christina Kennedy  
**Contact's Email:** ckennedy@geologist.com

**Work Order:** 1406632  
**Date Received:** 6/17/2014

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1406632-001A	EXE-SS1	Soil	Multi-Range TPH(g,d,mo)	2	Brass/Stainless Tube	<input type="checkbox"/>	6/12/2014 9:30	5 days		<input type="checkbox"/>	
			SW6020 (LUFT)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8082 (PCBs Only)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Brass/Stainless Tube = Brass or Stainless Steel Tube





### Sample Receipt Checklist

Client Name: **CKG Environmental** Date and Time Received: **6/17/2014 6:27:23 PM**  
 Project Name: **Owens-Brockway, Oakland** Login Reviewed by:  
 WorkOrder No: **1406632** Matrix: Soil Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 2°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1406666

**Report Created for:** CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

**Project Contact:** Christina Kennedy  
**Project P.O.:**  
**Project Name:** Underground Facilities Removal

**Project Received:** 06/18/2014

Analytical Report reviewed & approved for release on 06/24/2014 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***







## Glossary of Terms & Qualifier Definitions

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**WorkOrder:** 1406666

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

### Analytical Qualifiers

S	spike recovery outside accepted recovery limits
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	no recognizable pattern
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant

### Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch.
F3	the surrogate standard recovery is outside of acceptance limits.





## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8082  
**Unit:** mg/kg

### Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil	06/18/2014 09:00	GC5A	91770

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	06/22/2014 15:53
Aroclor1221	ND	0.050	1	06/22/2014 15:53
Aroclor1232	ND	0.050	1	06/22/2014 15:53
Aroclor1242	ND	0.050	1	06/22/2014 15:53
Aroclor1248	ND	0.050	1	06/22/2014 15:53
Aroclor1254	ND	0.050	1	06/22/2014 15:53
Aroclor1260	ND	0.050	1	06/22/2014 15:53
PCBs, total	ND	0.050	1	06/22/2014 15:53

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	112	70-130	06/22/2014 15:53



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil	06/18/2014 09:00	GC10	91765
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		10	100	06/19/2014 17:47
tert-Amyl methyl ether (TAME)	ND		0.50	100	06/19/2014 17:47
Benzene	ND		0.50	100	06/19/2014 17:47
Bromobenzene	ND		0.50	100	06/19/2014 17:47
Bromochloromethane	ND		0.50	100	06/19/2014 17:47
Bromodichloromethane	ND		0.50	100	06/19/2014 17:47
Bromoform	ND		0.50	100	06/19/2014 17:47
Bromomethane	ND		0.50	100	06/19/2014 17:47
2-Butanone (MEK)	ND		2.0	100	06/19/2014 17:47
t-Butyl alcohol (TBA)	ND		5.0	100	06/19/2014 17:47
n-Butyl benzene	ND		0.50	100	06/19/2014 17:47
sec-Butyl benzene	<b>0.79</b>		0.50	100	06/19/2014 17:47
tert-Butyl benzene	ND		0.50	100	06/19/2014 17:47
Carbon Disulfide	ND		0.50	100	06/19/2014 17:47
Carbon Tetrachloride	ND		0.50	100	06/19/2014 17:47
Chlorobenzene	ND		0.50	100	06/19/2014 17:47
Chloroethane	ND		0.50	100	06/19/2014 17:47
Chloroform	ND		0.50	100	06/19/2014 17:47
Chloromethane	ND		0.50	100	06/19/2014 17:47
2-Chlorotoluene	ND		0.50	100	06/19/2014 17:47
4-Chlorotoluene	ND		0.50	100	06/19/2014 17:47
Dibromochloromethane	ND		0.50	100	06/19/2014 17:47
1,2-Dibromo-3-chloropropane	ND		0.40	100	06/19/2014 17:47
1,2-Dibromoethane (EDB)	ND		0.40	100	06/19/2014 17:47
Dibromomethane	ND		0.50	100	06/19/2014 17:47
1,2-Dichlorobenzene	ND		0.50	100	06/19/2014 17:47
1,3-Dichlorobenzene	ND		0.50	100	06/19/2014 17:47
1,4-Dichlorobenzene	ND		0.50	100	06/19/2014 17:47
Dichlorodifluoromethane	ND		0.50	100	06/19/2014 17:47
1,1-Dichloroethane	ND		0.50	100	06/19/2014 17:47
1,2-Dichloroethane (1,2-DCA)	ND		0.40	100	06/19/2014 17:47
1,1-Dichloroethene	ND		0.50	100	06/19/2014 17:47
cis-1,2-Dichloroethene	ND		0.50	100	06/19/2014 17:47
trans-1,2-Dichloroethene	ND		0.50	100	06/19/2014 17:47
1,2-Dichloropropane	ND		0.50	100	06/19/2014 17:47
1,3-Dichloropropane	ND		0.50	100	06/19/2014 17:47
2,2-Dichloropropane	ND		0.50	100	06/19/2014 17:47
1,1-Dichloropropene	ND		0.50	100	06/19/2014 17:47

(Cont.)



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil	06/18/2014 09:00	GC10	91765
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.50	100	06/19/2014 17:47
trans-1,3-Dichloropropene	ND		0.50	100	06/19/2014 17:47
Diisopropyl ether (DIPE)	ND		0.50	100	06/19/2014 17:47
Ethylbenzene	ND		0.50	100	06/19/2014 17:47
Ethyl tert-butyl ether (ETBE)	ND		0.50	100	06/19/2014 17:47
Freon 113	ND		10	100	06/19/2014 17:47
Hexachlorobutadiene	ND		0.50	100	06/19/2014 17:47
Hexachloroethane	ND		0.50	100	06/19/2014 17:47
2-Hexanone	ND		0.50	100	06/19/2014 17:47
Isopropylbenzene	ND		0.50	100	06/19/2014 17:47
4-Isopropyl toluene	ND		0.50	100	06/19/2014 17:47
Methyl-t-butyl ether (MTBE)	ND		0.50	100	06/19/2014 17:47
Methylene chloride	ND		0.50	100	06/19/2014 17:47
4-Methyl-2-pentanone (MIBK)	ND		0.50	100	06/19/2014 17:47
Naphthalene	ND		0.50	100	06/19/2014 17:47
n-Propyl benzene	ND		0.50	100	06/19/2014 17:47
Styrene	ND		0.50	100	06/19/2014 17:47
1,1,1,2-Tetrachloroethane	ND		0.50	100	06/19/2014 17:47
1,1,2,2-Tetrachloroethane	ND		0.50	100	06/19/2014 17:47
Tetrachloroethene	ND		0.50	100	06/19/2014 17:47
Toluene	ND		0.50	100	06/19/2014 17:47
1,2,3-Trichlorobenzene	ND		0.50	100	06/19/2014 17:47
1,2,4-Trichlorobenzene	ND		0.50	100	06/19/2014 17:47
1,1,1-Trichloroethane	ND		0.50	100	06/19/2014 17:47
1,1,2-Trichloroethane	ND		0.50	100	06/19/2014 17:47
Trichloroethene	ND		0.50	100	06/19/2014 17:47
Trichlorofluoromethane	ND		0.50	100	06/19/2014 17:47
1,2,3-Trichloropropane	ND		0.50	100	06/19/2014 17:47
1,2,4-Trimethylbenzene	ND		0.50	100	06/19/2014 17:47
1,3,5-Trimethylbenzene	ND		0.50	100	06/19/2014 17:47
Vinyl Chloride	ND		0.50	100	06/19/2014 17:47
Xylenes, Total	ND		0.50	100	06/19/2014 17:47
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	104		70-130		06/19/2014 17:47
Toluene-d8	99		70-130		06/19/2014 17:47
4-BFB	120		70-130		06/19/2014 17:47



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil	06/18/2014 09:00	GC35	91782

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	200	06/20/2014 13:05
Acenaphthylene	ND	2.0	200	06/20/2014 13:05
Anthracene	ND	2.0	200	06/20/2014 13:05
Benzo (a) anthracene	ND	2.0	200	06/20/2014 13:05
Benzo (b) fluoranthene	ND	2.0	200	06/20/2014 13:05
Benzo (k) fluoranthene	ND	2.0	200	06/20/2014 13:05
Benzo (g,h,i) perylene	ND	2.0	200	06/20/2014 13:05
Benzo (a) pyrene	ND	2.0	200	06/20/2014 13:05
Chrysene	ND	2.0	200	06/20/2014 13:05
Dibenzo (a,h) anthracene	ND	2.0	200	06/20/2014 13:05
Fluoranthene	ND	2.0	200	06/20/2014 13:05
Fluorene	2.2	2.0	200	06/20/2014 13:05
Indeno (1,2,3-cd) pyrene	ND	2.0	200	06/20/2014 13:05
1-Methylnaphthalene	2.6	2.0	200	06/20/2014 13:05
2-Methylnaphthalene	ND	2.0	200	06/20/2014 13:05
Naphthalene	ND	2.0	200	06/20/2014 13:05
Phenanthrene	3.6	2.0	200	06/20/2014 13:05
Pyrene	ND	2.0	200	06/20/2014 13:05
Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: c1
1-Fluoronaphthalene	681	S	30-130	06/20/2014 13:05
2-Fluorobiphenyl	153	S	30-130	06/20/2014 13:05



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil	06/18/2014 09:00	GC19	91722
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	1200		200	200	06/19/2014 18:30
MTBE	---		10	200	06/19/2014 18:30
Benzene	---		1.0	200	06/19/2014 18:30
Toluene	---		1.0	200	06/19/2014 18:30
Ethylbenzene	---		1.0	200	06/19/2014 18:30
Xylenes	---		1.0	200	06/19/2014 18:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7,d9	
aaa-TFT	88		70-130	06/19/2014 18:30	



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil/TOTAL	06/18/2014 09:00	ICP-MS2	91762
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		0.25	1	06/20/2014 15:50
Chromium	55		0.50	1	06/20/2014 15:50
Lead	5.1		0.50	1	06/20/2014 15:50
Nickel	110		5.0	10	06/20/2014 21:45
Zinc	40		5.0	1	06/20/2014 15:50
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	110		70-130		06/20/2014 15:50



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/18/14 16:08  
**Date Prepared:** 6/18/14

**WorkOrder:** 1406666  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE SS2	1406666-001A	Soil	06/18/2014 09:00	GC2A	91712

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	7500	50	50	06/22/2014 04:20
TPH-Motor Oil (C18-C36)	6800	250	50	06/22/2014 04:20

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	94	70-130	06/22/2014 04:20



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC23  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91770  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8082  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-91770  
 1406665-002AMS/MSD

## QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.146	0.050	0.15	-	97	70-130
PCBs, total	ND	-	0.050	-	-	-	-

**Surrogate Recovery**

Decachlorobiphenyl	0.0452	0.0562		0.050	90	112	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	0.150	0.163	0.15	ND	99.7	109	70-130	8.64	30

**Surrogate Recovery**

Decachlorobiphenyl	0.0621	0.0624	0.050		124	125	70-130	0.454	30
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/23/14  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91765  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91765  
 1406650-019AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0446	0.0050	0.050	-	89.2	70-130
Benzene	ND	0.0486	0.0050	0.050	-	97.1	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.157	0.050	0.20	-	78.6	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0469	0.0050	0.050	-	93.7	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0476	0.0040	0.050	-	95.3	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0443	0.0040	0.050	-	88.5	70-130
1,1-Dichloroethene	ND	0.0401	0.0050	0.050	-	80.2	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/23/14  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91765  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91765  
 1406650-019AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0467	0.0050	0.050	-	93.5	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0471	0.0050	0.050	-	94.2	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0465	0.0050	0.050	-	93	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0512	0.0050	0.050	-	102	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0502	0.0050	0.050	-	100	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	0.126	0.185		0.18	101	106	70-130
Toluene-d8	0.135	0.180		0.18	108	103	70-130
4-BFB	0.0150	0.0203		0.018	120	116	70-130

(Cont.)



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/23/14  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91765  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91765  
 1406650-019AMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0701	0.0760	0.10	ND	70.1	76	70-130	8.06	30
Benzene	0.0794	0.0863	0.10	ND	79.4	86.3	70-130	8.31	30
t-Butyl alcohol (TBA)	0.284	0.316	0.40	ND	70.9	79	70-130	10.8	30
Chlorobenzene	0.0842	0.0909	0.10	ND	84.2	90.9	70-130	7.62	30
1,2-Dibromoethane (EDB)	0.0835	0.0909	0.10	ND	83.5	90.9	70-130	8.48	30
1,2-Dichloroethane (1,2-DCA)	0.0815	0.0869	0.10	ND	81.5	86.9	70-130	6.45	30
1,1-Dichloroethene	0.0695	0.0778	0.10	ND	69.5,F1	77.8	70-130	11.3	30
Diisopropyl ether (DIPE)	0.0756	0.0814	0.10	ND	75.6	81.3	70-130	7.38	30
Ethyl tert-butyl ether (ETBE)	0.0739	0.0800	0.10	ND	73.9	79.9	70-130	7.86	30
Methyl-t-butyl ether (MTBE)	0.0706	0.0768	0.10	ND	70.6	76.8	70-130	8.34	30
Toluene	0.0872	0.0966	0.10	ND	87.2	96.6	70-130	10.2	30
Trichloroethene	0.0794	0.0869	0.10	ND	79.4	86.9	70-130	9.05	30
<b>Surrogate Recovery</b>									
Dibromofluoromethane	0.332	0.337	0.35		95	96	70-130	1.54	30
Toluene-d8	0.336	0.348	0.35		96	100	70-130	3.52	30
4-BFB	0.0350	0.0364	0.035		100	104	70-130	4.04	30



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC35  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91782  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-91782  
 1406662-001AMS/MSD

## QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.010	-	-	-	-
Acenaphthylene	ND	-	0.010	-	-	-	-
Anthracene	ND	-	0.010	-	-	-	-
Benzo (a) anthracene	ND	-	0.010	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.010	-	-	-	-
Benzo (a) pyrene	ND	0.134	0.010	0.20	-	66.9	30-130
Chrysene	ND	0.173	0.010	0.20	-	86.7	30-130
Dibenzo (a,h) anthracene	ND	-	0.010	-	-	-	-
Fluoranthene	ND	-	0.010	-	-	-	-
Fluorene	ND	-	0.010	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.010	-	-	-	-
1-Methylnaphthalene	ND	0.179	0.010	0.20	-	89.6	30-130
2-Methylnaphthalene	ND	0.156	0.010	0.20	-	77.8	30-130
Naphthalene	ND	-	0.010	-	-	-	-
Phenanthrene	ND	0.173	0.010	0.20	-	86.6	30-130
Pyrene	ND	0.166	0.010	0.20	-	82.8	30-130

### Surrogate Recovery

1-Fluoronaphthalene	0.648	0.650		0.50	130	130	30-130
2-Fluorobiphenyl	0.646	0.638		0.50	129	128	30-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Benzo (a) pyrene	0.271	0.274	0.20	0.01765	126	128	30-130	1.11	30
Chrysene	0.228	0.225	0.20	0.02770	100	98.6	30-130	1.46	30
1-Methylnaphthalene	0.221	0.222	0.20	ND	111	111	30-130	0	30
2-Methylnaphthalene	0.197	0.196	0.20	ND	98.4	98.2	30-130	0.186	30
Phenanthrene	0.254	0.248	0.20	0.06491	94.4	91.7	30-130	2.21	30
Pyrene	0.322	0.322	0.20	0.09370	114	114	30-130	0	30

### Surrogate Recovery

1-Fluoronaphthalene	0.725	0.715	0.50		145,F3	143,F3	30-130	1.34	30
2-Fluorobiphenyl	0.696	0.679	0.50		139,F3	136,F3	30-130	2.36	30



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC19  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91722  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91722  
 1406666-001AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.590	0.40	0.60	-	98.2	70-130
MTBE	ND	0.0843	0.050	0.10	-	84.3	70-130
Benzene	ND	0.110	0.0050	0.10	-	110	70-130
Toluene	ND	0.113	0.0050	0.10	-	113	70-130
Ethylbenzene	ND	0.113	0.0050	0.10	-	113	70-130
Xylenes	ND	0.355	0.0050	0.30	-	118	70-130

### Surrogate Recovery

2-Fluorotoluene	0.111	0.106		0.10	111	106	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR	0	140	NR	NR	-	NR	
MTBE	NR	NR	0	ND<10	NR	NR	-	NR	
Benzene	NR	NR	0	ND<1	NR	NR	-	NR	
Toluene	NR	NR	0	ND<1	NR	NR	-	NR	
Ethylbenzene	NR	NR	0	1.8	NR	NR	-	NR	
Xylenes	NR	NR	0	6.4	NR	NR	-	NR	

### Surrogate Recovery

2-Fluorotoluene	NR	NR	0		NR	NR	-	NR	
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# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/18/14  
**Date Analyzed:** 6/19/14  
**Instrument:** ICP-MS2  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91762  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91762  
 1406650-019AMS/MSD

## QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	49.4	0.25	50	-	98.7	75-125
Chromium	ND	51.2	0.50	50	-	102	75-125
Lead	ND	50.3	0.50	50	-	101	75-125
Nickel	ND	53.9	0.50	50	-	108	75-125
Zinc	ND	518	5.0	500	-	104	75-125

### Surrogate Recovery

Tb 350.917	610	496		500	122	99	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	43.4	53.8	50	ND	86.9	108	75-125	21.3,F1	20
Chromium	67.3	84.6	50	25.98	82.7	117	75-125	22.8,F1	20
Lead	49.7	62.2	50	6.794	85.8	111	75-125	22.4,F1	20
Nickel	69.0	86.7	50	24.72	88.5	124	75-125	22.7,F1	20
Zinc	510	638	500	78.85	86.3	112	75-125	22.2,F1	20

### Surrogate Recovery

Tb 350.917	449	558	500		90	112	70-130	21.6,F1	20
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC11A, GC2B  
**Matrix:** Soil  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406666  
**BatchID:** 91712  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-91712  
 1406632-001AMS/MSD

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	46.4	1.0	40	-	116	70-130
<b>Surrogate Recovery</b>							
C9	24.4	27.2		25	98	109	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR	0	11000	NR	NR	-	NR	
<b>Surrogate Recovery</b>									
C9	NR	NR	0		NR	NR	-	NR	



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1406666

ClientCode: CKGS

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Christina Kennedy  
 CKG Environmental  
 P.O. Box 246  
 St. Helena, CA 94574  
 (707) 967-8080    FAX: (707) 967-8080

Email: ckennedy@geologist.com  
 cc/3rd Party:  
 PO:  
 ProjectNo: Underground Facilities Removal

**Bill to:**  
 Accounts Payable  
 CKG Environmental  
 808 Zinfandel Lane  
 St. Helena, CA 94574

**Requested TAT: 5 days**  
  
**Date Received: 06/18/2014**  
**Date Printed: 06/25/2014**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1406666-001	EXE SS2	Soil	6/18/2014 9:00	<input type="checkbox"/>	A	A	A	A	A								

**Test Legend:**

1	8082A_PCB_S	2	8260B_S	3	8270D-PNA_S	4	G-MBTEX_S	5	LUFTMS_S
6		7		8		9		10	
11		12							

The following SamplID: 001A contains testgroup.

**Prepared by: Catherine Burton**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.





## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL  
**Project:** Underground Facilities Removal  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Christina Kennedy  
**Contact's Email:** [ckennedy@geologist.com](mailto:ckennedy@geologist.com)

**Work Order:** 1406666  
**Date Received:** 6/18/2014

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1406666-001A	EXE SS2	Soil	Multi-Range TPH(g,d,mo)	2	brass Tube	<input type="checkbox"/>	6/18/2014 9:00	5 days		<input type="checkbox"/>	
			SW6020 (LUFT)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8082 (PCBs Only)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

brass Tube =





### Sample Receipt Checklist

Client Name: **CKG Environmental** Date and Time Received: **6/18/2014 4:08:08 PM**  
 Project Name: **Underground Facilities Removal** Login Reviewed by: Catherine Burton  
 WorkOrder No: **1406666** Matrix: Soil Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 6.1°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments: Date and time of collection retrieved from sample container. (no documentation on COC)



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1406626

**Report Created for:** CKG Environmental  
P.O. Box 246  
St. Helena, CA 94574

**Project Contact:** Christina Kennedy  
**Project P.O.:**  
**Project Name:** Underground Facilities Removal

**Project Received:** 06/17/2014

Analytical Report reviewed & approved for release on 06/24/2014 by:

*Question about  
your data?*

[Click here to email  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***





## Glossary of Terms & Qualifier Definitions

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**WorkOrder:** 1406626

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

### Analytical Qualifiers

S	spike recovery outside accepted recovery limits
a1	sample diluted due to matrix interference
b6	lighter than water immiscible sheen/product is present
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
c4	surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406626  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8082  
**Unit:** µg/L

## Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001C	Water	06/17/2014 11:20	GC20	91711

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	500	1000	06/18/2014 04:07
Aroclor1221	ND	500	1000	06/18/2014 04:07
Aroclor1232	ND	500	1000	06/18/2014 04:07
Aroclor1242	ND	500	1000	06/18/2014 04:07
Aroclor1248	ND	500	1000	06/18/2014 04:07
Aroclor1254	ND	500	1000	06/18/2014 04:07
Aroclor1260	ND	500	1000	06/18/2014 04:07
PCBs, total	ND	500	1000	06/18/2014 04:07

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: b6,c4
Decachlorobiphenyl	312	S	70-130	06/18/2014 04:07





## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/20/14

**WorkOrder:** 1406626  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001B	Water	06/17/2014 11:20	GC28	91860
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		10	1	06/20/2014 00:45
tert-Amyl methyl ether (TAME)	ND		0.50	1	06/20/2014 00:45
Benzene	ND		0.50	1	06/20/2014 00:45
Bromobenzene	ND		0.50	1	06/20/2014 00:45
Bromochloromethane	ND		0.50	1	06/20/2014 00:45
Bromodichloromethane	ND		0.50	1	06/20/2014 00:45
Bromoform	ND		0.50	1	06/20/2014 00:45
Bromomethane	ND		0.50	1	06/20/2014 00:45
2-Butanone (MEK)	3.1		2.0	1	06/20/2014 00:45
t-Butyl alcohol (TBA)	ND		2.0	1	06/20/2014 00:45
n-Butyl benzene	3.4		0.50	1	06/20/2014 00:45
sec-Butyl benzene	4.6		0.50	1	06/20/2014 00:45
tert-Butyl benzene	0.67		0.50	1	06/20/2014 00:45
Carbon Disulfide	ND		0.50	1	06/20/2014 00:45
Carbon Tetrachloride	ND		0.50	1	06/20/2014 00:45
Chlorobenzene	ND		0.50	1	06/20/2014 00:45
Chloroethane	ND		0.50	1	06/20/2014 00:45
Chloroform	ND		0.50	1	06/20/2014 00:45
Chloromethane	ND		0.50	1	06/20/2014 00:45
2-Chlorotoluene	ND		0.50	1	06/20/2014 00:45
4-Chlorotoluene	ND		0.50	1	06/20/2014 00:45
Dibromochloromethane	ND		0.50	1	06/20/2014 00:45
1,2-Dibromo-3-chloropropane	ND		0.20	1	06/20/2014 00:45
1,2-Dibromoethane (EDB)	ND		0.50	1	06/20/2014 00:45
Dibromomethane	ND		0.50	1	06/20/2014 00:45
1,2-Dichlorobenzene	ND		0.50	1	06/20/2014 00:45
1,3-Dichlorobenzene	ND		0.50	1	06/20/2014 00:45
1,4-Dichlorobenzene	ND		0.50	1	06/20/2014 00:45
Dichlorodifluoromethane	ND		0.50	1	06/20/2014 00:45
1,1-Dichloroethane	ND		0.50	1	06/20/2014 00:45
1,2-Dichloroethane (1,2-DCA)	ND		0.50	1	06/20/2014 00:45
1,1-Dichloroethene	ND		0.50	1	06/20/2014 00:45
cis-1,2-Dichloroethene	ND		0.50	1	06/20/2014 00:45
trans-1,2-Dichloroethene	ND		0.50	1	06/20/2014 00:45
1,2-Dichloropropane	ND		0.50	1	06/20/2014 00:45
1,3-Dichloropropane	ND		0.50	1	06/20/2014 00:45
2,2-Dichloropropane	ND		0.50	1	06/20/2014 00:45
1,1-Dichloropropene	ND		0.50	1	06/20/2014 00:45

(Cont.)



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/20/14

**WorkOrder:** 1406626  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001B	Water	06/17/2014 11:20	GC28	91860
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.50	1	06/20/2014 00:45
trans-1,3-Dichloropropene	ND		0.50	1	06/20/2014 00:45
Diisopropyl ether (DIPE)	ND		0.50	1	06/20/2014 00:45
Ethylbenzene	ND		0.50	1	06/20/2014 00:45
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	06/20/2014 00:45
Freon 113	ND		0.50	1	06/20/2014 00:45
Hexachlorobutadiene	ND		0.50	1	06/20/2014 00:45
Hexachloroethane	ND		0.50	1	06/20/2014 00:45
2-Hexanone	ND		0.50	1	06/20/2014 00:45
Isopropylbenzene	1.2		0.50	1	06/20/2014 00:45
4-Isopropyl toluene	ND		0.50	1	06/20/2014 00:45
Methyl-t-butyl ether (MTBE)	ND		0.50	1	06/20/2014 00:45
Methylene chloride	ND		0.50	1	06/20/2014 00:45
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	06/20/2014 00:45
Naphthalene	9.5		0.50	1	06/20/2014 00:45
n-Propyl benzene	ND		0.50	1	06/20/2014 00:45
Styrene	ND		0.50	1	06/20/2014 00:45
1,1,1,2-Tetrachloroethane	ND		0.50	1	06/20/2014 00:45
1,1,2,2-Tetrachloroethane	ND		0.50	1	06/20/2014 00:45
Tetrachloroethene	ND		0.50	1	06/20/2014 00:45
Toluene	ND		0.50	1	06/20/2014 00:45
1,2,3-Trichlorobenzene	ND		0.50	1	06/20/2014 00:45
1,2,4-Trichlorobenzene	ND		0.50	1	06/20/2014 00:45
1,1,1-Trichloroethane	ND		0.50	1	06/20/2014 00:45
1,1,2-Trichloroethane	ND		0.50	1	06/20/2014 00:45
Trichloroethene	ND		0.50	1	06/20/2014 00:45
Trichlorofluoromethane	ND		0.50	1	06/20/2014 00:45
1,2,3-Trichloropropane	ND		0.50	1	06/20/2014 00:45
1,2,4-Trimethylbenzene	ND		0.50	1	06/20/2014 00:45
1,3,5-Trimethylbenzene	ND		0.50	1	06/20/2014 00:45
Vinyl Chloride	ND		0.50	1	06/20/2014 00:45
Xylenes, Total	ND		0.50	1	06/20/2014 00:45
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> b6	
Dibromofluoromethane	95		70-130	06/20/2014 00:45	
Toluene-d8	89		70-130	06/20/2014 00:45	
4-BFB	113		70-130	06/20/2014 00:45	





## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/20/14

**WorkOrder:** 1406626  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8270C-SIM  
**Unit:** µg/L

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001E	Water	06/17/2014 11:20	GC35	91901

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	330	250	500	06/20/2014 20:21
Acenaphthylene	ND	250	500	06/20/2014 20:21
Anthracene	ND	250	500	06/20/2014 20:21
Benzo (a) anthracene	ND	250	500	06/20/2014 20:21
Benzo (b) fluoranthene	ND	250	500	06/20/2014 20:21
Benzo (k) fluoranthene	ND	250	500	06/20/2014 20:21
Benzo (g,h,i) perylene	ND	250	500	06/20/2014 20:21
Benzo (a) pyrene	ND	250	500	06/20/2014 20:21
Chrysene	ND	250	500	06/20/2014 20:21
Dibenzo (a,h) anthracene	ND	250	500	06/20/2014 20:21
Fluoranthene	ND	250	500	06/20/2014 20:21
Fluorene	620	250	500	06/20/2014 20:21
Indeno (1,2,3-cd) pyrene	ND	250	500	06/20/2014 20:21
1-Methylnaphthalene	1700	250	500	06/20/2014 20:21
2-Methylnaphthalene	1300	250	500	06/20/2014 20:21
Naphthalene	ND	250	500	06/20/2014 20:21
Phenanthrene	750	250	500	06/20/2014 20:21
Pyrene	ND	250	500	06/20/2014 20:21
Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: b6,c1
1-Fluoronaphthalene	2175	S	30-130	06/20/2014 20:21
2-Fluorobiphenyl	1284	S	30-130	06/20/2014 20:21



## Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/20/14

**WorkOrder:** 1406626  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001A	Water	06/17/2014 11:20	GC3	91669
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	1000		250	5	06/20/2014 06:28
MTBE	---		25	5	06/20/2014 06:28
Benzene	---		2.5	5	06/20/2014 06:28
Toluene	---		2.5	5	06/20/2014 06:28
Ethylbenzene	---		2.5	5	06/20/2014 06:28
Xylenes	---		2.5	5	06/20/2014 06:28
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7,b6	
aaa-TFT	96		70-130		06/20/2014 06:28



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406626  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L

## LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001D	Water/TOTAL	06/17/2014 11:20	ICP-MS1	91695
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		5.0	20	06/18/2014 21:14
Chromium	150		10	20	06/18/2014 21:14
Lead	16		10	20	06/18/2014 21:14
Nickel	190		10	20	06/18/2014 21:14
Zinc	110		100	20	06/18/2014 21:14
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: a1	
Tb 350.917	109		70-130	06/18/2014 21:14	



# Analytical Report

**Client:** CKG Environmental  
**Project:** Underground Facilities Removal  
**Date Received:** 6/17/14 17:49  
**Date Prepared:** 6/17/14

**WorkOrder:** 1406626  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8015B  
**Unit:** µg/L

## Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EXE GW1	1406626-001A	Water	06/17/2014 11:20	GC9b	91708

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	540,000	25,000	500	06/20/2014 18:43
TPH-Motor Oil (C18-C36)	670,000	120,000	500	06/20/2014 18:43

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2,b6
C9	98	70-130	06/20/2014 18:43



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/18/14  
**Instrument:** GC20  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91711  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8082  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91711

### QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.50	-	-	-	-
Aroclor1221	ND	-	0.50	-	-	-	-
Aroclor1232	ND	-	0.50	-	-	-	-
Aroclor1242	ND	-	0.50	-	-	-	-
Aroclor1248	ND	-	0.50	-	-	-	-
Aroclor1254	ND	-	0.50	-	-	-	-
Aroclor1260	ND	3.81	0.50	3.75	-	102	70-130
PCBs, total	ND	-	0.50	-	-	-	-
<b>Surrogate Recovery</b>							
Decachlorobiphenyl	1.31	1.35		1.25	105	108	70-130



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/20/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91860  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91860  
 1406613-002BMS/MSD

## QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	19.8	0.50	20	-	99.2	70-130
Benzene	ND	22.5	0.50	20	-	113	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	60.1	2.0	80	-	75.1	70-130
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	21.7	0.50	20	-	108	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	20.2	0.50	20	-	101	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	19.0	0.50	20	-	95.2	70-130
1,1-Dichloroethene	ND	20.1	0.50	20	-	101	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/20/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91860  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91860  
 1406613-002BMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	21.8	0.50	20	-	109	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	20.7	0.50	20	-	103	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	18.8	0.50	20	-	94.1	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	20.8	0.50	20	-	104	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	23.7	0.50	20	-	119	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	23.1	43.8		45	92	97	70-130
Toluene-d8	25.3	45.1		45	101	100	70-130
4-BFB	2.44	4.46		4.5	98	99	70-130

(Cont.)



## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/20/14  
**Date Analyzed:** 6/19/14  
**Instrument:** GC28  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91860  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91860  
 1406613-002BMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	22.9	22.8	20	ND	114	114	70-130	0	20
Benzene	21.5	21.3	20	ND	107	106	70-130	1.06	20
t-Butyl alcohol (TBA)	91.8	89.4	80	ND	115	112	70-130	2.62	20
Chlorobenzene	20.9	20.9	20	ND	105	105	70-130	0	20
1,2-Dibromoethane (EDB)	23.6	23.5	20	ND	118	118	70-130	0	20
1,2-Dichloroethane (1,2-DCA)	21.8	21.9	20	ND	109	109	70-130	0	20
1,1-Dichloroethene	20.7	20.6	20	ND	104	103	70-130	0.363	20
Diisopropyl ether (DIPE)	22.2	21.4	20	ND	111	107	70-130	3.36	20
Ethyl tert-butyl ether (ETBE)	22.8	22.5	20	ND	114	113	70-130	1.29	20
Methyl-t-butyl ether (MTBE)	23.2	22.5	20	ND	116	112	70-130	3.09	20
Toluene	20.1	20.0	20	ND	101	99.8	70-130	0.678	20
Trichloroethene	24.8	24.5	20	ND	124	123	70-130	1.11	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	47.3	46.9	45		105	104	70-130	0.680	20
Toluene-d8	42.3	42.0	45		94	93	70-130	0.694	20
4-BFB	4.74	4.70	4.5		105	104	70-130	0.922	20





## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/20/14  
**Date Analyzed:** 6/20/14  
**Instrument:** GC35  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91901  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8270C-SIM  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91901

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.50	-	-	-	-
Acenaphthylene	ND	-	0.50	-	-	-	-
Anthracene	ND	-	0.50	-	-	-	-
Benzo (a) anthracene	ND	-	0.50	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.50	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.50	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.50	-	-	-	-
Benzo (a) pyrene	ND	5.46	0.50	10	-	54.6	30-130
Chrysene	ND	6.47	0.50	10	-	64.7	30-130
Dibenzo (a,h) anthracene	ND	-	0.50	-	-	-	-
Fluoranthene	ND	-	0.50	-	-	-	-
Fluorene	ND	-	0.50	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.50	-	-	-	-
1-Methylnaphthalene	ND	7.06	0.50	10	-	70.6	30-130
2-Methylnaphthalene	ND	6.24	0.50	10	-	62.4	30-130
Naphthalene	ND	-	0.50	-	-	-	-
Phenanthrene	ND	6.64	0.50	10	-	66.4	30-130
Pyrene	ND	5.90	0.50	10	-	59	30-130
<b>Surrogate Recovery</b>							
1-Fluoronaphthalene	22.6	21.4		25	90	86	30-130
2-Fluorobiphenyl	21.7	20.9		25	87	84	30-130



# Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/16/14  
**Instrument:** GC3  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91669  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91669  
 1406420-021AMS/MSD

## QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	63.5	40	60	-	106	70-130
MTBE	ND	10.8	5.0	10	-	108	70-130
Benzene	ND	10.2	0.50	10	-	102	70-130
Toluene	ND	10.3	0.50	10	-	103	70-130
Ethylbenzene	ND	10.4	0.50	10	-	104	70-130
Xylenes	ND	31.4	0.50	30	-	105	70-130

**Surrogate Recovery**

aaa-TFT	9.74	9.70		10	97	97	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	63.8	65.0	60	ND	106	108	70-130	1.80	20
MTBE	11.1	9.96	10	ND	111	99.6	70-130	11.0	20
Benzene	11.8	10.8	10	0.7409	111	100	70-130	9.22	20
Toluene	11.1	10.2	10	ND	111	102	70-130	8.24	20
Ethylbenzene	11.0	10.2	10	ND	110	102	70-130	7.30	20
Xylenes	33.5	31.5	30	ND	112	105	70-130	6.26	20

**Surrogate Recovery**

aaa-TFT	10.1	9.62	10		101	96	70-130	5.11	20
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/18/14  
**Instrument:** ICP-MS1  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91695  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91695  
 1406613-001DMS/MSD

### QC Summary Report for E200.8

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	50.2	0.25	50	-	100	85-115
Chromium	ND	54.9	0.50	50	-	110	85-115
Lead	ND	49.6	0.50	50	-	99.1	85-115
Nickel	ND	51.0	0.50	50	-	102	85-115
Zinc	ND	526	5.0	500	-	105	85-115

**Surrogate Recovery**

Tb 350.917	766	782		750	102	104	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	49.6	53.9	50	ND	99.3	108	70-130	8.25	20
Chromium	51.9	52.2	50	ND	104	104	70-130	0	20
Lead	52.9	56.2	50	2.5	101	107	70-130	6.04	20
Nickel	55.4	57.0	50	5.8	99.1	102	70-130	2.88	20
Zinc	576	578	500	64	102	103	70-130	0.295	20

**Surrogate Recovery**

Tb 350.917	768	846	750		102	113	70-130	9.60	20
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## Quality Control Report

**Client:** CKG Environmental  
**Date Prepared:** 6/17/14  
**Date Analyzed:** 6/18/14  
**Instrument:** GC11A  
**Matrix:** Water  
**Project:** Underground Facilities Removal

**WorkOrder:** 1406626  
**BatchID:** 91708  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8015B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-91708

### QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	850	50	1000	-	85	70-130
<b>Surrogate Recovery</b>							
C9	611	621		625	98	99	70-130

1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1406626

ClientCode: CKGS

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Christina Kennedy  
 CKG Environmental  
 P.O. Box 246  
 St. Helena, CA 94574  
 (707) 967-8080    FAX: (707) 967-8080

Email: ckennedy@geologist.com  
 cc/3rd Party:  
 PO:  
 ProjectNo: Underground Facilities Removal

**Bill to:**  
 Accounts Payable  
 CKG Environmental  
 808 Zinfindel Lane  
 St. Helena, CA 94574

**Requested TAT: 5 days**  
  
**Date Received: 06/17/2014**  
**Date Printed: 06/24/2014**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1406626-001	EXE GW1	Water	6/17/2014 11:20	<input type="checkbox"/>	C	B	E	A	D								

**Test Legend:**

1	8082A_PCB_W	2	8260B_W	3	8270D-PNA_W	4	G-MBTX_W	5	LUFTMS_W
6		7		8		9		10	
11		12							

The following SampID: 001A contains testgroup.

**Prepared by: Catherine Burton**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** CKG ENVIRONMENTAL  
**Project:** Underground Facilities Removal  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Christina Kennedy  
**Contact's Email:** [ckennedy@geologist.com](mailto:ckennedy@geologist.com)

**Work Order:** 1406626  
**Date Received:** 6/17/2014

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1406626-001A	EXE GW1	Water	Multi-Range TPH(g,d,mo)	3	VOA w/ HCl	<input type="checkbox"/>	6/17/2014 11:20	5 days		<input type="checkbox"/>	
1406626-001B	EXE GW1	Water	SW8260B (VOCs)	3	VOA w/ HCl	<input type="checkbox"/>	6/17/2014 11:20	5 days		<input type="checkbox"/>	
1406626-001C	EXE GW1	Water	SW8082 (PCBs Only)	3	VOA w/ HCl	<input type="checkbox"/>	6/17/2014 11:20	5 days		<input type="checkbox"/>	
1406626-001D	EXE GW1	Water	E200.8 (LUFT)	3	VOA w/ HCl	<input type="checkbox"/>	6/17/2014 11:20	5 days		<input type="checkbox"/>	
1406626-001E	EXE GW1	Water	SW8270C (PAHs/PNAs)	3	VOA w/ HCl	<input type="checkbox"/>	6/17/2014 11:20	5 days		<input type="checkbox"/>	

**\* NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

VOA w/ HCl = 43mL VOA w/ HCl





### Sample Receipt Checklist

Client Name: **CKG Environmental** Date and Time Received: **6/17/2014 5:49:14 PM**  
 Project Name: **Underground Facilities Removal** Login Reviewed by: Catherine Burton  
 WorkOrder No: **1406626** Matrix: Water Carrier: Rob Pringle (MAI Courier)

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 2°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



Appendix 7  
Concrete Field/Laboratory Test Results  
and Concrete Batch Records





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Westside

a U.S. CONCRETE COMPANY

CENTRAL CONCRETE SUPPLY CO., INC.

MAIN OFFICE:  
755 Stockton Avenue,  
San Jose, CA 95126  
1-866-404-1000

TICKET NUMBER



WARNING: IRRITATION TO THE SKIN AND EYES: Contains Portland Cement. Wear rubber boots and gloves. PROLONGED CONTACT MAY CAUSE BURNS. Avoid contact with eyes and prolonged contact with skin. In case of contact with skin or eyes, flush thoroughly with water. If irritation persists, get medical attention. KEEP CHILDREN AWAY.

CONCRETE IS A PERISHABLE COMMODITY AND BECOMES THE PROPERTY OF THE PURCHASER UPON LEAVING THE PLANT. ANY CHANGES OR CANCELLATION OF ORIGINAL INSTRUCTIONS MUST BE TELEPHONED TO THE OFFICE BEFORE LOADING STARTS.

WE DO NOT GUARANTEE FINISHED RESULTS OBTAINED FROM THIS LOAD OF CONCRETE AS MANY IMPORTANT FACTORS AFFECTING THE ULTIMATE QUALITY OF THE COMPLETED JOB ARE OUT OF OUR CONTROL. We do not warrant that the concrete can be used in any particular environment or soil conditions or that the concrete is fit for any particular use. Selection of the mix design and/or specification of the mix design parameters are solely the responsibility of the Customer, and we assume no liability therefore.

PLEASE NOTE THIS LOAD OF CONCRETE IS PRODUCED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR READY MIX CONCRETE ASTM. ANY DEFICING MATERIALS, IMPROPER FINISHING AND LACK OF CURING WILL CAUSE DAMAGE OR A DECREASE IN STRENGTH.

NOTICE: MY SIGNATURE BELOW INDICATES THAT I HAVE READ THE HEALTH WARNING NOTICE AND SUPPLIER WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELIVERING INSIDE CURB LINE AND AGREE TO THE TERMS AND CONDITIONS ON REVERSE SIDE. TIME IN EXCESS OF FREE TIME WILL BE CHARGED AT CURRENT DELAY RATE. ALL C.O.D. DELIVERIES MUST BE PAID IN ADVANCE AND LOAD ACCEPTED BY SIGNING THIS DELIVERY TICKET BEFORE POURING.

LOAD RECEIVED BY:  
X

PROPERTY DAMAGE RELEASE  
(TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)

Dear Customer - The size and weight of this truck could cause damage to the premises and/or adjacent property if this load is placed where you desire. It is our wish to help you in every way that we can, but in order to do this we are requesting that you sign this RELEASE relieving this supplier and its affiliates from any responsibility from damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc., due to the delivery of this material, and that you also agree to help the driver remove mud from the wheels of his vehicle so that it will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier and its affiliates for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED: X

WEIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12790) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

WATER ADDED AT CUSTOMER REQUEST  
EXCESSIVE WATER IS DETRIMENTAL TO CONCRETE PERFORMANCE.

REQUERSTOR'S NAME

SA		
FULL LOAD	1/2 LOAD	1/3 LOAD
(GALLONS)	(GALLONS)	(GALLONS)

TEST RESULTS

SLUMP CONC. TEMP  
CYLINDERS TAKEN:  YES  NO  
NAME OF TESTING LAB:

CUSTOMER: ENVIRONMENTAL SERVICES	CUSTOMER CODE: 01	DELIVERY ADDRESS: 3000 ALAMEDA AVE. DAKI AND
PROJECT NAME:	PROJECT CODE:	
CUSTOMER P.O. #:	SPECIAL INSTRUCTIONS: C/S FRUITVALE AVE. ABOUT STRBERSIN @ END OF LOADING PROCESS	
CUSTOMER JOB ID #:		RETURNED CONCRETE

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
75.00	0	75	RTIBERG	FORTA-FERRA FIBER 2.5		
10.00	0		EMULOR	FUEL		
10.00	0		ENVIL	*ENVIRONMENTAL		

\* YD = CUBIC YARD

BATCH TIME: 7:20	LEAVE PLANT:	ARRIVE JOB:	BEGIN POUR:	FINISH POUR:	LEAVE JOB:	ARRIVE AT PLANT:	USAGE CODE:	SUB TOTAL:
TOTAL WAIT TIME:	PREVIOUS TRUCK:	LOAD #:	SLUMP:	MAP PAGE:	TIME DUE ON JOB: 9:51	TAX RATE:	TAX:	
DATE: 07/01/14	ORDER #: 1309	PLANT: 12	TRUCK #: 1354	DELIVERY PROFESSIONAL: ROGERS, DANTEL	ORDER GRAND TOTAL:	TOTAL:		
DRUM REV - AT PLANT:	DRUM REV - START:	DRUM REV - FINISH:	DEPUTY WEIGHMASTER: Robert Jenser	WEIGHMASTER CERTIFICATE: Weighmaster Peraltast, Oakland, CA				



13259193





Central  
Bode  
Westside

a U.S. CONCRETE COMPANY

**CENTRAL CONCRETE SUPPLY CO., INC.**

**MAIN OFFICE:**  
755 Stockton Avenue,  
San Jose, CA 95126  
**1-866-404-1000**

TICKET NUMBER



**WARNING: IRRITATION TO THE SKIN AND EYES:** Contains Portland Cement. Wear rubber boots and gloves. PROLONGED CONTACT MAY CAUSE BURNS. Avoid contact with eyes and prolonged contact with skin. In case of contact with skin or eyes, flush thoroughly with water. If irritation persists, get medical attention. KEEP CHILDREN AWAY.

CONCRETE IS A PERISHABLE COMMODITY AND BECOMES THE PROPERTY OF THE PURCHASER UPON LEAVING THE PLANT. ANY CHANGES OR CANCELLATION OF ORIGINAL INSTRUCTIONS MUST BE TELEPHONED TO THE OFFICE BEFORE LOADING STARTS.

WE DO NOT GUARANTEE FINISHED RESULTS OBTAINED FROM THIS LOAD OF CONCRETE AS MANY IMPORTANT FACTORS AFFECTING THE ULTIMATE QUALITY OF THE COMPLETED JOB ARE OUT OF OUR CONTROL. We do not warrant that the concrete can be used in any particular environment or soil conditions or that the concrete is fit for any particular use. Selection of the mix design and/or specification of the mix design parameters are solely the responsibility of the Customer, and we assume no liability therefore.

PLEASE NOTE: THIS LOAD OF CONCRETE IS PRODUCED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR READY MIX CONCRETE ASTM. ANY DE-ICING MATERIALS, IMPROPER FINISHING AND LACK OF CURING WILL CAUSE DAMAGE OR A DECREASE IN STRENGTH.

NOTICE: MY SIGNATURE BELOW INDICATES THAT I HAVE READ THE HEALTH WARNING NOTICE AND SUPPLIER WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELIVERING INSIDE CURB LINE AND AGREE TO THE TERMS AND CONDITIONS ON REVERSE SIDE. TIME IN EXCESS OF FREE TIME WILL BE CHARGED AT CURRENT DELAY RATE. ALL C.O.D. DELIVERIES MUST BE PAID IN ADVANCE AND LOAD ACCEPTED BY SIGNING THIS DELIVERY TICKET BEFORE POURING.

LOAD RECEIVED BY:

X \_\_\_\_\_

**PROPERTY DAMAGE RELEASE**  
(TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)

Dear Customer - The size and weight of this truck could cause damage to the premises and/or adjacent property if this load is placed where you desire. It is our wish to help you in every way that we can, but in order to do this we are requesting that you sign this RELEASE relieving this supplier and its affiliates from any responsibility from damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. due to the delivery of this material, and that you also agree to help the driver remove mud from the wheels of his vehicle so that it will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier and its affiliates for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED X \_\_\_\_\_

**WEIGHMASTER CERTIFICATE**

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

**WATER ADDED AT CUSTOMER REQUEST**  
EXCESSIVE WATER IS DETRIMENTAL TO CONCRETE PERFORMANCE

X \_\_\_\_\_  
REQUESTOR'S NAME

SA		
FULL LOAD (GALLONS)	1/2 LOAD (GALLONS)	1/4 LOAD (GALLONS)

**TEST RESULTS**

SLUMP \_\_\_\_\_ CONC. TEMP. \_\_\_\_\_  
CYLINDERS TAKEN  YES  NO  
NAME OF TESTING LAB: \_\_\_\_\_

CUSTOMER ENVIRONMENTAL SERVICES	CUSTOMER CODES 1-	DELIVERY ADDRESS
PROJECT NAME	PROJECT CODE	3600 ALAMEDA AVE, OAKLAND

CUSTOMER P.O. #	SPECIAL INSTRUCTIONS	RETURNED CONCRETE
CUSTOMER JOB ID #	123 FRUITVALE AVE. 7 MIN STEPS IN @ END OF LOADING PROCESS	

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PR
75.00	ea	75.00	RTIBER6	FORTA-ELITE TIBERS		
10.00	ea	85.00	FUEL W6	FUEL SUPPLY		
10.00	ea	95.00	ENV12	ENVIRONMENTAL		
* YD = CUBIC YARD						

BATCH TIME	LEAVE PLANT	ARRIVE JOB	BEGIN POUR	FINISH POUR	LEAVE JOB	ARRIVE AT PLANT	USAGE CODE	SUB TOTAL
03:45								
TOTAL WAIT TIME	PREVIOUS TRUCK	LOAD #	SLUMP	MAP PAGE	TIME DUE ON JOB	TAX RATE	TAX	
	1254				10:15			
DATE	ORDER #	PLANT	TRUCK #	DELIVERY PROFESSIONAL	ORDER GRAND TOTAL	TOTAL		
07/10/14	1307	12	1254	GRIPMAN 475, SLOTT				
DRUM REV - AT PLANT	DRUM REV - START	DRUM REV - FINISH	DEPUTY WEIGHMASTER	WEIGHMASTER CERTIFICATE				
			Robert Jensen	Weight 2400 Per 1 Last, Oakland, CA				



*[Handwritten signature]*



Central  
Bode  
Westside

a U.S. CONCRETE COMPANY

**CENTRAL CONCRETE SUPPLY CO., INC.**

**MAIN OFFICE:**  
755 Stockton Avenue,  
San Jose, CA 95126  
**1-866-404-1000**

**TICKET NUMBER**



**WARNING: IRRITATION TO THE SKIN AND EYES:** Contains Portland Cement. Wear rubber boots and gloves. **PROLONGED CONTACT MAY CAUSE BURNS.** Avoid contact with eyes and prolonged contact with skin. In case of contact with skin or eyes, flush thoroughly with water. If irritation persists, get medical attention. **KEEP CHILDREN AWAY.**

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PLEASE NOTE: THIS LOAD OF CONCRETE IS PRODUCED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR READY MIX CONCRETE ASTM ANY DE-ICING MATERIALS, IMPROPER FINISHING AND LACK OF CURING WILL CAUSE DAMAGE OR A DECREASE IN STRENGTH.

**NOTICE:** MY SIGNATURE BELOW INDICATES THAT I HAVE READ THE HEALTH WARNING NOTICE AND SUPPLIER WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELIVERING INSIDE CURB LINE AND AGREE TO THE TERMS AND CONDITIONS ON REVERSE SIDE. TIME IN EXCESS OF FREE TIME WILL BE CHARGED AT CURRENT DELAY RATE. ALL C.O.D. DELIVERIES MUST BE PAID IN ADVANCE AND LOAD ACCEPTED BY SIGNING THIS DELIVERY TICKET BEFORE POURING.

**LOAD RECEIVED BY:**

X \_\_\_\_\_

**PROPERTY DAMAGE RELEASE**  
(TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)

Dear Customer - The size and weight of this truck could cause damage to the premises and/or adjacent property if this load is placed where you desire. It is our wish to help you in every way that we can, but in order to do this we are requesting that you sign this RELEASE relieving this supplier and its affiliates from any responsibility from damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc., due to the delivery of this material, and that you also agree to help the driver remove mud from the wheels of his vehicle so that it will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier and its affiliates for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED: X \_\_\_\_\_

**WEIGHMASTER CERTIFICATE**

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

**WATER ADDED AT CUSTOMER REQUEST**  
EXCESSIVE WATER IS DETRIMENTAL TO CONCRETE PERFORMANCE

X \_\_\_\_\_  
REQUESTOR'S NAME

SA		
FULL LOAD	1/2 LOAD	1/4 LOAD
(GALLONS)	(GALLONS)	(GALLONS)

**TEST RESULTS**

SLUMP	CONC. TEMP
CYLINDERS TAKEN.	<input type="checkbox"/> YES <input type="checkbox"/> NO
NAME OF TESTING LAB.	

CUSTOMER: ENVIRONMENTAL SERVICES	CUSTOMER CODE: 001	DELIVERY ADDRESS: 3600 ALAMEDA AVE, OAKLAND
PROJECT NAME:	PROJECT CODE:	

CUSTOMER P.O. #	SPECIAL INSTRUCTIONS: 075 FRUITVALE AVE. PUT FIBERS IN @ END OF LOADING PROCESS	RETURNED CONCRETE
CUSTOMER JOB ID #		

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
75.00	0	0	RTREPE	7.5 SK PORTA-PEWED FIBERS 7.5		
10.00	0	0	EFUE:06	FUEL 06 42000 FUEL 06		
10.00	0	0	EBNUE	95.4 WENVIRDMET		
* 10 - CUBIC YARD						

BATCH TIME: 10:14	LEAVE PLANT	ARRIVE JOB	BEGIN POUR	FINISH POUR	LEAVE JOB	ARRIVE AT PLANT	USAGE CODE	SUB TOTAL
TOTAL WAIT TIME	PREVIOUS TRUCK: 1078	LOAD #: 3	SLUMP: 4	MAP PAGE	TIME DUE ON JOB: 10:45	TAX RATE	TAX	
DATE: 03/01/14	ORDER #: 1389	PLANT: 12	TRUCK #: 1213	DELIVERY PROFESSIONAL: TROUP, DANNING	ORDER GRAND TOTAL	TOTAL		

DRUM REV - AT PLANT	DRUM REV - START	DRUM REV - FINISH	DEPUTY WEIGHMASTER: Robert Jensen Weighmaster 100 Peninsula St, Oakland, CA	WEIGHMASTER CERTIFICATE
---------------------	------------------	-------------------	--	-------------------------



13259198



Central  
Bode  
Westside

a U.S. CONCRETE COMPANY

**CENTRAL CONCRETE SUPPLY CO., INC.**

**MAIN OFFICE:**  
755 Stockton Avenue,  
San Jose, CA 95126  
**1-866-404-1000**

**TICKET NUMBER**



**WARNING: IRRITATION TO THE SKIN AND EYES:** Contains Portland Cement. Wear rubber boots and gloves. **PROLONGED CONTACT MAY CAUSE BURNS.** Avoid contact with eyes and prolonged contact with skin. In case of contact with skin or eyes: flush thoroughly with water. If irritation persists, get medical attention. **KEEP CHILDREN AWAY.**

CONCRETE IS A PERISHABLE COMMODITY AND BECOMES THE PROPERTY OF THE PURCHASER UPON LEAVING THE PLANT. ANY CHANGES OR CANCELLATION OF ORIGINAL INSTRUCTIONS MUST BE TELEPHONED TO THE OFFICE BEFORE LOADING STARTS.

WE DO NOT GUARANTEE FINISHED RESULTS OBTAINED FROM THIS LOAD OF CONCRETE AS MANY IMPORTANT FACTORS AFFECTING THE ULTIMATE QUALITY OF THE COMPLETED JOB ARE OUT OF OUR CONTROL. We do not warrant that the concrete can be used in any particular environment or soil conditions or that the concrete is fit for any particular use. Selection of the mix design and/or specification of the mix design parameters are solely the responsibility of the Customer, and we assume no liability therefore.

PLEASE NOTE THIS LOAD OF CONCRETE IS PRODUCED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR READY MIX CONCRETE ASTM. ANY DE-ICING MATERIALS IMPROPER FINISHING AND LACK OF CURING WILL CAUSE DAMAGE OR A DECREASE IN STRENGTH.

NOTICE: MY SIGNATURE BELOW INDICATES THAT I HAVE READ THE HEALTH WARNING NOTICE AND SUPPLIER WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELIVERING INSIDE CURB LINE AND AGREE TO THE TERMS AND CONDITIONS ON REVERSE SIDE. TIME IN EXCESS OF FREE TIME WILL BE CHARGED AT CURRENT DELAY RATE. ALL C.O.D. DELIVERIES MUST BE PAID IN ADVANCE AND LOAD ACCEPTED BY SIGNING THIS DELIVERY TICKET BEFORE POURING.

**LOAD RECEIVED BY:**  
**X**

**PROPERTY DAMAGE RELEASE**  
(TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)

Dear Customer - The size and weight of this truck could cause damage to the premises and/or adjacent property if this load is placed where you desire. It is our wish to help you in every way that we can, but in order to do this we are requesting that you sign this RELEASE relieving this supplier and its affiliates from any responsibility from damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. due to the delivery of this material, and that you also agree to help the driver remove mud from the wheels of his vehicle so that it will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier and its affiliates for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED: **X**

**- WEIGHMASTER CERTIFICATE**

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

**WATER ADDED AT CUSTOMER REQUEST**  
EXCESSIVE WATER IS DETRIMENTAL TO CONCRETE PERFORMANCE.

**X** \_\_\_\_\_  
REQUESTOR'S NAME

SA

FULL LOAD	1/2 LOAD	1/4 LOAD	1/8 LOAD
(GALLONS)	(GALLONS)	(GALLONS)	(GALLONS)

**TEST RESULTS**

SLUMP	CONC. TEMP.	AIR%
-------	-------------	------

CYLINDERS TAKEN.  YES  NO

NAME OF TESTING LAB: \_\_\_\_\_

CUSTOMER <b>ENVIRONMENTAL SERVICES</b>	CUSTOMER CODE #	DELIVERY ADDRESS <b>1500 ALAMEDA AVE., OAKLAND</b>
PROJECT NAME	PROJECT CODE	

CUSTOMER P.O. #	SPECIAL INSTRUCTIONS <b>DO NOT TRUCK TO AVE. 7 PUT FIVE MIN @ END OF LOADING PROCESS...</b>	RETURNED CONCRETE
CUSTOMER JOB ID #		

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
10.00	10	10	7.5 SF 4000	7.5 SF 4000		
75.00	75	85	8.1 BEP	FOR ON-FRONT FINISHES 7.5		
15.00	15	100	8.1 BEP	4.5ELOS *2006 FUEL		
10.00	10	110	8.1 BEP	364		
* 100 CUBIC YARD						

BATCH TIME <b>10:50</b>	LEAVE PLANT	ARRIVE JOB	BEGIN POUR	FINISH POUR	LEAVE JOB	ARRIVE AT PLANT	USAGE CODE	SUB TOTAL
TOTAL WAIT TIME	PREVIOUS TRUCK <b>1211</b>	LOAD # <b>1</b>	SLUMP	MAP PAGE	TIME DUE ON JOB <b>11:00</b>	TAX RATE	TAX	
DATE <b>07/01/14</b>	ORDER # <b>1309</b>	PLANT <b>12</b>	TRUCK # <b>1215</b>	DELIVERY PROFESSIONAL <b>NARANJO, LOPEZ</b>	ORDER GRAND TOTAL	TOTAL		

DRUM REV - AT PLANT	DRUM REV - START	DRUM REV - FINISH	DEPUTY WEIGHMASTER <b>Robert Jensen</b> Weighmaster 2400 Peninsula, Oakland, CA	WEIGHMASTER CERTIFICATE # <b>13259201</b>
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### CENTRAL CONCRETE SUPPLY CO., INC.

**MAIN OFFICE:**  
755 Stockton Avenue,  
San Jose, CA 95126  
**1-866-404-1000**

### TICKET NUMBER



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LOAD RECEIVED BY:

X \_\_\_\_\_

#### PROPERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)

Dear Customer - The size and weight of this truck could cause damage to the premises and/or adjacent property if this load is placed where you desire. It is our wish to help you in every way that we can, but in order to do this we are requesting that you sign this RELEASE relieving this supplier and its affiliates from any responsibility from damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc., due to the delivery of this material, and that you also agree to help the driver remove mud from the wheels of his vehicle so that it will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier and its affiliates for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED: X \_\_\_\_\_

#### WEIGHMASTER CERTIFICATE

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#### WATER ADDED AT CUSTOMER REQUEST EXCESSIVE WATER IS DETRIMENTAL TO CONCRETE PERFORMANCE

X \_\_\_\_\_  
REQUESTOR'S NAME

SA			
FULL LOAD	3/4 LOAD	1/2 LOAD	1/4 LOAD
(GALLONS)	(GALLONS)	(GALLONS)	(GALLONS)

#### TEST RESULTS

SLUMP \_\_\_\_\_ CONC. TEMP. \_\_\_\_\_  
CYLINDERS TAKEN,  YES  NO  
NAME OF TESTING LAB: \_\_\_\_\_

CUSTOMER ENVIRONMENTAL SERVICES

CUSTOMER CODE: \_\_\_\_\_

DELIVERY ADDRESS  
3600 11th Street San Jose, CA 95128

PROJECT NAME

PROJECT CODE

CUSTOMER P.O. #

SPECIAL INSTRUCTIONS  
123 FRUITFUL AVE. 1001 FIRST ST W END OF LOADING PROCESS  
THE 1111 TOP

CUSTOMER JOB ID #

RETURNED CONCRETE

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
10.00	10.00	10.00	025	PORTLAND CEMENT		
10.00	20.00	20.00	025	PORTLAND CEMENT		
10.00	30.00	30.00	025	PORTLAND CEMENT		
10.00	40.00	40.00	025	PORTLAND CEMENT		

BATCH TIME	LEAVE PLANT	ARRIVE JOB	BEGIN POUR	FINISH POUR	LEAVE JOB	ARRIVE AT PLANT	USAGE CODE	SUB TOTAL
11:00								

TOTAL WAIT TIME	PREVIOUS TRUCK	LOAD #	SLUMP	MAP PAGE	TIME DUE ON JOB	TAX RATE	TAX
	1215	5			11:00		

DATE	ORDER #	PLANT	TRUCK #	DELIVERY PROFESSIONAL	ORDER GRAND TOTAL	TOTAL
07/01/14	1300	12	1274	POWERS, DANIEL		

DRUM REV - AT PLANT	DRUM REV - START	DRUM REV - FINISH	DEPUTY WEIGHMASTER
			Robert Teanen Weighmaster 240050001-430, Oakland, CA

WEIGHMASTER CERTIFICATE



13259203

**CENTRAL CONCRETE SUPPLY CO., INC.**

**TICKET NUMBER**

**MAIN OFFICE:**  
755 Stockton Avenue,  
San Jose, CA 95126  
1-866-404-1000



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LOAD RECEIVED BY:

X \_\_\_\_\_

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(TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)

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SIGNED: X \_\_\_\_\_

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**WATER ADDED AT CUSTOMER REQUEST**  
EXCESSIVE WATER IS DETRIMENTAL TO CONCRETE PERFORMANCE.

X \_\_\_\_\_  
REQUESTOR'S NAME

SA	FULL LOAD	1/2 LOAD	1/4 LOAD	1/8 LOAD
(GALLONS)	(GALLONS)	(GALLONS)	(GALLONS)	(GALLONS)

TEST RESULTS		
SLUMP	CONC. TEMP.	AIR%

CYLINDERS TAKEN.  YES  NO

NAME OF TESTING LAB:

CUSTOMER: **NRL ENVIRONMENTAL SERVICES**

CUSTOMER CODE: **N 1202801**

DELIVERY ADDRESS: **3600 ALAMEDA AVE, OAKLAND**

PROJECT NAME:

PROJECT CODE:

CUSTOMER P.O. #

SPECIAL INSTRUCTIONS: **C/S FRUITVALE AVE. PUT FIBERSIN @ END OF LOADING PROCESS... INCH ON JOB//////////**

CUSTOMER JOB ID #

RETURNED CONCRETE

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
10.00 yd	60	60	1701050	7.5 SK AGG W/ NR		
75.00 ea	0	450	PFINERG	FORTA-FERRO FIBERS 7.5		
10.00 ea	0		EFUEL06	FUEL06 *2006 FUEL SURC		
10.00 ea	0		EENV12	964 *ENVIRONMENTAL		

\* YD = CUBIC YARD

BATCH TIME	LEAVE PLANT	ARRIVE JOB	BEGIN POUR	FINISH POUR	LEAVE JOB	ARRIVE AT PLANT	USAGE CODE	SUB TOTAL
11:44								
TOTAL WAIT TIME	PREVIOUS TRUCK	LOAD #	SLUMP	MAP PAGE	TIME DUE ON JOB	TAX RATE	TAX	
	1254	6	4		12:13			
DATE	ORDER #	PLANT	TRUCK #	DELIVERY PROFESSIONAL	ORDER GRAND TOTAL	TOTAL		
07/01/14	1309	12	1258	GONSALVES, SCOTT				

DRUM REV - AT PLANT: \_\_\_\_\_  
DRUM REV - START: \_\_\_\_\_  
DRUM REV - FINISH: \_\_\_\_\_  
DEPUTY WEIGHMASTER: **Robert Jensen**  
Weighat 2400 Peralta St, Oakland, CA

WEIGHMASTER CERTIFICATE #



13259206





Central  
Bode  
Westside

a U.S. CONCRETE COMPANY

### CENTRAL CONCRETE SUPPLY CO., INC.

**MAIN OFFICE:**  
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1-866-404-1000

### TICKET NUMBER



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**LOAD RECEIVED BY:**

X

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SIGNED, X

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X  
REQUESTOR'S NAME

SA			
FULL LOAD	1/2 LOAD	1/4 LOAD	1/8 LOAD
(GALLONS)	(GALLONS)	(GALLONS)	(GALLONS)

TEST RESULTS		
SLUMP	CONC. TEMP.	AIR%

CYLINDERS TAKEN:  YES  NO

NAME OF TESTING LAB:

CUSTOMER ENVIRONMENTAL SERVICES      CUSTOMER CODE: 1      DELIVERY ADDRESS: 3800 BLINDEN AVE, OAKLAND

PROJECT NAME:      PROJECT CODE:

CUSTOMER P.O. #:      SPECIAL INSTRUCTIONS: C/S FRUITVALE AVE. PUT FIBERGLASS @ END OF LOADING PROCESS...

CUSTOMER JOB ID #:      RETURNED CONCRETE:

LOAD QUANTITY	ORDERED QTY	CUMULATIVE QTY	PRODUCT ID	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
5.00	0	487.5	1701050	7.5 SK AGG W/ NR		
5.00	0		REIBERG	FORTA-FERRO FIBERGLASS 7.5		
5.00	0		EFUEL 06	FUEL 06 *2000 FUEL SUR		
5.00	3		FENV12	964 *ENVIRONMENTAL		
* YD = CUBIC YARD				930	*SHORT DAD	

BATCH TIME	LEAVE PLANT	ARRIVE JOB	BEGIN POUR	FINISH POUR	LEAVE JOB	ARRIVE AT PLANT	USAGE CODE	SUB TOTAL
14:03								

TOTAL WAIT TIME	PREVIOUS TRUCK	LOAD #	SLUMP	MAP PAGE	TIME DUE ON JOB	TAX RATE	TAX
	12:58	7	4		14:44		

DATE	ORDER #	PLANT	TRUCK #	DELIVERY PROFESSIONAL	ORDER GRAND TOTAL	TOTAL
07-01-14	1304	12	1254	RIGERS, DANTEL		

DRUM REV - AT PLANT	DRUM REV - START	DRUM REV - FINISH	DEPUTY WEIGHMASTER
			Robert Jensen Weighmaster 2400 Peralt St, Oakland, CA

#### WEIGHMASTER CERTIFICATE #



1325219

## Appendix 9: Photographs



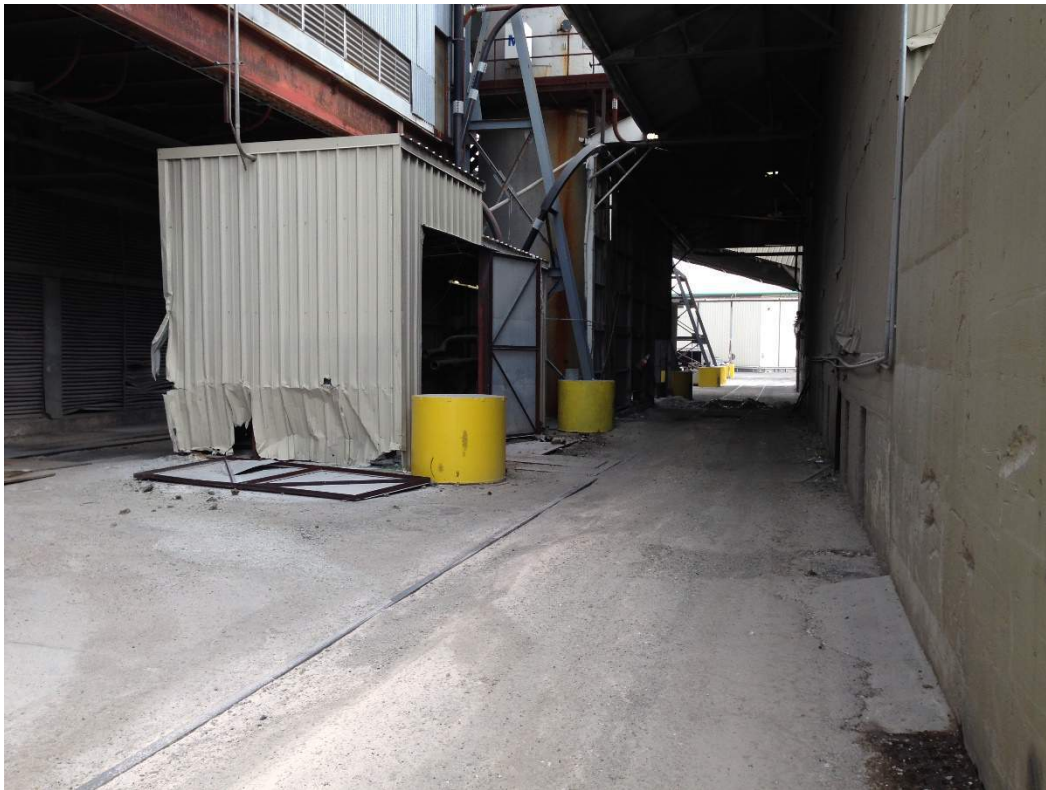


Figure 1: Ex C Prior to Hi-Vac Removal



Figure 2: Ex C Pothole



Figure 3: Ex C Dewatering Pothole





Figure 4: Backfilling Pothole



Figure 5: Removing Asphalt Surface



Figure 6: Removing RR Tracks



Figure 7: Saw-cutting RR Bolts





Figure 8: Beginning Excavation @ Ex C



Figure 9: Dead Pipelines @ Ex C



Figure 10: Placing Shoring @ Ex C



Figure 11: Shoring @ Ex C





Figure 12: Bottom of Ex C



Figure 13: Ramp into Ex C



Figure 14: Compacting Backfill @ Ex C





Figure 15: Backfill Compaction Completed @ Ex C



Figure 16: Compaction Tests @ Ex C



Figure 17: Aggregate Base Compacted @ Ex C





Figure 18: Concrete Pour @ Ex C



Figure 19: Concrete Pour @ Ex C





Figure 20: Finishing Touches @ Ex C





Figure 21: Ex E Prior to Excavation



Figure 22: Exposed water pipe @ Ex E





Figure 23: Tar-like Residuals on Water Pipe @ Ex E



Figure 24: Side of Ex E



Figure 25: Bottom of Ex E





Figure 26: Pouring ORC @ Ex E

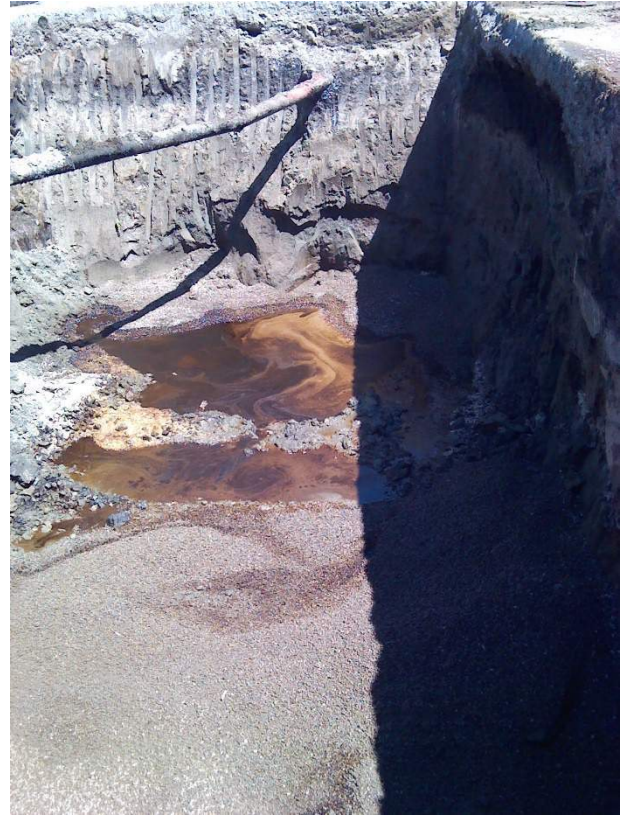


Figure 27: Laying Drainage Rock @ Ex E



Figure 28: Backfill Ramp Into Ex E





Figure 29: Dewatering Ex E



Figure 30: Dewatering Ex E



Figure 31: Sawcutting Water Pipe @ Ex E



Figure 32: Removed Water Pipe @ Ex E





Figure 33: Compacting Backfill @ Ex E



Figure 34: Compaction Test @ Ex E



Figure 35: Scraping Backfill Lift @ Ex E



Figure 36: Drilling Dowel Holes @ Ex E





Figure 37: Aggregate Base Compaction @ Ex E



Figure 38: Aggregate Base Compaction Test Locations @ Ex E



Figure 39: Aggregate Base Compaction Tests @ Ex E



Figure 40: Water Pipe Trench @ Ex E





Figure 41: Sleeve Coupling for Water Pipe @ Ex E



Figure 42: Replaced Water Pipe @ Ex E



Figure 43: Trench Backfill Compaction Test @ Ex E



Figure 44: Saw-cut @ Ex E





Figure 45: Concrete Pour @ Ex E



Figure 46: Concrete Resurfacing @ Ex E





Figure 47: Finishing Touches @ Ex E

## Appendix 10: Landfill Disposal Records

AREA E DIRECT  
CHANGE ORDER 1

1/3

Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - 504305 (USA)

User: tvierra

Date: Jun 26 2014, 9:56:47 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618135CA

Ticket Date	Ticket ID	Manifest	Truck	Tons
6/17/2014	1042696	83886-eb-02	9e98601	19.56
6/17/2014	1042700	83886-eb-01	9D95172	13.02
6/17/2014	1042703	83886-eb-03	7m50287	17.91
6/17/2014	1042704	83886-eb-04	9e12294	22.1
6/17/2014	1042705	83886-eb-05	6M49733WT	19.52
6/17/2014	1042707	83996-eb-06	9B80765WT	20.43
6/17/2014	1042713	83886-eb-07	9b69932	20.73
6/17/2014	1042734	83886-eb-08	9b58789	18.21
6/17/2014	1042748	83886-eb-10	9d10197	19
6/17/2014	1042752	83886-eb-09	9C33196	15.03
6/17/2014	1042759	83886-eb-12	9f02624	16.06
6/17/2014	1042760	83886-eb-11	9d83200	18.56
6/17/2014	1042761	83886-eb-13	9e98601	20.09
6/17/2014	1042765	83886-eb-14	9d10196	19.81
6/17/2014	1042768	83886-eb-15	7m50287	19.57
6/17/2014	1042769	83886-eb-16	9e12294	24.17
6/17/2014	1042772	83886-eb-17	9B80765WT	20.13
6/17/2014	1042781	83886-eb-18	9D95172	20.37
6/17/2014	1042790	83889-eb-20	9d10197	25.49
6/17/2014	1042791	83886-eb-19	9b58789	22.75
6/17/2014	1042804	83886-eb-21	9C33196	17.03
6/17/2014	1042806	83886-eb-23	9e98601	20.92
6/17/2014	1042815	83886-EB-22	9D67290	23.74
6/17/2014	1042816	83886-EB-24	9d10196	19.23
6/17/2014	1042817	83886-EB-25	9e12294	20.33
6/17/2014	1042818	83886-EB-26	7m50287	21.59
6/17/2014	1042821	83886-EB-27	9d83200	18.97
6/17/2014	1042822	83886-EB-28	9f02624	18.01
6/17/2014	1042824	83886-EB-30	9b94589	23.12
6/17/2014	1042832	83886-EB-29	9B80765WT	20.53
6/17/2014	1042833	83886-EB-31	9D95172	18.86
6/17/2014	1042835	83886-EB-32	9d10197	19.71

6/17/2014	1042856	83886-EB-33	9b58789	20.02
6/17/2014	1042869	83886-EB-34	9e98601	21.89
6/17/2014	1042873	83886-EB-36	9D67290	22.52
6/17/2014	1042874	83886-EB-37	9d10196	21.57
6/17/2014	1042875	83886-EB-38	7m50287	19.59
6/17/2014	1042880	83886-EB-35	9C33196	15.82
6/17/2014	1042881	838896-EB-39	9e12294	23.27
6/17/2014	1042882	83886-EB-41	9b94589	25.42
6/17/2014	1042885	83886-EB-42	9d83200	21.81
6/17/2014	1042889	83886-EB-40	9f02624	20.68
6/17/2014	1042890	83886-eb-43	9D95172	20.51
6/18/2014	1042902	83886-eb-46	9e98601	20.71
6/18/2014	1042904	83886-eb-44	9B80765WT	22.38
6/18/2014	1042908	83886-eb-45	9b58789	21.74
6/18/2014	1042909	83886-eb-47	9d10197	21.1
6/18/2014	1042911	83886-eb-49	7m50287	23.59
6/18/2014	1042912	83886-eb-48	9e12294	24.41
6/18/2014	1042913	83886-eb-50	9D95172	21.15
6/18/2014	1042916	83886-eb-51	9d10196	21.25
6/18/2014	1042918	83886-ed-52	9E36439	24.73
6/18/2014	1042919	83886-eb-53	9D00172-SS164	23.53
6/18/2014	1042933	83886-eb-56	7f84519	25.07
6/18/2014	1042934	83886-eb-54	9E04434	23.08
6/18/2014	1042936	83886-eb-55	9e98601	22.27
6/18/2014	1042944	83886-eb-58	9B80765WT	22.04
6/18/2014	1042955	83886-eb-57	9d64281	23.47
6/18/2014	1042967	83886-eb-59	9d10197	22.53
6/18/2014	1042972	83886-eb-61	9b75249	20.42
6/18/2014	1042978	83886-eb-60	9b58789	21.68
6/18/2014	1042981	83886-eb-62	9e12294	21.93
6/18/2014	1042982	83886-eb-63	7m50287	21.86
6/18/2014	1042984	83886-eb-65	9d10196	26.14
6/18/2014	1042988	83886-eb-66	9D00172-SS164	25.34
6/18/2014	1042992	83886-eb-64	9D95172	17.91
6/18/2014	1042994	83886-eb-67	7f84519	24.99
6/18/2014	1042998	83886-eb-68	9e98601	25.2
6/18/2014	1043005	83886-eb-69	9E04434	22.68
<b>Material Total</b>	69			1458.85
<b>Customer Total</b>	69			1458.85
<b>Ticket Totals</b>	69			1458.85

### Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra  
Date: Jun 26 2014, 9:56:47 AM - Central Standard Time  
Operation Type: All  
Customer Name: All  
Ticket Type: All  
Customer Type: All  
PMT Category: All  
Profile: 618135CA

Internal Customer	Loads
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Customer Summary Report  
Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM  
Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra  
Date: Jun 26 2014, 9:56:47 AM - Central Standard Time  
Operation Type: All  
Customer Name: All  
Ticket Type: All  
Customer Type: All  
PMT Category: All  
Profile: 618135CA

External Customer	Loads
NRC ENVIRONMENTAL SERVICES	69

AREA E COVER

1/2

BID ITEM 9A

Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra

Date: Jun 26 2014, 9:53:47 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618134CA

Ticket Date	Ticket ID	Truck	Tons
6/17/2014	1042690	9d10197	22.63
6/17/2014	1042691	9d83200	19.49
6/17/2014	1042695	9f02624	18.33
6/17/2014	1042699	9d10196	20.58
Material Total	4		81.03
Customer Total	4		81.03
Ticket Totals	4		81.03

Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra

Date: Jun 26 2014, 9:53:47 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618134CA

Internal Customer	Loads
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Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra

Date: Jun 26 2014, 9:53:47 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618134CA

External Customer	Loads
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NRC ENVIRONMENTAL SERVICES	4
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AREA C COVER  
 B O I T E M 30

1/3

Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra

Date: Jun 26 2014, 9:58:28 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618211CA

Ticket Date	Ticket ID	Manifest	Truck	Tons
6/24/2014	1043690	na	9D00172-SS164	22.27
6/24/2014	1043720	83886-ct-02	69531j1	19.82
6/24/2014	1043724	83886-ct-03	8X62738	29.07
6/24/2014	1043762	83886-ct-04	9D00172-SS164	26.56
6/24/2014	1043780	83886-ct-06	69531j1	24.41
6/24/2014	1043786	83886-05	8X62738	28.71
6/24/2014	1043801	83886-ct-07	9D00172-SS164	21.08
6/24/2014	1043824	83886-ct-08	69531j1	18.43
6/24/2014	1043834	83886-ct-09	8X62738	28.44
6/25/2014	1043874	83888-ct-010	9D00172-SS164	26.69
6/25/2014	1043882	83888-ct-011	9b58789	23.95
6/25/2014	1043898	83886-ct-012	9d83396	21.9
6/25/2014	1043931	83886-ct-013	9D00172-SS164	23.12
6/25/2014	1043942	83886-ct-014	9b58789	20.16
6/25/2014	1043960	86886-ct-016	9d83396	20.61
6/25/2014	1043988	83886ct017	9D00172-SS164	22.42
6/25/2014	1043993	83886-ct-015	9b58789	23.39
6/25/2014	1043995	83886-ct-018	9d83396	23.64
Material Total	18			424.67
6/20/2014	1043392		NONE	0
Material Total	1			0
Customer Total	19			424.67
Ticket Totals	19			424.67

Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra

Date: Jun 26 2014, 9:58:28 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618211CA

Internal Customer	Loads
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Customer Summary Report

Criteria: 06/17/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - S04305 (USA)

User: tvierra

Date: Jun 26 2014, 9:58:28 AM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618211CA

External Customer	Loads
NRC ENVIRONMENTAL SERVICES	19

Customer Summary Report

Criteria: 06/26/2014 12:00 AM to 06/26/2014 11:59 PM

Business Unit Name: Altamont Landfill & Resource Recovery Facility - 504305 (USA)

User: tvierra

Date: Jun 26 2014, 6:22:55 PM - Central Standard Time

Operation Type: All

Customer Name: All

Ticket Type: All

Customer Type: All

PMT Category: All

Profile: 618211CA

Ticket Date	Ticket ID	Manifest	Truck	Tons
6/26/2014	1044053	82886-ct-020	9D00172-SS164	20.87
6/26/2014	1044152	83886-ct-019	9D00172-SS164	15.29
Material Total	2			36.16
Customer Total	2			36.16
Ticket Totals	2			36.16

External Customer	Loads
NRC ENVIRONMENTAL SERVICES	2