City of Emeryville
INCORPORATED 1896
1333 Park Avenue
Emeryville, California 94608-3517
Tel: (510) 596-4300 | Fax: (510) 596-4389

RECEIVED
By Alameda County Environmental Health 11:32 am, Nov 15, 2016

November 11, 2016

Mr. Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Data Gap Investigation Report
for City of Emeryville Former Fire Station UST Site

Reference: Alameda County Fuel Leak Case No. RO0000068
GeoTracker Global ID T0600101848

Dear Mr. Detterman:

The City of Emeryville is pleased to submit the attached Data Gap Investigation Report for the City's former Fire Station UST site, which is located at 4331 San Pablo Avenue, Emeryville, CA. The report was prepared by OTG EnviroEngineering Solutions, Inc. (OTG) under a consultant service contract with the City of Emeryville.

**Certification**

I certify under penalty of law that this document and all attachments are prepared by OTG under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact Mr. Xinggang Tong at (510) 465-8982 or myself at (510) 596-3728 if you have questions or comments.

Sincerely,
**City of Emeryville**

Nancy Humphrey
Environmental Programs Analyst

OTG EnviroEngineering Solutions, Inc.

November 11, 2016

Mr. Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Data Gap Investigation Report, City of Emeryville Former Fire Station UST Site

Reference: Alameda County Fuel Leak Case No. RO0000068
GeoTracker Global ID T0600101848

Dear Mr. Detterman:

OTG EnviroEngineering Solutions, Inc. (OTG) is pleased to present this *Data Gap Investigation Report* for the City of Emeryville Former Fire Station UST Site. Field sampling was conducted on October 4, 2016. The scope of the investigation followed the *Data Gap Investigation Work Plan* (OTG, February 4, 2016) and the approval letter from Alameda County Environmental Health (ACEH, March 30, 2016).

**Certification**

*I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Please call Xinggang Tong at (510) 465-8982 or Nancy Humphrey at (510) 596-3728 if you have questions or comments.

Sincerely,
***OTG EnviroEngineering Solutions, Inc.***


Xinggang Tong, PhD, PE
Project Manager

Attachments

# DATA GAP INVESTIGATION REPORT

# CITY OF EMERYVILLE
# FORMER FIRE STATION UST SITE

# 4331 SAN PABLO AVENUE
# EMERYVILLE, CALIFORNIA

**Alameda County Fuel Leak Case No. RO0000068**
**Geotracker Global ID T0600101848**

Prepared for

**City of Emeryville**
**Public Works Department**
**1333 Park Avenue**
**Emeryville, CA94608**

November 11, 2016

Prepared by

**oTG**
**Enviroengineering Solutions, Inc.**

7700 Edgewater Drive, Suite 260
Oakland, CA 94621

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## FIGURES



## TABLES



## APPENDICES

# 1 INTRODUCTION

This report presents the results of field investigation conducted at the City of Emeryville former Fire Station located at 4331 San Pablo Avenue, Emeryville, California (the Site or the former Fire Station, Figure 1) on October 4, 2016. The scope of the investigation is discussed in *Data Gap Investigation Work Plan & Focused Site Conceptual Model* (OTG, February 4, 2016) and incorporates comments in the approval letter from Alameda County Environmental Health (ACEH, March 30, 2016). The purpose of the investigation is to determine current levels of potential chemicals of concerns (PCOCs), including petroleum hydrocarbons and potentially chlorinated volatile organic hydrocarbons (CVOCs). Specific activities performed include drilling and collection of soil samples from two locations and laboratory analysis of the collected samples for Total Petroleum Hydrocarbons (TPH) as gasoline (TPH-g), as diesel (TPH-d), and as motor oil (TPH-mo), and for VOCs including Methyl Tert Butyl Either (MTBE), and Naphthalene. Groundwater was not encountered during the drilling and thus, no groundwater samples were collected during this investigation.

# 2. BACKGROUND

The City operated a fire station at 4331 San Pablo Avenue from the early of 1910s to around 1995 (Lowney Associates, 1999). A 500-gallon underground fuel storage tank (UST) provided fueling services to the station's fire engines. The UST and associated equipment and underground piping were removed on July 26, 1994 under the supervision of ACEH (SEACOR, 1994a & 1994b). Approximately 20 cubic yards of petroleum hydrocarbon impacted soil was also excavated at the time of the UST removal. A soil sample was collected from each of the four sidewalls of the UST excavation pit at the depth of seven (7) feet below ground surface (bgs). In addition, a soil sample was also collected from the base of excavation pit at the fuel dispenser island at 3 ft bgs. The five soil samples were analyzed for TPH-gas, TPH-diesel, and BTEX. TPH-gas ranged from 3 to 190 mg/kg, TPH-diesel from ND (10) to 260 mg/kg, and benzene from ND (0.005) to 0.38 mg/kg.

A 2"-diameter groundwater monitoring well (MW-1) was installed approximately 10 feet downgradient of the former UST to a depth of 23 feet bgs, with screen from 6 to 21 feet bgs, on February 21, 1995 (SEACOR, 1995). The well was monitored quarterly in 1995 for TPH-gas, TPH-diesel, and BTEX. Groundwater levels varied from 4.79 to 11.91 feet below grade. At the fourth and the last documented monitoring event conducted on December 11, 1995, TPH-gas was measured at 8.7 mg/L, TPH-diesel at 98 mg/L, and benzene at 230 ug/L (SEACOR, 1996). The well was destroyed during the site redevelopment in the early 2000s.

The Site is located within a redevelopment area called "Emery Village Center" and is now part of a parking lot of the CVS Pharmacy Store as shown on Figure 2.

## 3. FIELD ACTIVITIES

Boreholes SB-1 and SB-2 were drilled and sampled on October 4, 2016 at the locations shown on Figure 3. They are located in the downgradient direction of the former UST and the former sump.

Pre-drilling activities included:

- Marking drilling locations with white paint on September 21, 2016;
- Notifying Underground Service Alert for the proposed drilling activities on September 22, 2016;
- Obtaining drilling permit from Alameda County Public Works Agency, a copy of the permit is included in Appendix A;
- Arranging 1st Call Utility Locating of El Cerrito CA, a private utility surveyor, to survey underground utilities in the proposed drilling area on October 4, 2016.

PeneCore Drilling, Inc. of Woodland, California performed the drilling under the supervision of an OTG professional civil engineer. The borings were drilled using a Geoprobe™ 6610DT direct-push rig equipped with DT22 dual-core samplers, which has a 2 ¼" outside diameter (O.D.). Continuous soil core samples were retrieved with 5'-long, 1 3/8"-O.D (1-1/8"-ID) clear PVC liners for inspection, lithologic logging, and analysis. The retrieved liners with core soil samples were first opened for visual inspection and screening for levels of volatile organic compounds (VOCs) with a miniRae 3000 photoionization detector (PID) equipped with a 10.6 eV lamp. Soil samples selected based on visual inspection and PID readings were transferred into glass jars, which were then sealed with Teflon sheet lined caps, labeled, wrapped in individual Ziploc® plastic bags, and placed on ice in a cooler. The remaining core soil samples were further examined for lithologic logging. Boring logs are included in Appendix B. Soil samples were collected from 4 – 4.5 ft bgs, 9.5 – 10 ft bgs, 13 – 13.5 ft bgs, and 22 – 22.5 ft bgs. Soil samples from the 13 – 13.5 ft bgs recorded the highest PID readings in the field.

It was expected to encounter groundwater between 5 to 12 feet below ground surface (bgs) based on groundwater monitoring conducted on site in 1995. However, when SB-1 was first drilled to 15 feet bgs, there was no groundwater. It was then deepened to 25 feet bgs, and again no groundwater was encountered. The soil core samples were all relatively dry from top to bottom. SB-2 was drilled to 20 feet bgs and again no groundwater was encountered. Even though no free water was observed from any of the retrieved soil core samples, 10-foot section, ¾"-diameter PVC screen followed by riser PVC piping was inserted into each of the two boreholes and then the outer core sampler was pulled out to 3 feet bgs. The two boreholes were still completely dry after waiting between 2.5 and 3 hours.

After consultation with the County drilling inspector, it was decided to abandon the boreholes on the same day of drilling without further waiting for the possibility of groundwater appearance. The boreholes were backfilled by tremie with a cement grout mixture in accordance with the drilling permit specifications. Soil cuttings were transferred to a soil drum located at Fire Station #2 for proper disposal following receipt of laboratory analytical reports. The driller brought sufficient number of clean samplers to the site and no on-site washing was

performed. Therefore, no water was produced in this investigation that would otherwise require off-site disposal.

The soil samples selected for analysis were transported under chain-of-custody procedures to Curtis & Tompkins environmental laboratory in Berkeley, California. Analyses included EPA Method 8015B for TPH-g, TPH-d, & TPH-mo and EPA Method 8260B for VOCs including MTBE and Naphthalene. Soil samples that had the highest field PID reading from each borehole were analyzed for TPH-d and TPH-mo both with and without silica gel cleanup.

## 4. RESULTS

The analytical data received from the laboratory is found to be of acceptable quality. Laboratory analytical reports are included in Appendix C. Table 1 summarizes individual chemicals and constituents that had concentrations detected at or above their respective reporting limits, along with the latest Environmental Screening Levels (ESLs, San Francisco Bay Regional Water Quality Control Board, February 2016 Edition).

Based on the laboratory analytical data and field PID screening, it appears that a thin layer of subsurface soil between 13 feet and 15 feet bgs has been impacted by TPH-g, TPH-d, BTEX, and Naphthalene. Within this layer of soil, TPH-g was detected at up to 330 mg/kg (SB-1-13), TPH-d up to 120 mg/kg without silica gel cleanup and 100 mg/kg with silica gel cleanup (SB-2-13), Benzene up to 71 ug/kg (SB-2-13), Ethylbenzene up to 5,700 ug/kg (SB-1-13), total Xylenes up to 5,200 ug/kg (SB-1-13) and Naphthalene up to 3,300 ug/kg (SB-1-13). TPH-d and TPH-mo were also detected from the two shallow soil samples (4 to 4.5 ft bgs) at up to 14 and 150 mg/kg, respectively. MTBE and chlorinated VOCs were not detected from any of the seven soil samples at or above their respective reporting limits.

## 5. DISCUSSIONS

The following two factors likely contributed to the disappearance of the shallow groundwater zone:

1) The drought conditions that have persisted in the past several years in the Bay Area and in the State of California as a whole. Although it had a near normal rain season prior to this investigation, it is apparently still insufficient to restore the shallow groundwater zone.
2) Rapid development in the past two decades resulted in impermeable pavement over most part of the land within City of Emeryville, which significantly reduced surface water infiltration to the shallow groundwater zone. Rainwater within the City now mostly flows into a storm water collection system and discharges into the Bay.

The disappearance of the shallow groundwater beneath the Site may very likely be permanent. In such a situation, this case should be treated as soil contamination only. The following three ESLs are included in Table 1:

- ESL – Direct Exposure. This is the lowest of commercial/industrial shallow soil exposure or any land use/any depth soil exposure (construction worker) based on human health risk;

- ESL – Gross Contamination. For Total Petroleum Hydrocarbons, this is the residual saturation, above which LNAPL in soil may be mobile or migrating (i.e., free product);

- ESL – Odor Nuisance. This is the lowest of commercial/industrial shallow soil exposure or any land use deep soil exposure (construction worker) based on odor nuisance.

As summarized in Table 1, none of the constituents and individual chemicals is detected at the concentration above its lowest of the three ESLs. Therefore, the site appears to be ready for closure as a soil contamination case only.

## 6. REFERENCES


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San Francisco Bay Regional Water Quality Control Board, 2016. Environmental Screening Levels (Rev. 3, February 2016).

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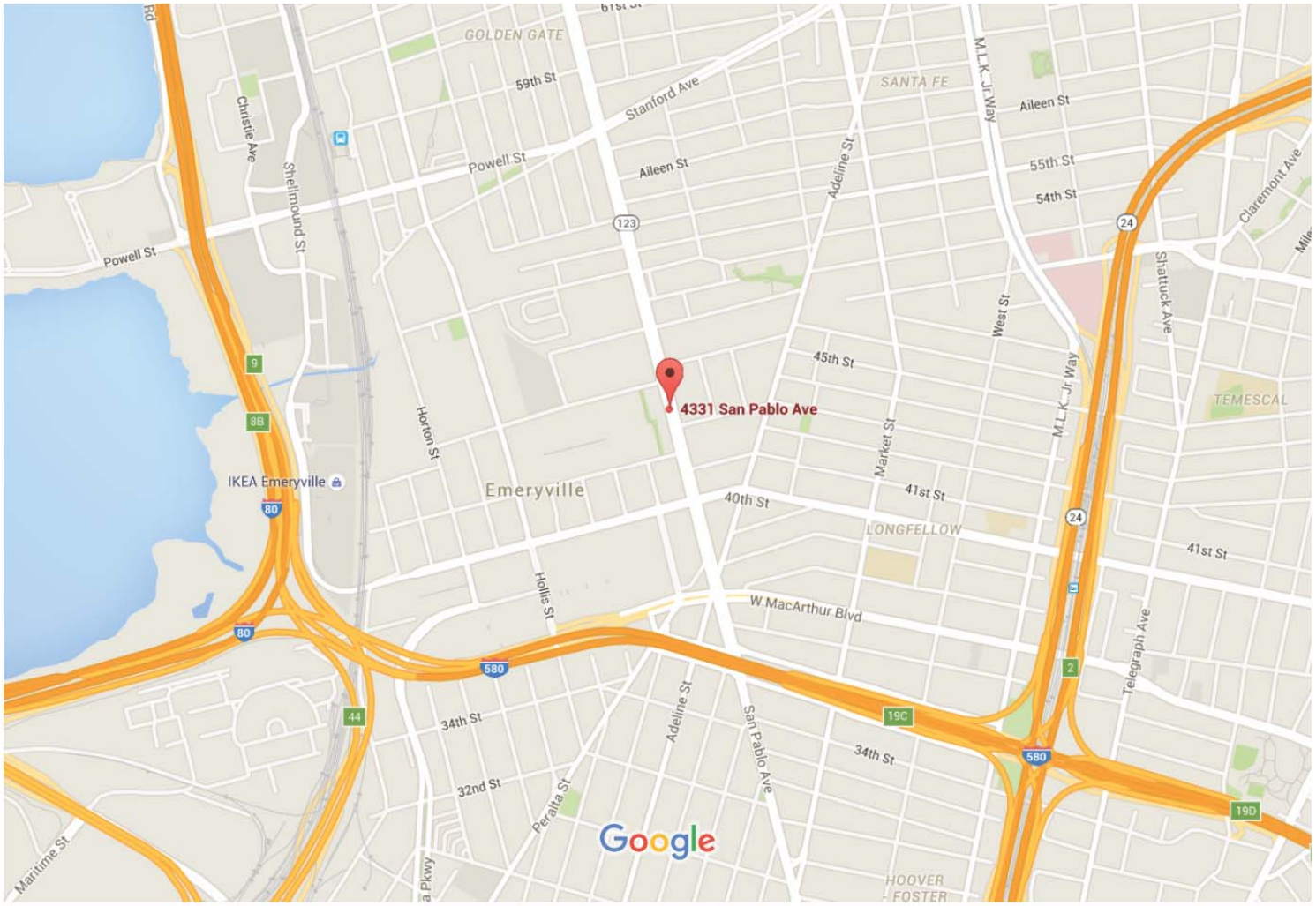
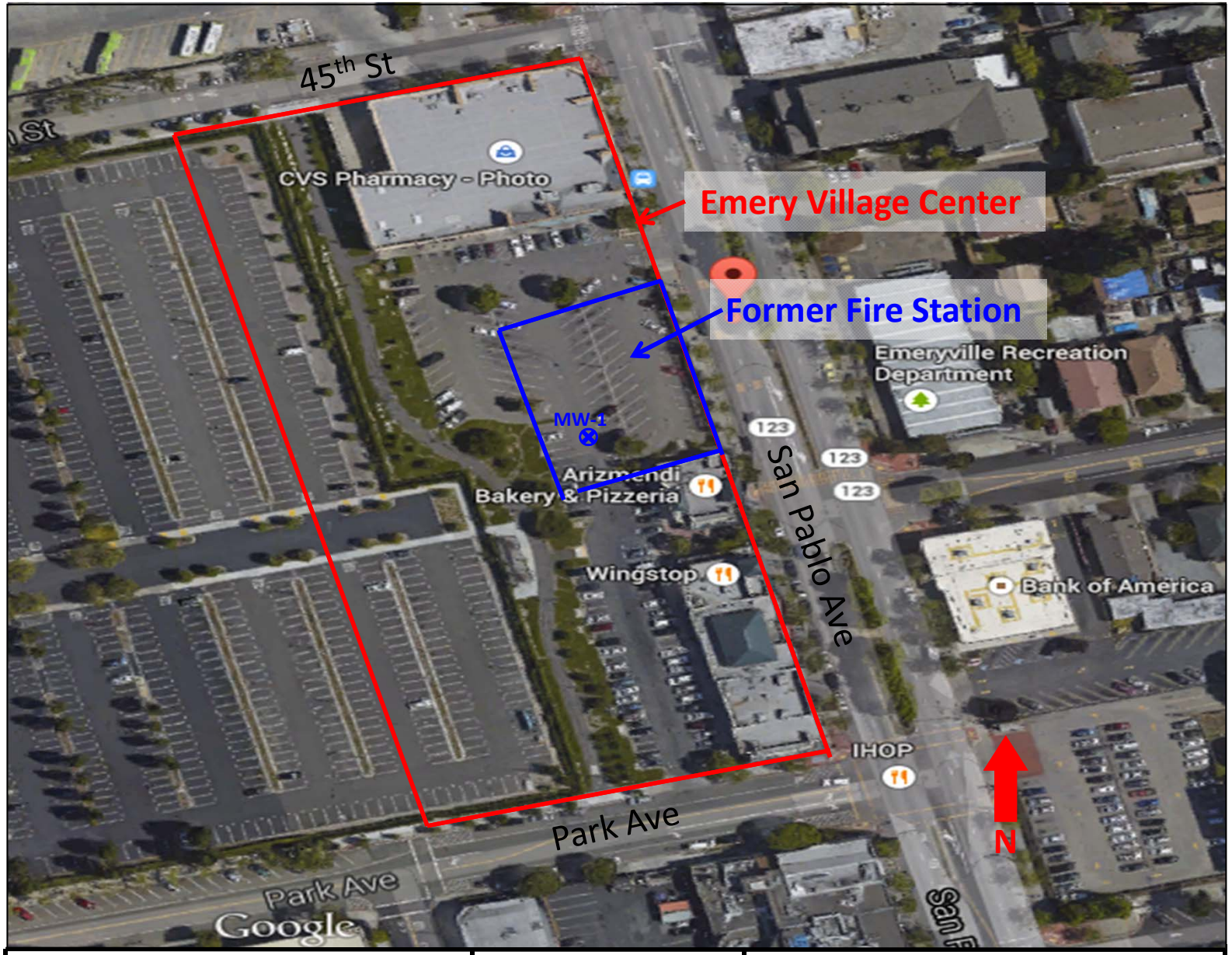
SEACOR, 1994b, Soil Sampling Results, 4331 San Pablo Avenue, Emeryville, California (August 25, 1994).

SEACOR, 1995, Results of Preliminary Groundwater Investigation and Quarterly Monitoring, City of Emeryville Former Fire Station Project, 4331 San Pablo Avenue, Emeryville, California (September 8, 1995).

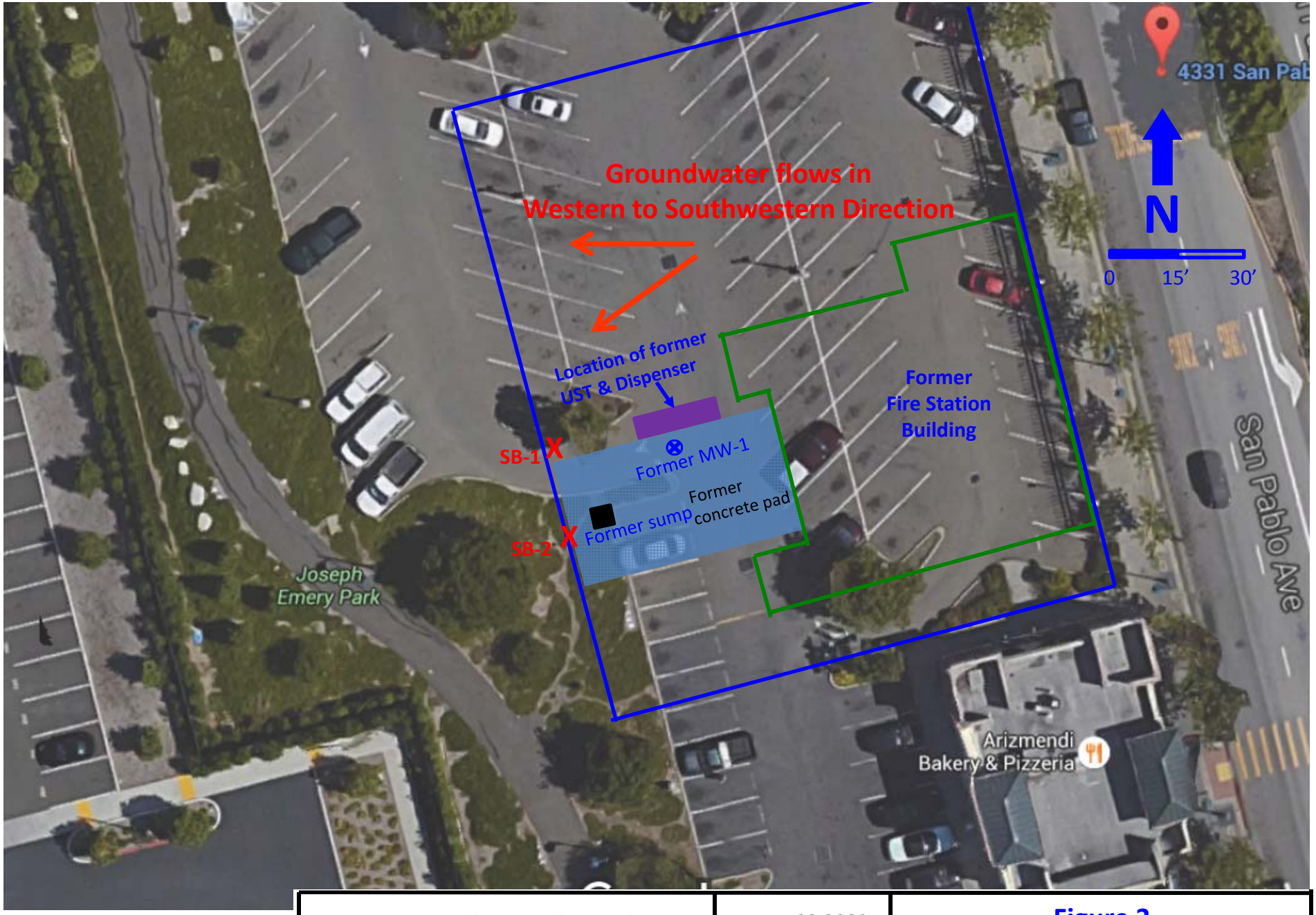
SEACOR, 1996, Quarterly Groundwater Monitoring Report, Fourth Quarter 1995, City of Emeryville Former Fire Station Project, 4331 San Pablo Avenue, Emeryville, California (February 20, 1996).




| | | |
|---|---|---|
| EnviroEngineering Solutions, Inc. | 14EMV03.3000 | Figure 1 - Location of City of Emeryville Former Fire Station<br>4331 San Pablo Avenue, Emeryville, CA |
| | January, 2016 | |




| | | |
|---|---|---|
| EnviroEngineering Solutions, Inc. | 14EMV03.3000 | Figure 2 - Location of City of Emeryville Former Fire Station |
| | January, 2016 | 4331 San Pablo Avenue, Emeryville, CA |




X **Boring location**
**October 4, 2016**

| | | |
|---|---|---|
| EnviroEngineering Solutions, Inc. | 14EMV03.3000 | **Figure 3** |
| | January 2016 | **Boring Location (10/4/16)** 4331 San Pablo Avenue, Emeryville, CA |

**Table 1** - Summary of Soil Analytical Results (October 4th, 2016 Sampling Event)
City of Emeryville Former Fire Station at 4331 San Pablo Ave, Emeryville, CA

| | | Soil Sample ID and Collection Depth (October 4th, 2016 Sampling Event) | | | | | | | ESLs (note C) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chemicals** | | **SB-1-4** | **SB-1-9** | **SB-1-13** | **SB-1-22** | **SB-2-4** | **SB-2-9** | **SB-2-13** | **direct** | **gross** | **odor** |
| | | (4-4.5 ft bgs) | (9.5-10 ft bgs) | (13-13.5 ft bgs) | (22-22.5 ft bgs) | (4-4.5 ft bgs) | (9.5-10 ft bgs) | (13-13.5 ft bgs) | **exposure** | **contaminati** | **Nuisance** |
| | | | | | | | | | | | |
| Total Petroleum Hydrocarbons by EPA Method 8015B | | | | | | | | | | | |
| | | | | | | | | | | | |
| TPH-gas | mg/kg | ND (0.93) | ND (1.0) | **330** | ND (1.0) | ND (1.0) | ND (1.0) | **93** | 2,800 | 1,000 | **500** |
| TPH-diesel (Note A) | mg/kg | **12** (note Y) | ND (1.0) | **56** | ND (1.0) | **14** (note Y) | ND (1.0) | **120** | **880** | 2,300 | 1,000 |
| TPH-diesel (Note B) | mg/kg | | | **39** | | | | **100** | | | |
| TPH-mo (Note A) | mg/kg | **120** | ND (5.0) | ND (5.0) | ND (5.0) | **150** | ND (5.0) | ND (5.0) | 32,000 | **5,100** | --- |
| TPH-mo (Note B) | mg/kg | | | ND (5.0) | | | | ND (5.0) | | | |
| | | | | | | | | | | | |
| VOCs by EPA Method 8260B | | | | | | | | | | | |
| | | | | | | | | | | | |
| Benzene | ug/kg | ND (4.9) | ND (4.5) | ND (1,000) | ND (4.6) | ND (4.9) | ND (4.5) | **71** | **1,000** | 870,000 | 1,000,000 |
| Toluene | ug/kg | ND (4.9) | ND (4.5) | ND (1,000) | ND (4.6) | ND (4.9) | ND (4.5) | ND (53) | 4,100,000 | **650,000** | 1,000,000 |
| Ethylbenzene | ug/kg | ND (4.9) | ND (4.5) | **5,700** | ND (4.6) | ND (4.9) | ND (4.5) | **1,200** | **22,000** | 400,000 | 1,000,000 |
| Total Xylenes | ug/kg | ND (4.9) | ND (4.5) | **5,200** | ND (4.6) | ND (4.9) | ND (4.5) | **980** | 2,400,000 | **420,000** | 1,000,000 |
| MTBE | ug/kg | ND (4.9) | ND (4.5) | ND (1,000) | ND (4.6) | ND (4.9) | ND (4.5) | ND (53) | **180,000** | 21,000,000 | 500,000 |
| Naphthalene | ug/kg | ND (4.9) | ND (4.5) | **3,300** | ND (4.6) | ND (4.9) | ND (4.5) | **1,300** | 350,000 | **220,000** | 1,000,000 |
| | | | | | | | | | | | |
| Acetone | ug/kg | ND (19) | 49 | ND (4,000) | ND (18) | ND (20) | 39 | ND (210) | 2.60E+08 | 1.00E+08 | 1,000,000 |
| 2-Butanone | ug/kg | ND (9.7) | 13 | ND (2,000) | ND (9.2) | ND (9.8) | ND (9.0) | ND (110) | --- | --- | --- |
| Isopropylbenzene | ug/kg | ND (4.9) | ND (4.5) | ND (1,000) | ND (4.6) | ND (4.9) | ND (4.5) | 270 | --- | --- | --- |
| Propylbenzene | ug/kg | ND (4.9) | ND (4.5) | 4,400 | ND (4.6) | ND (4.9) | ND (4.5) | 1,500 | --- | --- | --- |
| 1,3,5-trimethyl benzene | ug/kg | ND (4.9) | ND (4.5) | 5,300 | ND (4.6) | ND (4.9) | ND (4.5) | 540 | --- | --- | --- |
| 1,2,4-trimethyl benzene | ug/kg | ND (4.9) | ND (4.5) | 21,000 | ND (4.6) | ND (4.9) | ND (4.5) | 770 | --- | --- | --- |
| sec-Butylbenzene | ug/kg | ND (4.9) | ND (4.5) | ND (1,000) | ND (4.6) | ND (4.9) | ND (4.5) | 86 | --- | --- | --- |
| para-Isopropyl toluene | ug/kg | ND (4.9) | ND (4.5) | ND (1,000) | ND (4.6) | ND (4.9) | ND (4.5) | 76 | --- | --- | --- |
| n-Butylbenzene | ug/kg | ND (4.9) | ND (4.5) | 2,000 | ND (4.6) | ND (4.9) | ND (4.5) | 240 | --- | --- | --- |
| | | | | | | | | | | | |
| All other VOCs | ug/kg | ND | ND | ND | ND | ND | ND | ND | | | |
| | | | | | | | | | | | |

**Notes:**

A = without silica gel cleanup

B = with silica gel cleanup

bgs = below ground surface

Y = Sample exhibits chromatographic pattern which does not resemble standard.

ND = Not Detected at or above the reporting limit shown in parentheses.

C = ESLs from San Francosco Bay Regional Water Quality Control Board February 2016 Edition.

ESL (direct exposure) is the lowest of Com/Ind shallow soil exposure and Any Land Use/Any Depth soil construction exposure.

ESL (gross contamination) is the residual saturation, above which LNAPL in soil may be mobile or migrating (i.e., free product).

ESL (odor nuisance) is the lowest of Com/Ind shallow soil exposure and Any Land Use deep soil exposure.

# APPENDIX A

Copy of Drilling Permit

# Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

**Application Approved on: 09/21/2016 By jamesy**

**Permit Numbers: W2016-0700**
**Permits Valid from 10/04/2016 to 10/04/2016**

| | | |
|---|---|---|
| **Application Id:** | 1473980916231 | **City of Project Site:** Emeryville |
| **Site Location:** | 4331 San Pablo Avenue<br>Emeryville, CA | |
| **Project Start Date:** | 10/04/2016 | **Completion Date:** 10/04/2016 |
| **Assigned Inspector:** | Contact Lindsay Furuyama at (925) 956-2311 or Lfuruyama@groundzonees.com | |
| **Applicant:** | OTG EnviroEngineering Solutions Inc. - Xinggang Tong<br>7700 Edgewater Dr., Suite 260, Oakland, CA 94621 | **Phone:** 510-465-8982 |
| **Property Owner:** | Nancy Humphrey<br>City of Emeryville, 1333 Park Ave, Emeryville, CA 94608 | **Phone:** 510-596-3728 |
| **Client:** | Xinggang Tong<br>7700 Edgewater Dr, Suite 260, Oakland, CA 94621 | **Phone:** 510-465-8982 |
| **Contact:** | Xinggang Tong | **Phone:** 510-465-8982<br>**Cell:** 510-612-0857 |

| | | |
|---|---|---|
| | **Total Due:** | $265.00 |
| **Receipt Number: WR2016-0474** | **Total Amount Paid:** | $265.00 |
| **Payer Name : Xinggang Tong** | Paid By: MC | **PAID IN FULL** |

**Works Requesting Permits:**

Borehole(s) for Investigation-Contamination Study - 2 Boreholes
Driller: PeneCore Drilling Inc - Lic #: 906899 - Method: DP **Work Total: $265.00**

**Specifications**

| Permit Number | Issued Dt | Expire Dt | # Boreholes | Hole Diam | Max Depth |
|---|---|---|---|---|---|
| W2016-0700 | 09/21/2016 | 01/02/2017 | 2 | 2.00 in. | 25.00 ft |

**Specific Work Permit Conditions**

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities

or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

5. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

8. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

# APPENDIX B

Boring Logs

| OTG EnviroEngineering Solutions, Inc. | **BORING LOG** | Boring No. **SB-1**<br>Well No.<br>Sheet 1 of 1 |
|---|---|---|

Site: **4331 San Pablo Ave., Emeryville, CA 94608**
Client **City of Emeryville**
Project Number: **14EMV04.1000**
Date(s) Drilled: **10/04/16**
Date(s) Installed: **10/04/16**
Drilling Co./Driller: **PeneCore Drilling**

Ground Elevation: **NA**
T.O.C. Elevation:
Coordinates:
Drilling Method: **Direct Push, Geoprobe 6610DT Rig**
Borehole Total Depth: **25 feet**
Final Borehole Diameter: **2.5 inches**

Drilling Summary: Advanced boring to target depth using direct push Geoprobe 6610DT rig equipped with 2.5-inch OD dual-core sampling rods. Inserted 3/4"-diameter Schedule 40 PVC casing and 0.01-inch slot screen (15 to 25 ft bgs) inside outer core and then pulled the outer core sampler to 3 feet bgs to allow potential groundwater from 3 to 25 ft bgs to accumulate inside borehole. Tremie grout borehole with cement at approx 12 noon.

| Well Construction Details | Sample No. | Sample Interval | PID Reading, ppm | Recovery | Blow Counts | Petro Odor | Depth (ft) | Graphic Log | LITHOLOGY/REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | **0- 2"** landscape, woodchips |
| | | | 0 | | | | | | hand auger to 2' |
| | | | | | | | 2 | | **0.2" - 3.5'** gravel-sand-silt mixture fill (GM), gray, dry |
| | | | 0 | | | | 3 | | |
| | | | | 80 | | | | | |
| | | | | | | | 4 | | **3.5 - 6.5'** silty clay with some gravels (CL), grayish brown, dry, stiff |
| | **SB-1-4** | | | | | | | | |
| | | | 2.5 | | | | 5 | | |
| | | | | | | | | | |
| | | | 1.5 | | | | 6 | | |
| | | | | | | | | | |
| | | | | | | | 7 | | |
| | | | | 100 | | | | | |
| | | | 2.5 | | | | 8 | | **6.5 - 11'** silty clay with minor gravels (CL), dark brown, dry, & stiff |
| | | | | | | | | | |
| | | | | | | | 9 | | |
| | | | | | | | | | |
| | **SB-1-9** | | 6.5 | | | | 10 | | |
| | | | | | | | | | |
| | | | 9.5 | | | | 11 | | |
| | | | | | | | | | **11 - 15'** silty clay with minor gravels (CL), gray, moist, but stiff, petroleum odor between 13 and 14' |
| | | | | | | | 12 | | |
| | | | | 100 | | | | | |
| | | | | | | | 13 | | |
| | **SB-1-13** | | 550 | | | yes | | | |
| | | | | | | | 14 | | |
| | | | | | | | | | |
| | | | 10.5 | | | | 15 | | |
| | | | | | | | | | |
| | | | | | | | 16 | | **15 - 21'** clayey sand with some gravels (SC), pale yellow mottled with light brown, moist, & slightly soft |
| | | | | | | | | | |
| | | | 3 | | | | 17 | | |
| | | | | 70 | | | | | |
| | | | | | | | 18 | | |
| | | | 2 | | | | | | |
| | | | | | | | 19 | | |
| | | | | | | | | | |
| | | | 1.5 | | | | 20 | | |
| | | | | | | | | | |
| | | | 2 | | | | 21 | | |
| | | | | | | | | | |
| | | | | | | | 22 | | **21 - 25'** silty sandy clay (CL), yellow, moist, slightly soft. |
| | **SB-1-22** | | | 100 | | | | | |
| | | | 1.5 | | | | 23 | | |
| | | | | | | | | | |
| | | | | | | | 24 | | |
| | | | | | | | | | |
| | | | 1.5 | | | | 25 | | Bottom of boring at 25 feet, no groundwater after 3 hrs of borehole opening |

Date checked: October 20, 2016

Logged by: X Tong

Checked by: X Tong

| OTG EnviroEngineering Solutions, Inc. | **BORING LOG** | Boring No. **SB-2**<br>Well No.<br>Sheet 1 of 1 |
|---|---|---|

Site: **4331 San Pablo Ave., Emeryville, CA 94608**
Client **City of Emeryville**
Project Number: **14EMV04.1000**
Date(s) Drilled: **10/04/16**
Date(s) Installed: **10/04/16**
Drilling Co./Driller: **PeneCore Drilling**

Ground Elevation: **NA**
T.O.C. Elevation:
Coordinates:
Drilling Method: **Direct Push, Geoprobe 6610DT Rig**
Borehole Total Depth: **20 feet**
Final Borehole Diameter: **2.5 inches**

Drilling Summary: Advanced boring to target depth using direct push Geoprobe 6610DT rig equipped with 2.5-inch OD dual-core sampling rods. Inserted 3/4"-diameter Schedule 40 PVC casing and 0.01-inch slot screen (15 to 20 ft bgs) inside outer core and then pulled the outer core sampler to 3 feet bgs to allow potential groundwater from 3 to 20 ft bgs to accumulate inside borehole. Tremie grout borehole with cement at approx 12 noon.

| Well Construction Details | Sample No. | Sample Interval | PID Reading, ppm | Recovery | Blow Counts | Petro Odor | Depth (ft) | Graphic Log | LITHOLOGY/REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | **0 - 5'** gravel-sand-silt mixture with plant roots (SP-SM), dark brown, moist 0 to 2', dry after 2' FILL |
| | | | 0 | | | | | | |
| | | | 0.1 | | | | 2 | | hand auger to 2' |
| | | | | | | | | | |
| | | | | | | | 3 | | |
| | | | 1.5 | 70 | | | | | |
| | | | | | | | 4 | | |
| | SB-2-4 | | | | | | | | |
| | | | 2.5 | | | | 5 | | |
| | | | | | | | | | **5 - 11'** sandy silty clay with minor gravels (CL), dark brown to black, dry, stiff |
| | | | | | | | 6 | | |
| | | | 1.5 | | | | | | |
| | | | | | | | 7 | | |
| | | | | 100 | | | | | |
| | | | 2.5 | | | | 8 | | |
| | | | | | | | | | |
| | | | | | | | 9 | | |
| | | | | | | | | | |
| | SB-2-9 | | 3.5 | | | | 10 | | |
| | | | | | | | | | |
| | | | 16 | | | | 11 | | |
| | | | | | | | | | **11 - 15'** sandy silty clay with minor gravels (CL), gray, moist, but stiff, petroleum odor between 13 and 15' |
| | | | 25 | | | | 12 | | |
| | | | | 100 | | | | | |
| | | | | | | | 13 | | |
| | SB-2-13 | | 350 | | | yes | | | |
| | | | | | | | 14 | | |
| | | | | | | | | | |
| | | | 170 | | | | 15 | | |
| | | | | | | | | | |
| | | | 45 | | | | 16 | | **15 - 20'** clayey sand with some gravels (SC), light gray at 15' & transition to pale yellow after 16', moist, & slightly soft. |
| | | | | | | | | | |
| | | | | | | | 17 | | |
| | | | | 70 | | | | | |
| | | | 3 | | | | 18 | | |
| | | | | | | | | | |
| | | | | | | | 19 | | |
| | | | | | | | | | |
| | | | 3 | | | | 20 | | |
| | | | | | | | | | Bottom of boring at 20 feet, completely dry after 2.5 hrs of borehole opening |
| | | | | | | | 21 | | |
| | | | | | | | | | |
| | | | | | | | 22 | | |
| | | | | | | | | | |
| | | | | | | | 23 | | |
| | | | | | | | | | |
| | | | | | | | 24 | | |
| | | | | | | | | | |
| | | | | | | | 25 | | |

Logged by: X Tong  Checked by: X Tong  Date checked: October 20, 2016

# APPENDIX C

Laboratory Analytical Reports for
October 4, 2016 Soil Samples


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 281778**
**ANALYTICAL REPORT**

| | |
|---|---|
| OTG Enviroengineering Solutions, Inc | Project : 14EMVO4.1000 |
| 7700 Edgewater Drive | Location : San Pablo Ave FS |
| Oakland, CA 94621 | Level : II |

| Sample ID | Lab ID |
|---|---|
| SB-1-4 | 281778-001 |
| SB-1-9 | 281778-002 |
| SB-1-13 | 281778-003 |
| SB-1-22 | 281778-004 |
| SB-2-4 | 281778-005 |
| SB-2-9 | 281778-006 |
| SB-2-13 | 281778-007 |

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: Mikelle Chong Date: 10/13/2016

Mikelle Chong
Project Manager
mikelle.chong@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

# CASE NARRATIVE

| | |
|---|---|
| Laboratory number: | **281778** |
| Client: | **OTG Enviroengineering Solutions, Inc** |
| Project: | **14EMVO4.1000** |
| Location: | **San Pablo Ave FS** |
| Request Date: | **10/04/16** |
| Samples Received: | **10/04/16** |

This data package contains sample and QC results for seven soil samples, requested for the above referenced project on 10/04/16. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B):**
SB-1-13 (lab # 281778-003) was diluted due to high hydrocarbons. No other analytical problems were encountered.

**TPH-Extractables by GC (EPA 8015B):**
SB-1-4 (lab # 281778-001) and SB-2-4 (lab # 281778-005) were diluted due to the dark and viscous nature of the sample extracts. No other analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B):**
Low surrogate recoveries were observed for bromofluorobenzene in the MS/MSD for batch 239810 and the MS/MSD for batch 239914; the parent sample was not a project sample. No other analytical problems were encountered.

# CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532



Chain of Custody #

C&T LOGIN # 281778

Project No: 14EMV04.1000
Project Name: San Pablo Ave FS
Project P. O. No:
EDD Format: Report Level ☒ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH ☒ Standard

Sampler: Xingguang Tong
Report To: Xingguang Tong
Company: OTG EnviroEngineering Solutions Inc.
Telephone: 510-465-8982
Email: xtong@otgenv.com

| Lab No. | Sample ID. | SAMPLING | | MATRIX | | | | # of Containers | CHEMICAL PRESERVATIVE | | | | | ANALYTICAL REQUEST | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date Collected | Time Collected | Water | Solid | | | | HCl | H2SO4 | HNO3 | NaOH | None | VOCs by EPA 8260B | (including MTBE & naphthalene) | | TPH gas | | TPH diesel & motor oil | | TPH d & mo with silica gel cleanup | | | | | | | | | | |
| 1 | SB-1-4 | 10/4/16 | 9:05 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | X | | | | | | | | | | |
| 2 | SB-1-9 | 10/4/16 | 9:26 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | | | | | | | | | | | |
| 3 | SB-1-13 | 10/4/16 | 9:38 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | X | | | | | | | | | | |
| 4 | SB-1-22 | 10/4/16 | 9:57 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | SB-2-4 | 10/4/16 | 10:10 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | | | | | | | | | | | |
| 6 | SB-2-9 | 10/4/16 | 10:21 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | | | | | | | | | | | |
| 7 | SB-2-13 | 10/4/16 | 10:30 | | X | | | 1 | | | | | ✓ | X | | | X | | X | | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:
DATE: 10/4/16 TIME: 12:45
DATE: TIME:
DATE: TIME:

RECEIVED BY:
DATE: 10/4/16 TIME: 12:45
DATE: TIME:
DATE: TIME:

**COOLER RECEIPT CHECKLIST**

Curtis & Tompkins, Ltd.

Login # 281778 Date Received 10/04/16 Number of coolers 1
Client CTG Project San Pablo Ave FS

Date Opened 10/04 By (print) SL (sign) [signature]
Date Logged in ↓ By (print) DTN (sign) dnguyen
Date Labeled ↓ 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 ☒ NO
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☒ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 2.5'

☐ Temperature blank(s) included? ☐ Thermometer# _____ ☒ IR Gun# A

☒ 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 there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? (pH strip lot# _____) YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Curtis & Tompkins, Ltd.

# Detections Summary for 281778

Results for any subcontracted analyses are not included in this summary.

Client : OTG Enviroengineering Solutions, Inc
Project : 14EMVO4.1000
Location : San Pablo Ave FS

Client Sample ID : SB-1-4 Laboratory Sample ID : 281778-001

| Analyte | Result | Flags | RL | Units | Basis | IDF | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|
| Diesel C10-C24 | 12 | Y | 3.0 | mg/Kg | As Recd | 3.000 | EPA 8015B | EPA 3550B |
| Motor Oil C24-C36 | 120 | | 15 | mg/Kg | As Recd | 3.000 | EPA 8015B | EPA 3550B |

Client Sample ID : SB-1-9 Laboratory Sample ID : 281778-002

| Analyte | Result | Flags | RL | Units | Basis | IDF | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|
| Acetone | 49 | | 18 | ug/Kg | As Recd | 0.9042 | EPA 8260B | EPA 5030B |
| 2-Butanone | 13 | | 9.0 | ug/Kg | As Recd | 0.9042 | EPA 8260B | EPA 5030B |

Client Sample ID : SB-1-13 Laboratory Sample ID : 281778-003

| Analyte | Result | Flags | RL | Units | Basis | IDF | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 330 | | 33 | mg/Kg | As Recd | 166.7 | EPA 8015B | EPA 5030B |
| Diesel C10-C24 | 56 | | 1.0 | mg/Kg | As Recd | 1.000 | EPA 8015B | EPA 3550B |
| Diesel C10-C24 | 39 | | 1.0 | mg/Kg | As Recd | 1.000 | EPA 8015B | EPA 3550B |
| Ethylbenzene | 5,700 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |
| m,p-Xylenes | 5,200 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |
| Propylbenzene | 4,400 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |
| 1,3,5-Trimethylbenzene | 5,300 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |
| 1,2,4-Trimethylbenzene | 21,000 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |
| n-Butylbenzene | 2,000 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |
| Naphthalene | 3,300 | | 1,000 | ug/Kg | As Recd | 200.0 | EPA 8260B | EPA 5030B |

Client Sample ID : SB-1-22 Laboratory Sample ID : 281778-004

No Detections

Client Sample ID : SB-2-4 Laboratory Sample ID : 281778-005

| Analyte | Result | Flags | RL | Units | Basis | IDF | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|
| Diesel C10-C24 | 14 | Y | 3.0 | mg/Kg | As Recd | 3.000 | EPA 8015B | EPA 3550B |
| Motor Oil C24-C36 | 150 | | 15 | mg/Kg | As Recd | 3.000 | EPA 8015B | EPA 3550B |

Curtis & Tompkins, Ltd.

Client Sample ID : SB-2-9 Laboratory Sample ID : 281778-006

| Analyte | Result | Flags | RL | Units | Basis | IDF | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|
| Acetone | 39 | | 18 | ug/Kg | As Recd | 0.8961 | EPA 8260B | EPA 5030B |

Client Sample ID : SB-2-13 Laboratory Sample ID : 281778-007

| Analyte | Result | Flags | RL | Units | Basis | IDF | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 93 | | 5.0 | mg/Kg | As Recd | 25.00 | EPA 8015B | EPA 5030B |
| Diesel C10-C24 | 120 | | 1.0 | mg/Kg | As Recd | 1.000 | EPA 8015B | EPA 3550B |
| Diesel C10-C24 | 100 | | 1.0 | mg/Kg | As Recd | 1.000 | EPA 8015B | EPA 3550B |
| Benzene | 71 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| Ethylbenzene | 1,200 | | 250 | ug/Kg | As Recd | 50.00 | EPA 8260B | EPA 5030B |
| m,p-Xylenes | 980 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| Isopropylbenzene | 270 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| Propylbenzene | 1,500 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| 1,3,5-Trimethylbenzene | 540 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| 1,2,4-Trimethylbenzene | 770 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| sec-Butylbenzene | 86 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| para-Isopropyl Toluene | 76 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| n-Butylbenzene | 240 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |
| Naphthalene | 1,300 | | 53 | ug/Kg | As Recd | 10.64 | EPA 8260B | EPA 5030B |

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-4 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 239938 |
| Lab ID: | 281778-001 | Analyzed: | 10/08/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.93 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 119 | 78-138 |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-9 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 239938 |
| Lab ID: | 281778-002 | Analyzed: | 10/08/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 1.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 124 | 78-138 |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-13 | Diln Fac: | 166.7 |
| Type: | SAMPLE | Batch#: | 239984 |
| Lab ID: | 281778-003 | Analyzed: | 10/10/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 330 | 33 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 119 | 78-138 |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-22 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 239938 |
| Lab ID: | 281778-004 | Analyzed: | 10/08/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.99 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 118 | 78-138 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-2-4 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 239922 |
| Lab ID: | 281778-005 | Analyzed: | 10/07/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 1.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 108 | 78-138 |

| | | | |
|---|---|---|---|
| Field ID: | SB-2-9 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Batch#: | 239922 |
| Lab ID: | 281778-006 | Analyzed: | 10/08/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.97 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 106 | 78-138 |

| | | | |
|---|---|---|---|
| Field ID: | SB-2-13 | Diln Fac: | 25.00 |
| Type: | SAMPLE | Batch#: | 239984 |
| Lab ID: | 281778-007 | Analyzed: | 10/10/16 |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | 93 | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 115 | 78-138 |

| | | | |
|---|---|---|---|
| Type: | BLANK | Batch#: | 239922 |
| Lab ID: | QC854738 | Analyzed: | 10/07/16 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 88 | 78-138 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | | |

| | | | |
|---|---|---|---|
| Type: | BLANK | Batch#: | 239938 |
| Lab ID: | QC854822 | Analyzed: | 10/07/16 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 0.20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 117 | 78-138 |

| | | | |
|---|---|---|---|
| Type: | BLANK | Batch#: | 239984 |
| Lab ID: | QC855009 | Analyzed: | 10/10/16 |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Gasoline C7-C12 | ND | 1.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 103 | 78-138 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC854735 | Batch#: | 239922 |
| Matrix: | Soil | Analyzed: | 10/07/16 |
| Units: | mg/Kg | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1.000 | 1.132 | 113 | 80-121 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 109 | 78-138 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Diln Fac: | 1.000 |
| MSS Lab ID: | 281786-002 | Batch#: | 239922 |
| Matrix: | Soil | Sampled: | 10/03/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/08/16 |

Type: MS Lab ID: QC854736

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 0.1897 | 2.000 | 1.891 | 85 | 50-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 116 | 78-138 |

Type: MSD Lab ID: QC854737

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 2.000 | 1.843 | 83 | 50-120 | 3 | 31 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 108 | 78-138 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC854821 | Batch#: | 239938 |
| Matrix: | Soil | Analyzed: | 10/07/16 |
| Units: | mg/Kg | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1.000 | 1.143 | 114 | 80-121 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 130 | 78-138 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Diln Fac: | 1.000 |
| MSS Lab ID: | 281787-001 | Batch#: | 239938 |
| Matrix: | Soil | Sampled: | 10/03/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | | |

Type: MS Analyzed: 10/07/16
Lab ID: QC854823

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 0.1296 | 9.901 | 10.21 | 102 | 50-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 134 | 78-138 |

Type: MSD Analyzed: 10/08/16
Lab ID: QC854824

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 9.804 | 9.627 | 97 | 50-120 | 5 | 31 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 133 | 78-138 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Batch#: | 239984 |
| Units: | mg/Kg | Analyzed: | 10/10/16 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC855012

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 1.000 | 1.138 | 114 | 80-121 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 107 | 78-138 |

Type: BSD Lab ID: QC855013

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 2.000 | 2.189 | 109 | 80-121 | 4 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 118 | 78-138 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Volatile Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Diln Fac: | 1.000 |
| MSS Lab ID: | 281939-001 | Batch#: | 239984 |
| Matrix: | Soil | Sampled: | 10/06/16 |
| Units: | mg/Kg | Received: | 10/07/16 |
| Basis: | as received | Analyzed: | 10/11/16 |

Type: MS Lab ID: QC855014

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 0.2434 | 10.31 | 6.883 | 64 | 50-120 |

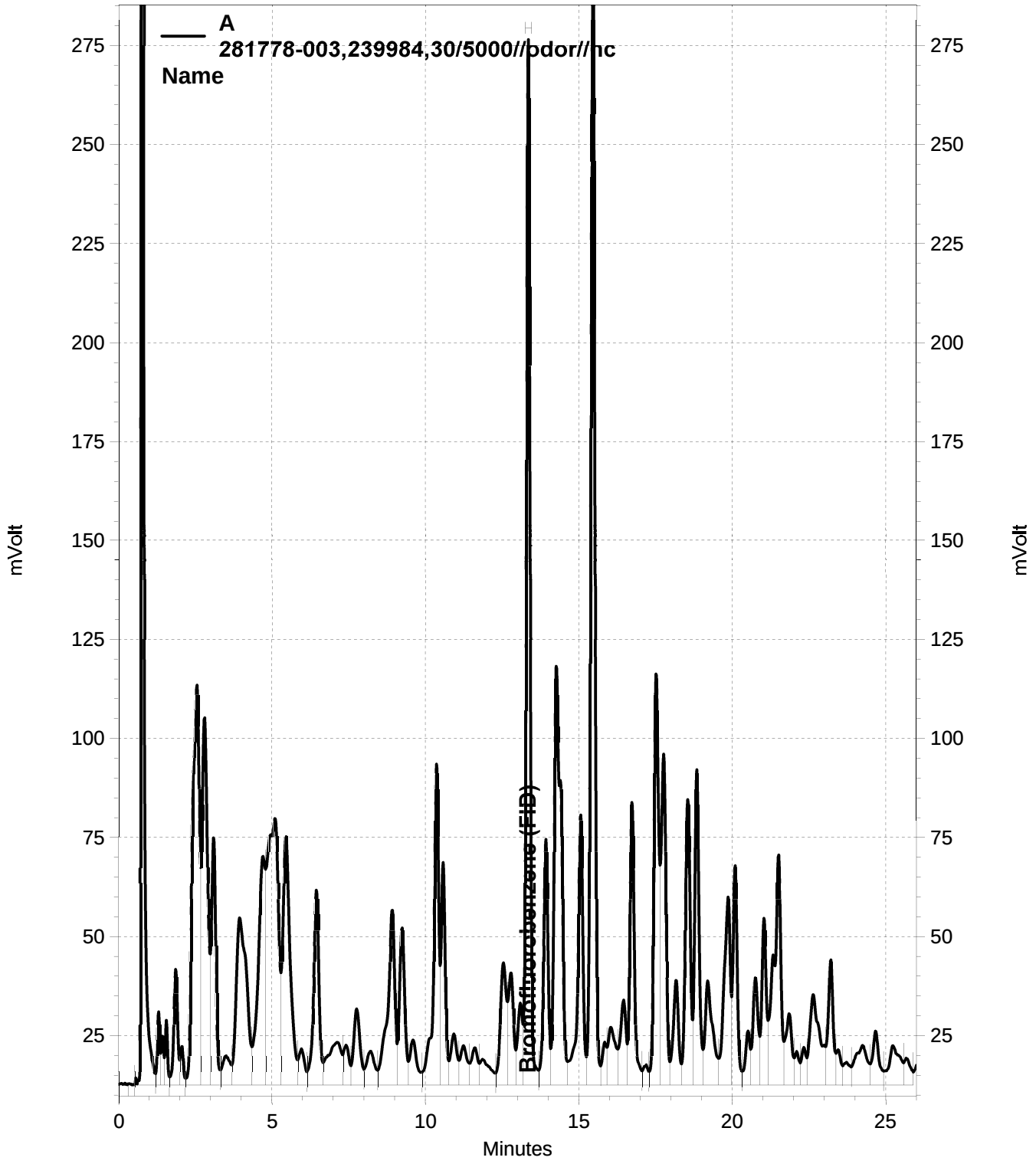
| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 112 | 78-138 |

Type: MSD Lab ID: QC855015

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 10.10 | 7.115 | 68 | 50-120 | 5 | 31 |

| Surrogate | %REC | Limits |
|---|---|---|
| Bromofluorobenzene (FID) | 109 | 78-138 |

RPD= Relative Percent Difference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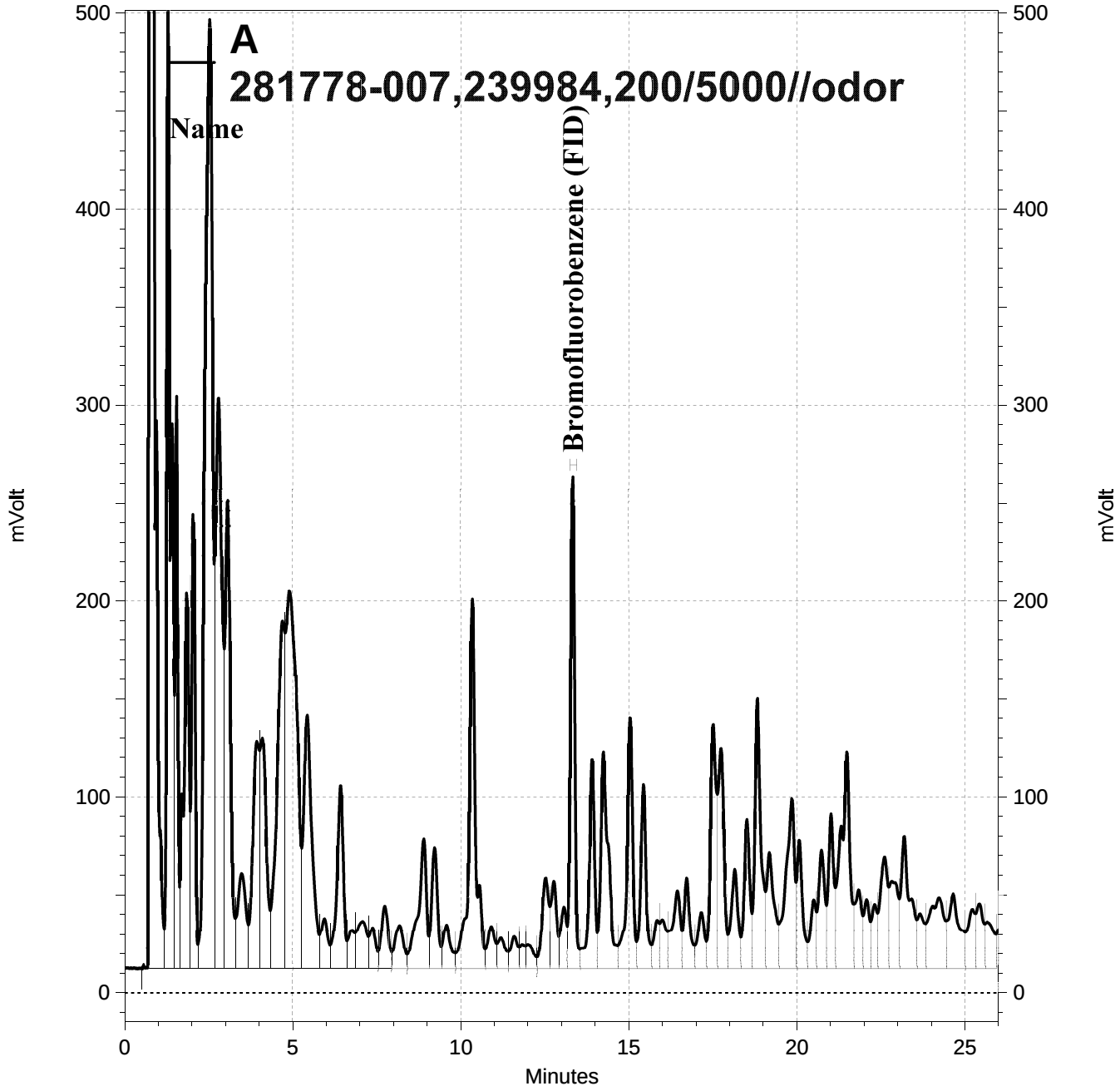
Name
mVolt
mVolt
Minutes
Bromofluorobenzene (FID)
\\Lims\gdrive\ezchrom\Projects\GC05\Data\284-018, A


A
281778-007,239984,200/5000//odor
Name
Bromofluorobenzene (FID)
mVolt
mVolt
Minutes
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100
200
300
400
500
0
5
10
15
20
25
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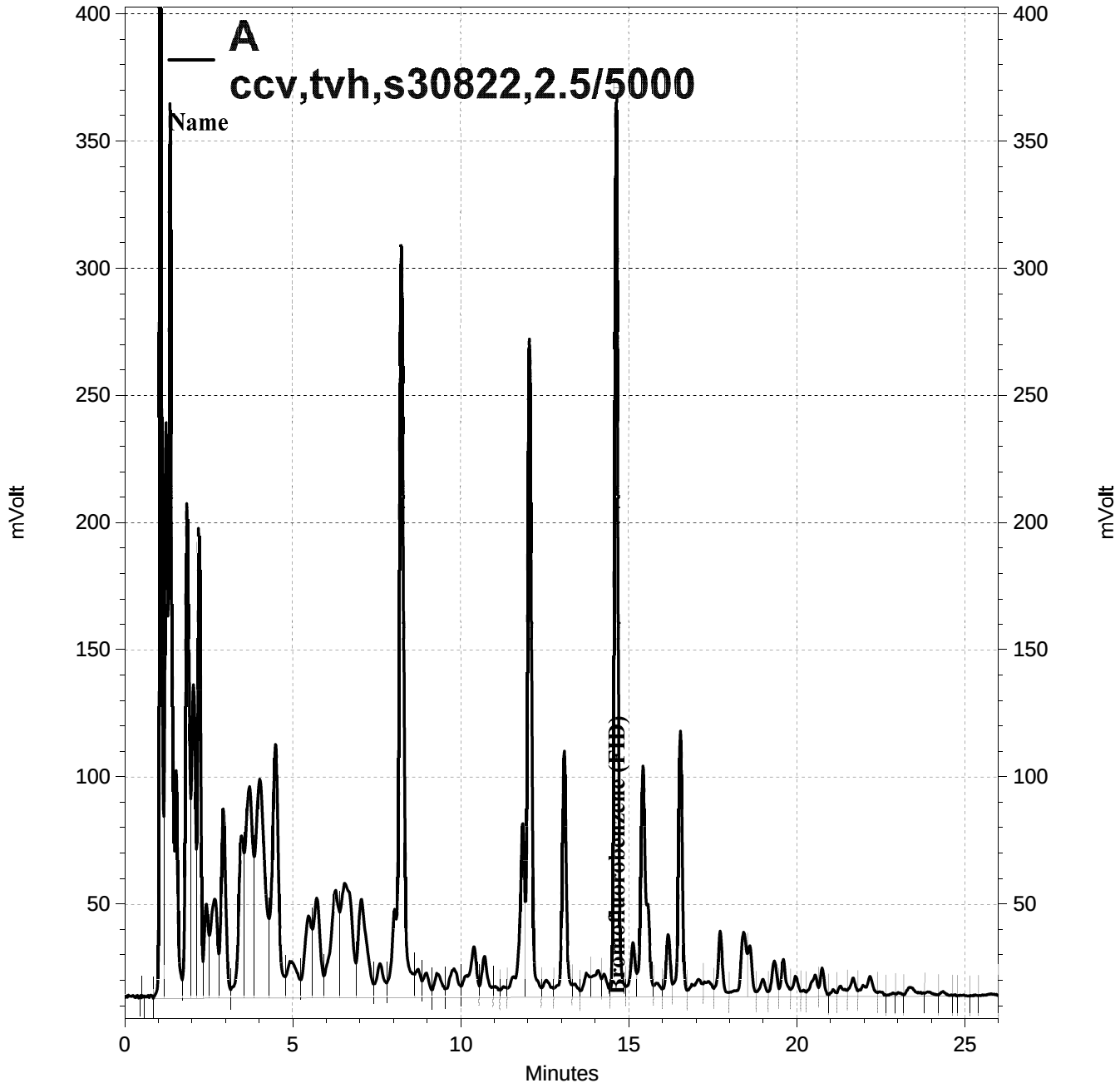

A
ccv,tvh,s30822,2.5/5000
Name
Bromofluorobenzene (FID)
mVolt
mVolt
Minutes
400
350
300
250
200
150
100
50
0
5
10
15
20
25
\\Lims\gdrive\ezchrom\Projects\GC04\Data\281-002, A

Curtis & Tompkins, Ltd.

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 3550B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | Prepared: | 10/06/16 |
| Batch#: | 239889 | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-4 | Diln Fac: | 3.000 |
| Type: | SAMPLE | Analyzed: | 10/11/16 |
| Lab ID: | 281778-001 | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 12 Y | 3.0 |
| Motor Oil C24-C36 | 120 | 15 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 95 | 59-140 |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-9 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 10/11/16 |
| Lab ID: | 281778-002 | | |

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

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 104 | 59-140 |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-13 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 10/11/16 |
| Lab ID: | 281778-003 | Cleanup Method: | EPA 3630C |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 56 | 1.0 |
| Diesel C10-C24 (SGCU) | 39 | 1.0 |
| Motor Oil C24-C36 | ND | 5.0 |
| Motor Oil C24-C36 (SGCU) | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 102 | 59-140 |
| o-Terphenyl (SGCU) | 75 | 59-140 |

| | | | |
|---|---|---|---|
| Field ID: | SB-1-22 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 10/08/16 |
| Lab ID: | 281778-004 | | |

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

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 86 | 59-140 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 3550B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | Prepared: | 10/06/16 |
| Batch#: | 239889 | | |

| | | | |
|---|---|---|---|
| Field ID: | SB-2-4 | Diln Fac: | 3.000 |
| Type: | SAMPLE | Analyzed: | 10/11/16 |
| Lab ID: | 281778-005 | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | 14 Y | 3.0 |
| Motor Oil C24-C36 | 150 | 15 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 92 | 59-140 |

| | | | |
|---|---|---|---|
| Field ID: | SB-2-9 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Analyzed: | 10/11/16 |
| Lab ID: | 281778-006 | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 0.99 |
| Motor Oil C24-C36 | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 96 | 59-140 |

| | | | |
|---|---|---|---|
| Field ID: | SB-2-13 | Diln Fac: | 1.000 |
| Type: | SAMPLE | Cleanup Method: | EPA 3630C |
| Lab ID: | 281778-007 | | |

| Analyte | Result | RL | Analyzed |
|---|---|---|---|
| Diesel C10-C24 | 120 | 1.0 | 10/07/16 |
| Diesel C10-C24 (SGCU) | 100 | 1.0 | 10/11/16 |
| Motor Oil C24-C36 | ND | 5.0 | 10/07/16 |
| Motor Oil C24-C36 (SGCU) | ND | 5.0 | 10/11/16 |

| Surrogate | %REC | Limits | Analyzed |
|---|---|---|---|
| o-Terphenyl | 97 | 59-140 | 10/07/16 |
| o-Terphenyl (SGCU) | 84 | 59-140 | 10/11/16 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 3550B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | mg/Kg | Received: | 10/04/16 |
| Basis: | as received | Prepared: | 10/06/16 |
| Batch#: | 239889 | | |

| | | | |
|---|---|---|---|
| Type: | BLANK | Analyzed: | 10/08/16 |
| Lab ID: | QC854620 | Cleanup Method: | EPA 3630C |
| Diln Fac: | 1.000 | | |

| Analyte | Result | RL |
|---|---|---|
| Diesel C10-C24 | ND | 1.0 |
| Diesel C10-C24 (SGCU) | ND | 1.0 |
| Motor Oil C24-C36 | ND | 5.0 |
| Motor Oil C24-C36 (SGCU) | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 99 | 59-140 |
| o-Terphenyl (SGCU) | 62 | 59-140 |

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 3550B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC854621 | Batch#: | 239889 |
| Matrix: | Soil | Prepared: | 10/06/16 |
| Units: | mg/Kg | Analyzed: | 10/08/16 |

Cleanup Method: EPA 3630C

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Diesel C10-C24 | 49.70 | 43.69 | 88 | 58-137 |
| Diesel C10-C24 (SGCU) | 49.70 | 50.45 | 102 | 58-137 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 95 | 59-140 |
| o-Terphenyl (SGCU) | 107 | 59-140 |

SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Batch QC Report

## Total Extractable Hydrocarbons

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 3550B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8015B |
| Field ID: | SB-1-22 | Batch#: | 239889 |
| MSS Lab ID: | 281778-004 | Sampled: | 10/04/16 |
| Matrix: | Soil | Received: | 10/04/16 |
| Units: | mg/Kg | Prepared: | 10/06/16 |
| Basis: | as received | Analyzed: | 10/08/16 |
| Diln Fac: | 1.000 | | |

Type: MS Lab ID: QC854622

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Diesel C10-C24 | <0.3059 | 49.88 | 39.19 | 79 | 46-154 |

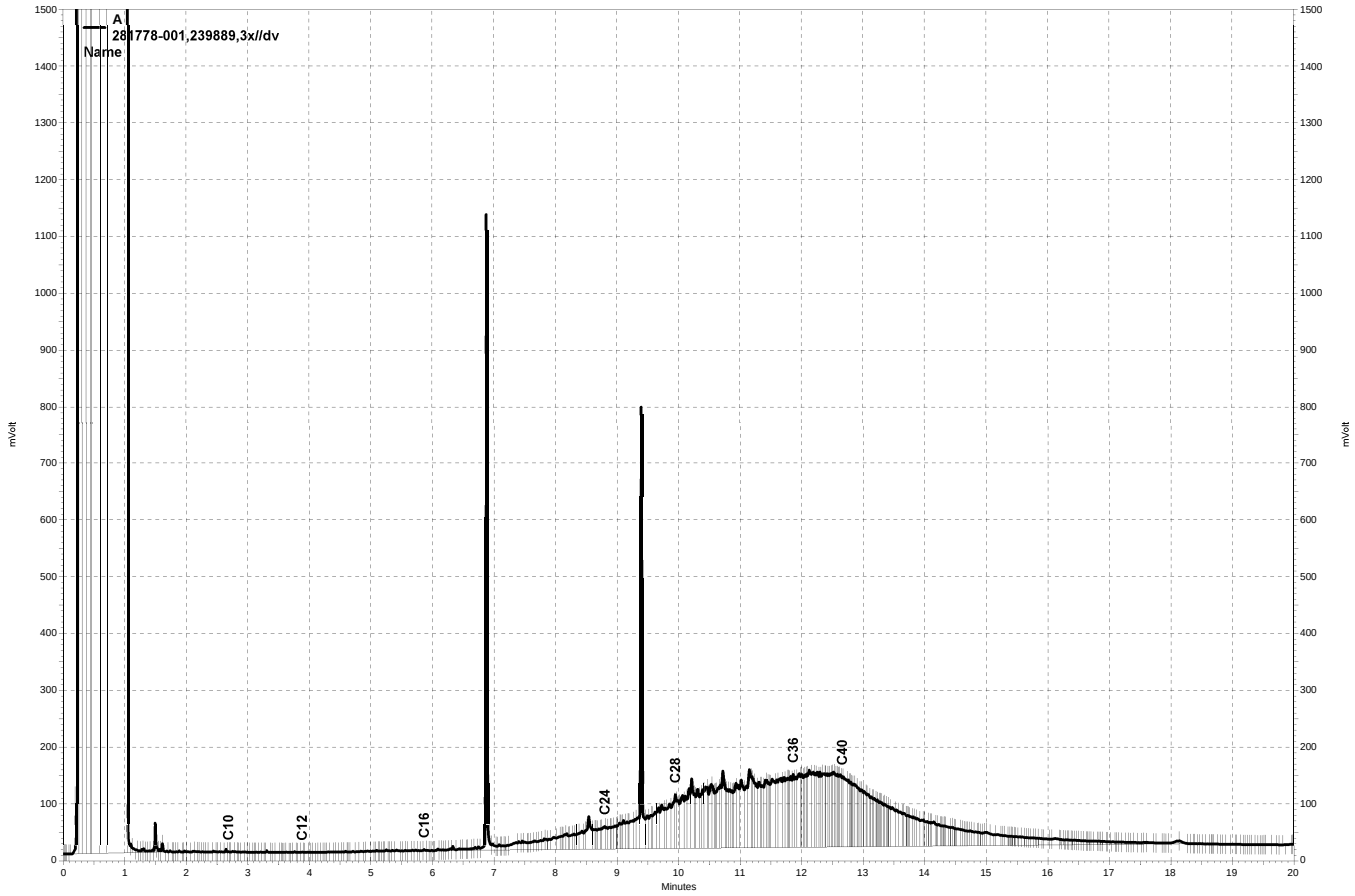
| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 82 | 59-140 |

Type: MSD Lab ID: QC854623

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Diesel C10-C24 | 49.86 | 35.48 | 71 | 46-154 | 10 | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| o-Terphenyl | 79 | 59-140 |

RPD= Relative Percent Difference

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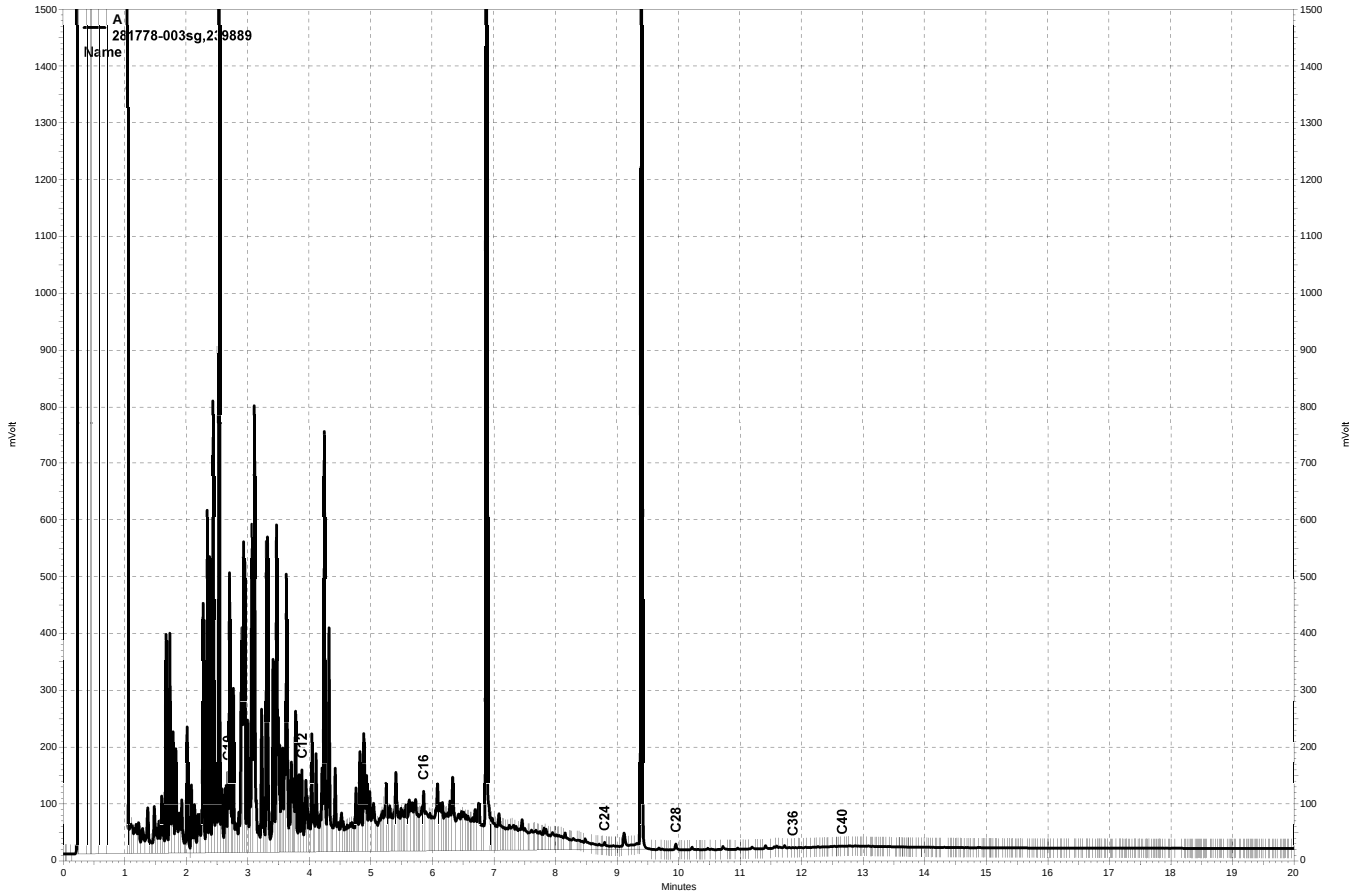


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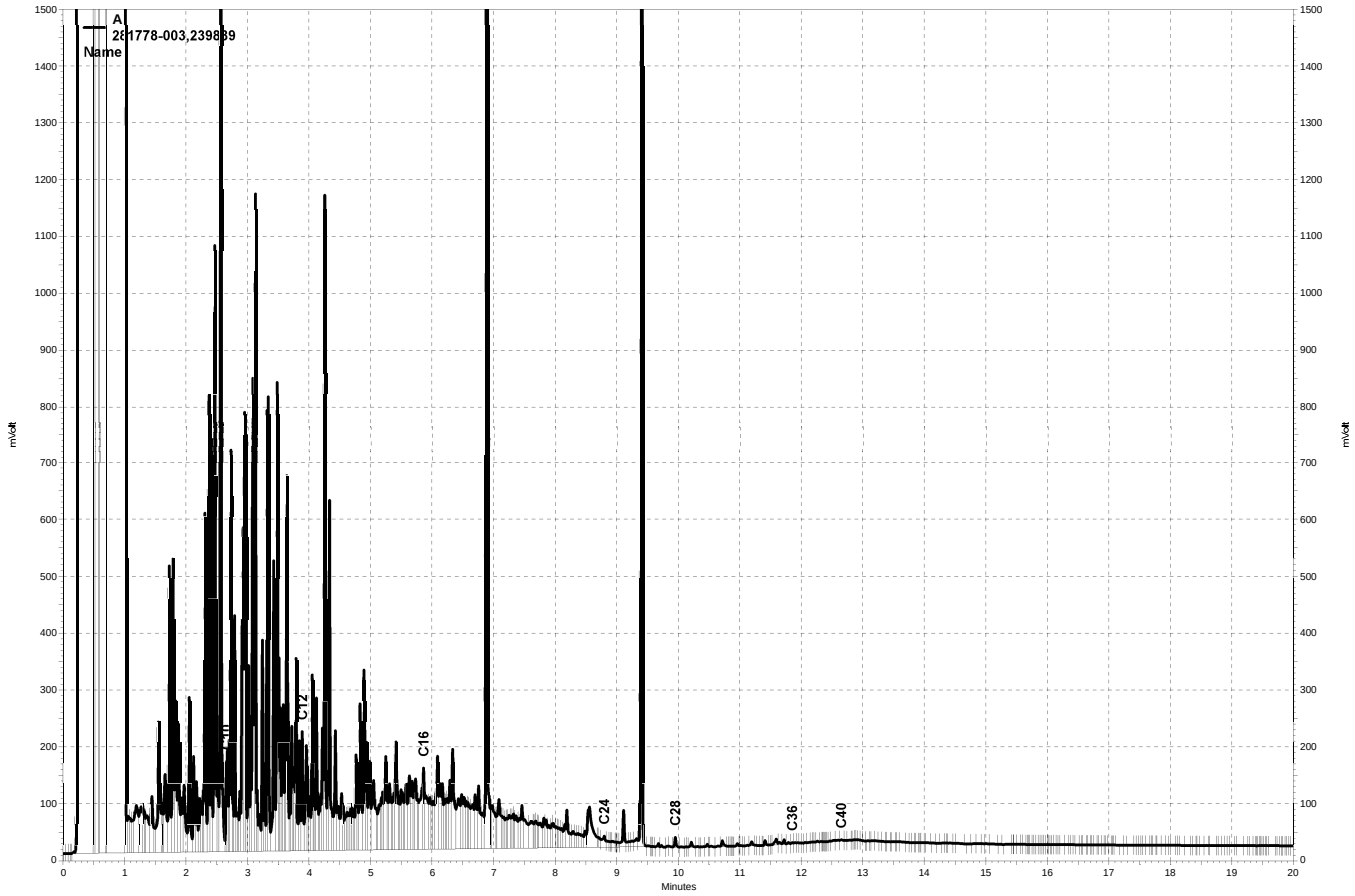


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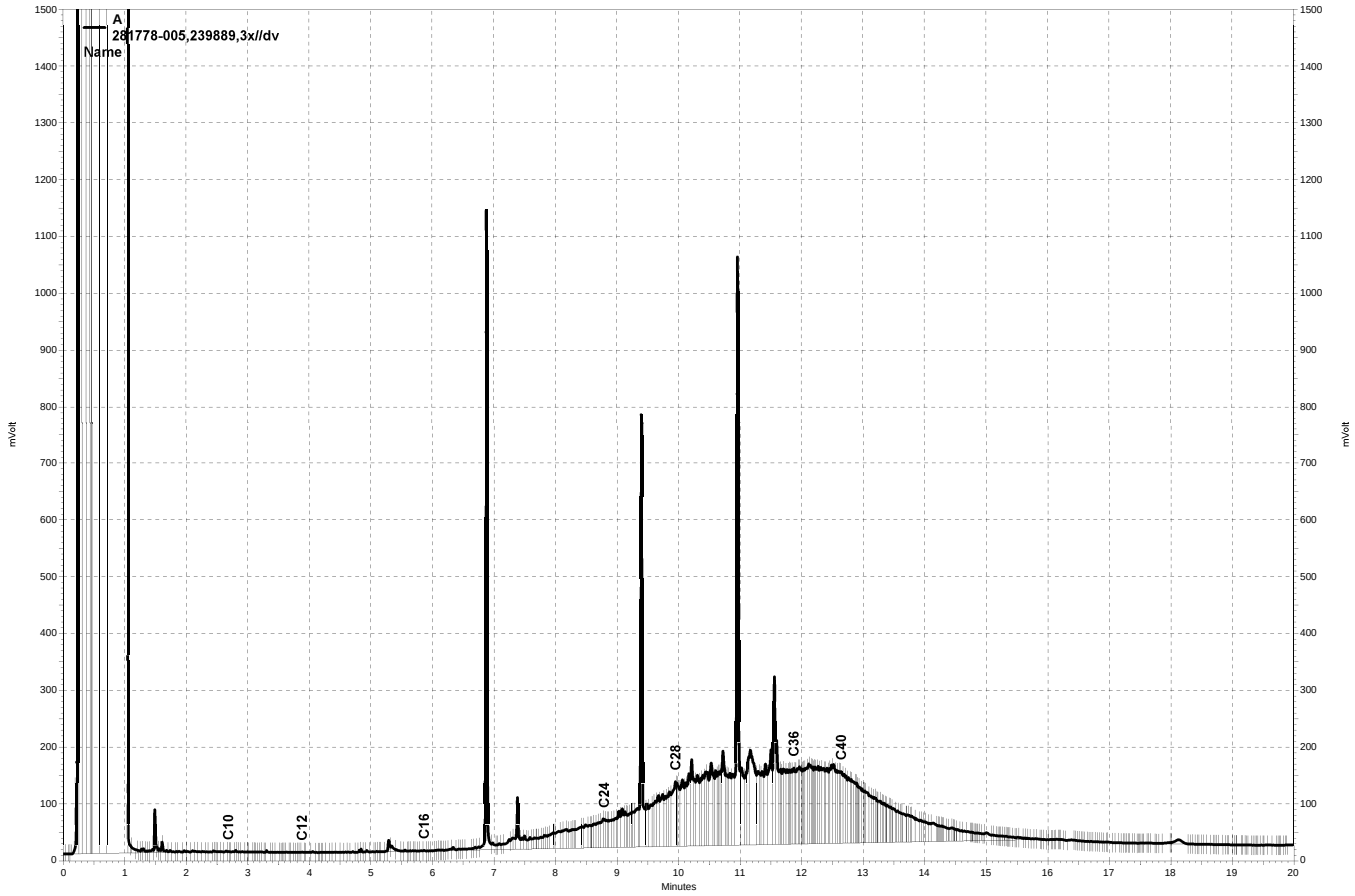


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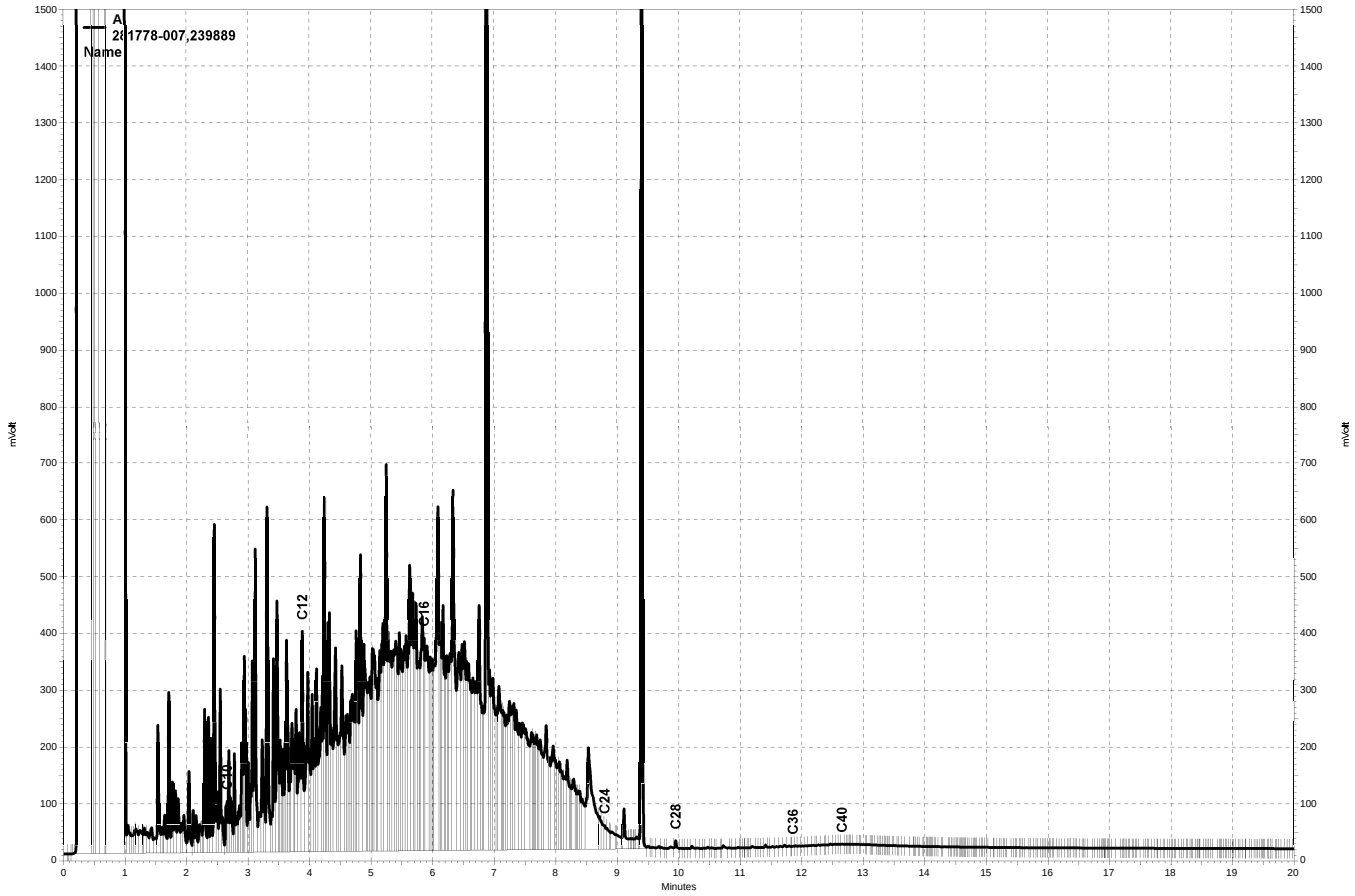


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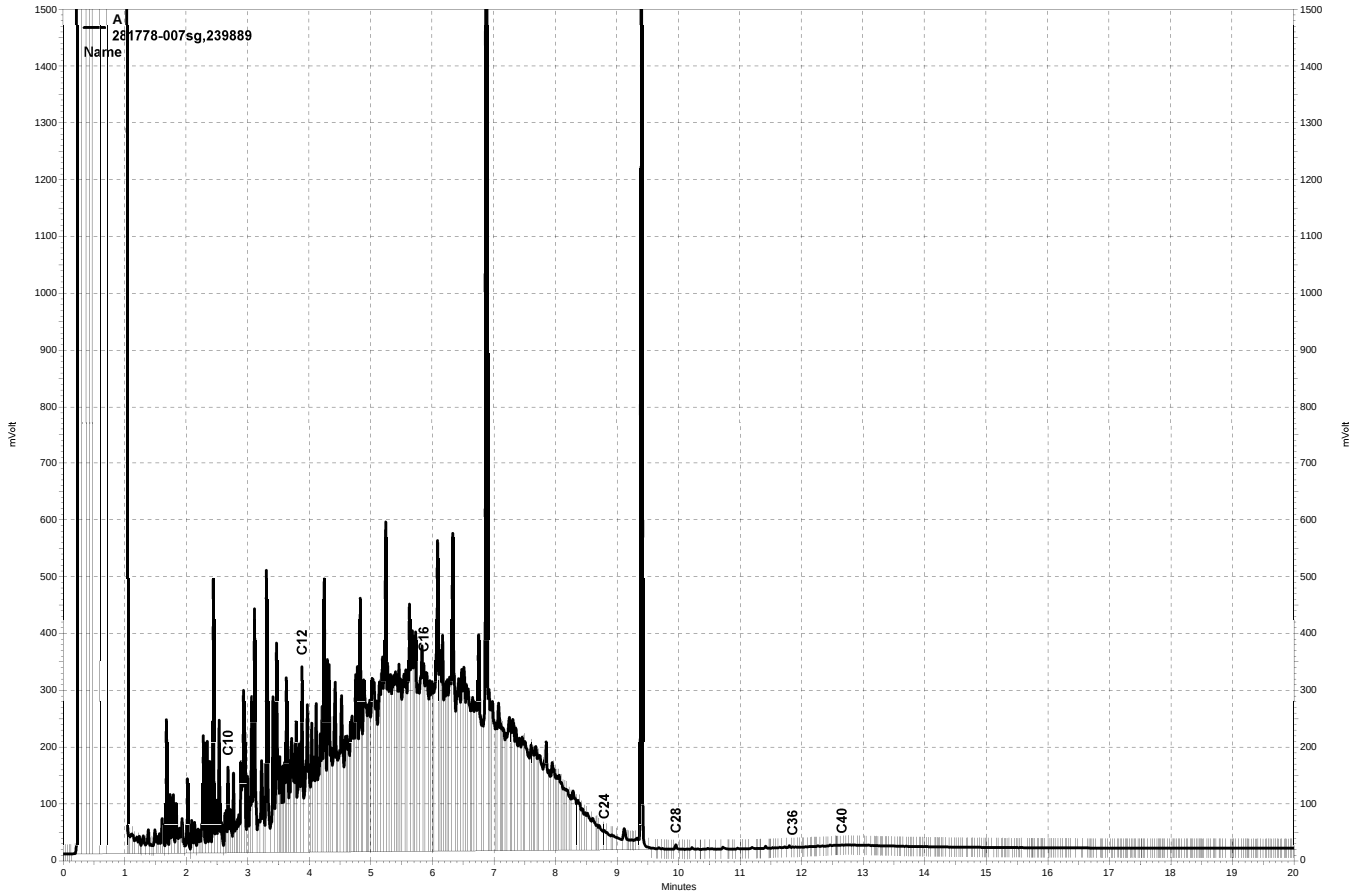


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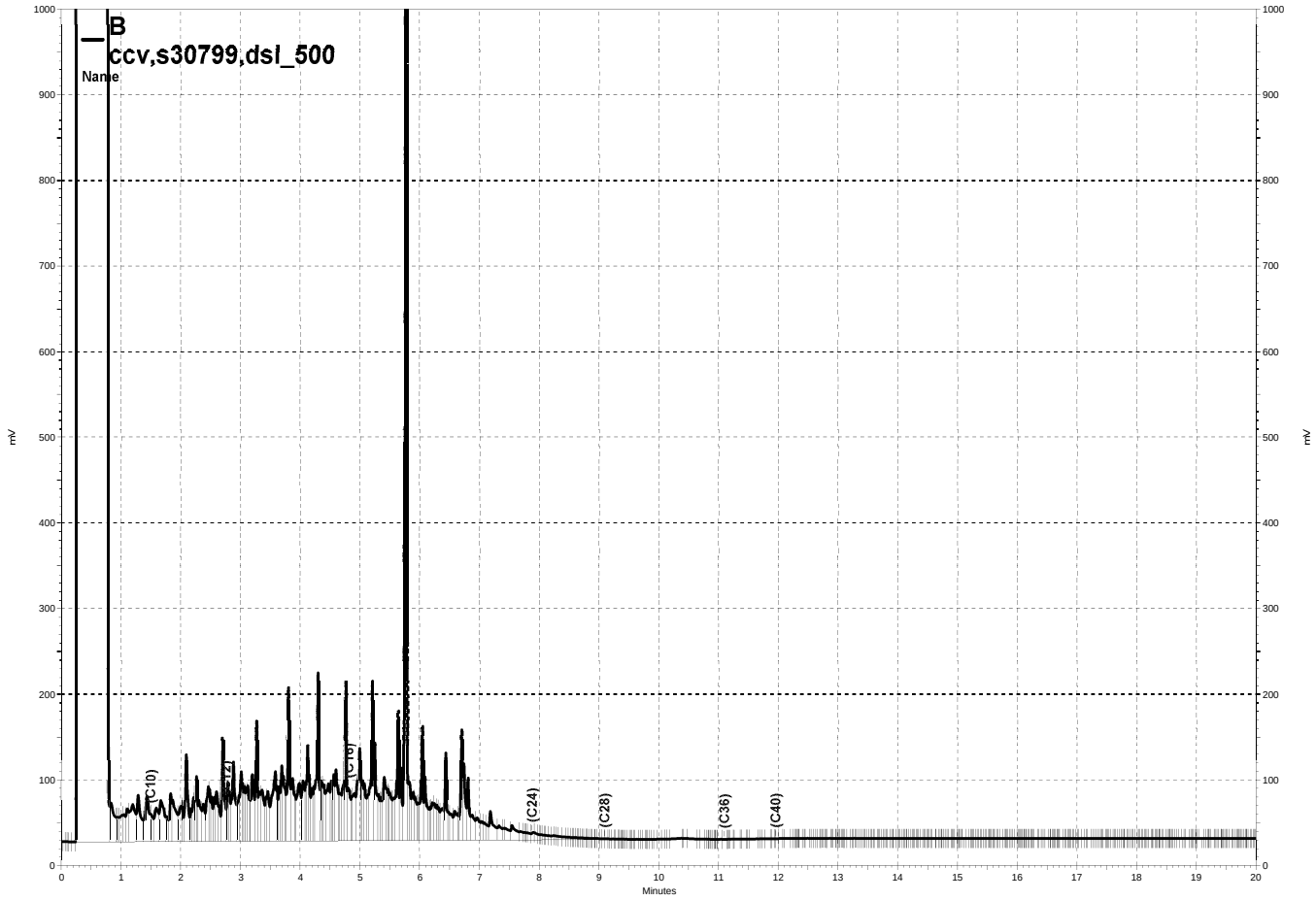


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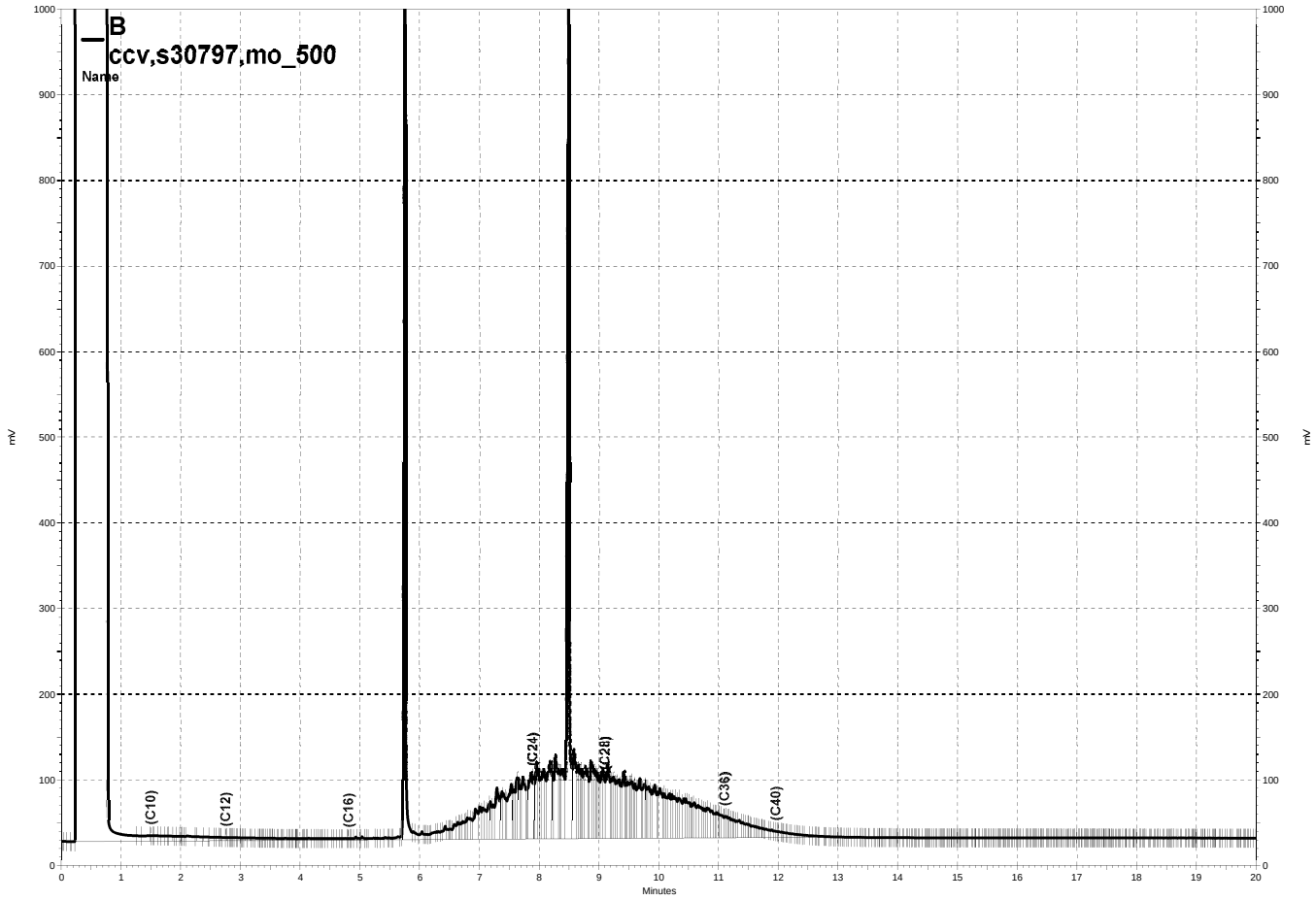


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Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-4 | Diln Fac: | 0.9709 |
| Lab ID: | 281778-001 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 9.7 |
| Chloromethane | ND | 9.7 |
| Vinyl Chloride | ND | 9.7 |
| Bromomethane | ND | 9.7 |
| Chloroethane | ND | 9.7 |
| Trichlorofluoromethane | ND | 4.9 |
| Acetone | ND | 19 |
| Freon 113 | ND | 4.9 |
| 1,1-Dichloroethene | ND | 4.9 |
| Methylene Chloride | ND | 19 |
| Carbon Disulfide | ND | 4.9 |
| MTBE | ND | 4.9 |
| trans-1,2-Dichloroethene | ND | 4.9 |
| Vinyl Acetate | ND | 49 |
| 1,1-Dichloroethane | ND | 4.9 |
| 2-Butanone | ND | 9.7 |
| cis-1,2-Dichloroethene | ND | 4.9 |
| 2,2-Dichloropropane | ND | 4.9 |
| Chloroform | ND | 4.9 |
| Bromochloromethane | ND | 4.9 |
| 1,1,1-Trichloroethane | ND | 4.9 |
| 1,1-Dichloropropene | ND | 4.9 |
| Carbon Tetrachloride | ND | 4.9 |
| 1,2-Dichloroethane | ND | 4.9 |
| Benzene | ND | 4.9 |
| Trichloroethene | ND | 4.9 |
| 1,2-Dichloropropane | ND | 4.9 |
| Bromodichloromethane | ND | 4.9 |
| Dibromomethane | ND | 4.9 |
| 4-Methyl-2-Pentanone | ND | 9.7 |
| cis-1,3-Dichloropropene | ND | 4.9 |
| Toluene | ND | 4.9 |
| trans-1,3-Dichloropropene | ND | 4.9 |
| 1,1,2-Trichloroethane | ND | 4.9 |
| 2-Hexanone | ND | 9.7 |
| 1,3-Dichloropropane | ND | 4.9 |
| Tetrachloroethene | ND | 4.9 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-4 | Diln Fac: | 0.9709 |
| Lab ID: | 281778-001 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 4.9 |
| 1,2-Dibromoethane | ND | 4.9 |
| Chlorobenzene | ND | 4.9 |
| 1,1,1,2-Tetrachloroethane | ND | 4.9 |
| Ethylbenzene | ND | 4.9 |
| m,p-Xylenes | ND | 4.9 |
| o-Xylene | ND | 4.9 |
| Styrene | ND | 4.9 |
| Bromoform | ND | 4.9 |
| Isopropylbenzene | ND | 4.9 |
| 1,1,2,2-Tetrachloroethane | ND | 4.9 |
| 1,2,3-Trichloropropane | ND | 4.9 |
| Propylbenzene | ND | 4.9 |
| Bromobenzene | ND | 4.9 |
| 1,3,5-Trimethylbenzene | ND | 4.9 |
| 2-Chlorotoluene | ND | 4.9 |
| 4-Chlorotoluene | ND | 4.9 |
| tert-Butylbenzene | ND | 4.9 |
| 1,2,4-Trimethylbenzene | ND | 4.9 |
| sec-Butylbenzene | ND | 4.9 |
| para-Isopropyl Toluene | ND | 4.9 |
| 1,3-Dichlorobenzene | ND | 4.9 |
| 1,4-Dichlorobenzene | ND | 4.9 |
| n-Butylbenzene | ND | 4.9 |
| 1,2-Dichlorobenzene | ND | 4.9 |
| 1,2-Dibromo-3-Chloropropane | ND | 4.9 |
| 1,2,4-Trichlorobenzene | ND | 4.9 |
| Hexachlorobutadiene | ND | 4.9 |
| Naphthalene | ND | 4.9 |
| 1,2,3-Trichlorobenzene | ND | 4.9 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 106 | 80-138 |
| Toluene-d8 | 103 | 80-120 |
| Bromofluorobenzene | 107 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-9 | Diln Fac: | 0.9042 |
| Lab ID: | 281778-002 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 9.0 |
| Chloromethane | ND | 9.0 |
| Vinyl Chloride | ND | 9.0 |
| Bromomethane | ND | 9.0 |
| Chloroethane | ND | 9.0 |
| Trichlorofluoromethane | ND | 4.5 |
| Acetone | 49 | 18 |
| Freon 113 | ND | 4.5 |
| 1,1-Dichloroethene | ND | 4.5 |
| Methylene Chloride | ND | 18 |
| Carbon Disulfide | ND | 4.5 |
| MTBE | ND | 4.5 |
| trans-1,2-Dichloroethene | ND | 4.5 |
| Vinyl Acetate | ND | 45 |
| 1,1-Dichloroethane | ND | 4.5 |
| 2-Butanone | 13 | 9.0 |
| cis-1,2-Dichloroethene | ND | 4.5 |
| 2,2-Dichloropropane | ND | 4.5 |
| Chloroform | ND | 4.5 |
| Bromochloromethane | ND | 4.5 |
| 1,1,1-Trichloroethane | ND | 4.5 |
| 1,1-Dichloropropene | ND | 4.5 |
| Carbon Tetrachloride | ND | 4.5 |
| 1,2-Dichloroethane | ND | 4.5 |
| Benzene | ND | 4.5 |
| Trichloroethene | ND | 4.5 |
| 1,2-Dichloropropane | ND | 4.5 |
| Bromodichloromethane | ND | 4.5 |
| Dibromomethane | ND | 4.5 |
| 4-Methyl-2-Pentanone | ND | 9.0 |
| cis-1,3-Dichloropropene | ND | 4.5 |
| Toluene | ND | 4.5 |
| trans-1,3-Dichloropropene | ND | 4.5 |
| 1,1,2-Trichloroethane | ND | 4.5 |
| 2-Hexanone | ND | 9.0 |
| 1,3-Dichloropropane | ND | 4.5 |
| Tetrachloroethene | ND | 4.5 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-9 | Diln Fac: | 0.9042 |
| Lab ID: | 281778-002 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 4.5 |
| 1,2-Dibromoethane | ND | 4.5 |
| Chlorobenzene | ND | 4.5 |
| 1,1,1,2-Tetrachloroethane | ND | 4.5 |
| Ethylbenzene | ND | 4.5 |
| m,p-Xylenes | ND | 4.5 |
| o-Xylene | ND | 4.5 |
| Styrene | ND | 4.5 |
| Bromoform | ND | 4.5 |
| Isopropylbenzene | ND | 4.5 |
| 1,1,2,2-Tetrachloroethane | ND | 4.5 |
| 1,2,3-Trichloropropane | ND | 4.5 |
| Propylbenzene | ND | 4.5 |
| Bromobenzene | ND | 4.5 |
| 1,3,5-Trimethylbenzene | ND | 4.5 |
| 2-Chlorotoluene | ND | 4.5 |
| 4-Chlorotoluene | ND | 4.5 |
| tert-Butylbenzene | ND | 4.5 |
| 1,2,4-Trimethylbenzene | ND | 4.5 |
| sec-Butylbenzene | ND | 4.5 |
| para-Isopropyl Toluene | ND | 4.5 |
| 1,3-Dichlorobenzene | ND | 4.5 |
| 1,4-Dichlorobenzene | ND | 4.5 |
| n-Butylbenzene | ND | 4.5 |
| 1,2-Dichlorobenzene | ND | 4.5 |
| 1,2-Dibromo-3-Chloropropane | ND | 4.5 |
| 1,2,4-Trichlorobenzene | ND | 4.5 |
| Hexachlorobutadiene | ND | 4.5 |
| Naphthalene | ND | 4.5 |
| 1,2,3-Trichlorobenzene | ND | 4.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 99 | 78-134 |
| 1,2-Dichloroethane-d4 | 110 | 80-138 |
| Toluene-d8 | 102 | 80-120 |
| Bromofluorobenzene | 106 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-13 | Diln Fac: | 200.0 |
| Lab ID: | 281778-003 | Batch#: | 239914 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/07/16 |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 2,000 |
| Chloromethane | ND | 2,000 |
| Vinyl Chloride | ND | 2,000 |
| Bromomethane | ND | 2,000 |
| Chloroethane | ND | 2,000 |
| Trichlorofluoromethane | ND | 1,000 |
| Acetone | ND | 4,000 |
| Freon 113 | ND | 1,000 |
| 1,1-Dichloroethene | ND | 1,000 |
| Methylene Chloride | ND | 4,000 |
| Carbon Disulfide | ND | 1,000 |
| MTBE | ND | 1,000 |
| trans-1,2-Dichloroethene | ND | 1,000 |
| Vinyl Acetate | ND | 10,000 |
| 1,1-Dichloroethane | ND | 1,000 |
| 2-Butanone | ND | 2,000 |
| cis-1,2-Dichloroethene | ND | 1,000 |
| 2,2-Dichloropropane | ND | 1,000 |
| Chloroform | ND | 1,000 |
| Bromochloromethane | ND | 1,000 |
| 1,1,1-Trichloroethane | ND | 1,000 |
| 1,1-Dichloropropene | ND | 1,000 |
| Carbon Tetrachloride | ND | 1,000 |
| 1,2-Dichloroethane | ND | 1,000 |
| Benzene | ND | 1,000 |
| Trichloroethene | ND | 1,000 |
| 1,2-Dichloropropane | ND | 1,000 |
| Bromodichloromethane | ND | 1,000 |
| Dibromomethane | ND | 1,000 |
| 4-Methyl-2-Pentanone | ND | 2,000 |
| cis-1,3-Dichloropropene | ND | 1,000 |
| Toluene | ND | 1,000 |
| trans-1,3-Dichloropropene | ND | 1,000 |
| 1,1,2-Trichloroethane | ND | 1,000 |
| 2-Hexanone | ND | 2,000 |
| 1,3-Dichloropropane | ND | 1,000 |
| Tetrachloroethene | ND | 1,000 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-13 | Diln Fac: | 200.0 |
| Lab ID: | 281778-003 | Batch#: | 239914 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/07/16 |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 1,000 |
| 1,2-Dibromoethane | ND | 1,000 |
| Chlorobenzene | ND | 1,000 |
| 1,1,1,2-Tetrachloroethane | ND | 1,000 |
| Ethylbenzene | 5,700 | 1,000 |
| m,p-Xylenes | 5,200 | 1,000 |
| o-Xylene | ND | 1,000 |
| Styrene | ND | 1,000 |
| Bromoform | ND | 1,000 |
| Isopropylbenzene | ND | 1,000 |
| 1,1,2,2-Tetrachloroethane | ND | 1,000 |
| 1,2,3-Trichloropropane | ND | 1,000 |
| Propylbenzene | 4,400 | 1,000 |
| Bromobenzene | ND | 1,000 |
| 1,3,5-Trimethylbenzene | 5,300 | 1,000 |
| 2-Chlorotoluene | ND | 1,000 |
| 4-Chlorotoluene | ND | 1,000 |
| tert-Butylbenzene | ND | 1,000 |
| 1,2,4-Trimethylbenzene | 21,000 | 1,000 |
| sec-Butylbenzene | ND | 1,000 |
| para-Isopropyl Toluene | ND | 1,000 |
| 1,3-Dichlorobenzene | ND | 1,000 |
| 1,4-Dichlorobenzene | ND | 1,000 |
| n-Butylbenzene | 2,000 | 1,000 |
| 1,2-Dichlorobenzene | ND | 1,000 |
| 1,2-Dibromo-3-Chloropropane | ND | 1,000 |
| 1,2,4-Trichlorobenzene | ND | 1,000 |
| Hexachlorobutadiene | ND | 1,000 |
| Naphthalene | 3,300 | 1,000 |
| 1,2,3-Trichlorobenzene | ND | 1,000 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 101 | 80-138 |
| Toluene-d8 | 104 | 80-120 |
| Bromofluorobenzene | 98 | 78-123 |
| Trifluorotoluene (MeOH) | 88 | 52-147 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-22 | Diln Fac: | 0.9208 |
| Lab ID: | 281778-004 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 9.2 |
| Chloromethane | ND | 9.2 |
| Vinyl Chloride | ND | 9.2 |
| Bromomethane | ND | 9.2 |
| Chloroethane | ND | 9.2 |
| Trichlorofluoromethane | ND | 4.6 |
| Acetone | ND | 18 |
| Freon 113 | ND | 4.6 |
| 1,1-Dichloroethene | ND | 4.6 |
| Methylene Chloride | ND | 18 |
| Carbon Disulfide | ND | 4.6 |
| MTBE | ND | 4.6 |
| trans-1,2-Dichloroethene | ND | 4.6 |
| Vinyl Acetate | ND | 46 |
| 1,1-Dichloroethane | ND | 4.6 |
| 2-Butanone | ND | 9.2 |
| cis-1,2-Dichloroethene | ND | 4.6 |
| 2,2-Dichloropropane | ND | 4.6 |
| Chloroform | ND | 4.6 |
| Bromochloromethane | ND | 4.6 |
| 1,1,1-Trichloroethane | ND | 4.6 |
| 1,1-Dichloropropene | ND | 4.6 |
| Carbon Tetrachloride | ND | 4.6 |
| 1,2-Dichloroethane | ND | 4.6 |
| Benzene | ND | 4.6 |
| Trichloroethene | ND | 4.6 |
| 1,2-Dichloropropane | ND | 4.6 |
| Bromodichloromethane | ND | 4.6 |
| Dibromomethane | ND | 4.6 |
| 4-Methyl-2-Pentanone | ND | 9.2 |
| cis-1,3-Dichloropropene | ND | 4.6 |
| Toluene | ND | 4.6 |
| trans-1,3-Dichloropropene | ND | 4.6 |
| 1,1,2-Trichloroethane | ND | 4.6 |
| 2-Hexanone | ND | 9.2 |
| 1,3-Dichloropropane | ND | 4.6 |
| Tetrachloroethene | ND | 4.6 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-1-22 | Diln Fac: | 0.9208 |
| Lab ID: | 281778-004 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 4.6 |
| 1,2-Dibromoethane | ND | 4.6 |
| Chlorobenzene | ND | 4.6 |
| 1,1,1,2-Tetrachloroethane | ND | 4.6 |
| Ethylbenzene | ND | 4.6 |
| m,p-Xylenes | ND | 4.6 |
| o-Xylene | ND | 4.6 |
| Styrene | ND | 4.6 |
| Bromoform | ND | 4.6 |
| Isopropylbenzene | ND | 4.6 |
| 1,1,2,2-Tetrachloroethane | ND | 4.6 |
| 1,2,3-Trichloropropane | ND | 4.6 |
| Propylbenzene | ND | 4.6 |
| Bromobenzene | ND | 4.6 |
| 1,3,5-Trimethylbenzene | ND | 4.6 |
| 2-Chlorotoluene | ND | 4.6 |
| 4-Chlorotoluene | ND | 4.6 |
| tert-Butylbenzene | ND | 4.6 |
| 1,2,4-Trimethylbenzene | ND | 4.6 |
| sec-Butylbenzene | ND | 4.6 |
| para-Isopropyl Toluene | ND | 4.6 |
| 1,3-Dichlorobenzene | ND | 4.6 |
| 1,4-Dichlorobenzene | ND | 4.6 |
| n-Butylbenzene | ND | 4.6 |
| 1,2-Dichlorobenzene | ND | 4.6 |
| 1,2-Dibromo-3-Chloropropane | ND | 4.6 |
| 1,2,4-Trichlorobenzene | ND | 4.6 |
| Hexachlorobutadiene | ND | 4.6 |
| Naphthalene | ND | 4.6 |
| 1,2,3-Trichlorobenzene | ND | 4.6 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 100 | 78-134 |
| 1,2-Dichloroethane-d4 | 109 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 105 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-2-4 | Diln Fac: | 0.9785 |
| Lab ID: | 281778-005 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 9.8 |
| Chloromethane | ND | 9.8 |
| Vinyl Chloride | ND | 9.8 |
| Bromomethane | ND | 9.8 |
| Chloroethane | ND | 9.8 |
| Trichlorofluoromethane | ND | 4.9 |
| Acetone | ND | 20 |
| Freon 113 | ND | 4.9 |
| 1,1-Dichloroethene | ND | 4.9 |
| Methylene Chloride | ND | 20 |
| Carbon Disulfide | ND | 4.9 |
| MTBE | ND | 4.9 |
| trans-1,2-Dichloroethene | ND | 4.9 |
| Vinyl Acetate | ND | 49 |
| 1,1-Dichloroethane | ND | 4.9 |
| 2-Butanone | ND | 9.8 |
| cis-1,2-Dichloroethene | ND | 4.9 |
| 2,2-Dichloropropane | ND | 4.9 |
| Chloroform | ND | 4.9 |
| Bromochloromethane | ND | 4.9 |
| 1,1,1-Trichloroethane | ND | 4.9 |
| 1,1-Dichloropropene | ND | 4.9 |
| Carbon Tetrachloride | ND | 4.9 |
| 1,2-Dichloroethane | ND | 4.9 |
| Benzene | ND | 4.9 |
| Trichloroethene | ND | 4.9 |
| 1,2-Dichloropropane | ND | 4.9 |
| Bromodichloromethane | ND | 4.9 |
| Dibromomethane | ND | 4.9 |
| 4-Methyl-2-Pentanone | ND | 9.8 |
| cis-1,3-Dichloropropene | ND | 4.9 |
| Toluene | ND | 4.9 |
| trans-1,3-Dichloropropene | ND | 4.9 |
| 1,1,2-Trichloroethane | ND | 4.9 |
| 2-Hexanone | ND | 9.8 |
| 1,3-Dichloropropane | ND | 4.9 |
| Tetrachloroethene | ND | 4.9 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-2-4 | Diln Fac: | 0.9785 |
| Lab ID: | 281778-005 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 4.9 |
| 1,2-Dibromoethane | ND | 4.9 |
| Chlorobenzene | ND | 4.9 |
| 1,1,1,2-Tetrachloroethane | ND | 4.9 |
| Ethylbenzene | ND | 4.9 |
| m,p-Xylenes | ND | 4.9 |
| o-Xylene | ND | 4.9 |
| Styrene | ND | 4.9 |
| Bromoform | ND | 4.9 |
| Isopropylbenzene | ND | 4.9 |
| 1,1,2,2-Tetrachloroethane | ND | 4.9 |
| 1,2,3-Trichloropropane | ND | 4.9 |
| Propylbenzene | ND | 4.9 |
| Bromobenzene | ND | 4.9 |
| 1,3,5-Trimethylbenzene | ND | 4.9 |
| 2-Chlorotoluene | ND | 4.9 |
| 4-Chlorotoluene | ND | 4.9 |
| tert-Butylbenzene | ND | 4.9 |
| 1,2,4-Trimethylbenzene | ND | 4.9 |
| sec-Butylbenzene | ND | 4.9 |
| para-Isopropyl Toluene | ND | 4.9 |
| 1,3-Dichlorobenzene | ND | 4.9 |
| 1,4-Dichlorobenzene | ND | 4.9 |
| n-Butylbenzene | ND | 4.9 |
| 1,2-Dichlorobenzene | ND | 4.9 |
| 1,2-Dibromo-3-Chloropropane | ND | 4.9 |
| 1,2,4-Trichlorobenzene | ND | 4.9 |
| Hexachlorobutadiene | ND | 4.9 |
| Naphthalene | ND | 4.9 |
| 1,2,3-Trichlorobenzene | ND | 4.9 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 99 | 78-134 |
| 1,2-Dichloroethane-d4 | 111 | 80-138 |
| Toluene-d8 | 102 | 80-120 |
| Bromofluorobenzene | 106 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-2-9 | Diln Fac: | 0.8961 |
| Lab ID: | 281778-006 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 9.0 |
| Chloromethane | ND | 9.0 |
| Vinyl Chloride | ND | 9.0 |
| Bromomethane | ND | 9.0 |
| Chloroethane | ND | 9.0 |
| Trichlorofluoromethane | ND | 4.5 |
| Acetone | 39 | 18 |
| Freon 113 | ND | 4.5 |
| 1,1-Dichloroethene | ND | 4.5 |
| Methylene Chloride | ND | 18 |
| Carbon Disulfide | ND | 4.5 |
| MTBE | ND | 4.5 |
| trans-1,2-Dichloroethene | ND | 4.5 |
| Vinyl Acetate | ND | 45 |
| 1,1-Dichloroethane | ND | 4.5 |
| 2-Butanone | ND | 9.0 |
| cis-1,2-Dichloroethene | ND | 4.5 |
| 2,2-Dichloropropane | ND | 4.5 |
| Chloroform | ND | 4.5 |
| Bromochloromethane | ND | 4.5 |
| 1,1,1-Trichloroethane | ND | 4.5 |
| 1,1-Dichloropropene | ND | 4.5 |
| Carbon Tetrachloride | ND | 4.5 |
| 1,2-Dichloroethane | ND | 4.5 |
| Benzene | ND | 4.5 |
| Trichloroethene | ND | 4.5 |
| 1,2-Dichloropropane | ND | 4.5 |
| Bromodichloromethane | ND | 4.5 |
| Dibromomethane | ND | 4.5 |
| 4-Methyl-2-Pentanone | ND | 9.0 |
| cis-1,3-Dichloropropene | ND | 4.5 |
| Toluene | ND | 4.5 |
| trans-1,3-Dichloropropene | ND | 4.5 |
| 1,1,2-Trichloroethane | ND | 4.5 |
| 2-Hexanone | ND | 9.0 |
| 1,3-Dichloropropane | ND | 4.5 |
| Tetrachloroethene | ND | 4.5 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-2-9 | Diln Fac: | 0.8961 |
| Lab ID: | 281778-006 | Batch#: | 239810 |
| Matrix: | Soil | Sampled: | 10/04/16 |
| Units: | ug/Kg | Received: | 10/04/16 |
| Basis: | as received | Analyzed: | 10/05/16 |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 4.5 |
| 1,2-Dibromoethane | ND | 4.5 |
| Chlorobenzene | ND | 4.5 |
| 1,1,1,2-Tetrachloroethane | ND | 4.5 |
| Ethylbenzene | ND | 4.5 |
| m,p-Xylenes | ND | 4.5 |
| o-Xylene | ND | 4.5 |
| Styrene | ND | 4.5 |
| Bromoform | ND | 4.5 |
| Isopropylbenzene | ND | 4.5 |
| 1,1,2,2-Tetrachloroethane | ND | 4.5 |
| 1,2,3-Trichloropropane | ND | 4.5 |
| Propylbenzene | ND | 4.5 |
| Bromobenzene | ND | 4.5 |
| 1,3,5-Trimethylbenzene | ND | 4.5 |
| 2-Chlorotoluene | ND | 4.5 |
| 4-Chlorotoluene | ND | 4.5 |
| tert-Butylbenzene | ND | 4.5 |
| 1,2,4-Trimethylbenzene | ND | 4.5 |
| sec-Butylbenzene | ND | 4.5 |
| para-Isopropyl Toluene | ND | 4.5 |
| 1,3-Dichlorobenzene | ND | 4.5 |
| 1,4-Dichlorobenzene | ND | 4.5 |
| n-Butylbenzene | ND | 4.5 |
| 1,2-Dichlorobenzene | ND | 4.5 |
| 1,2-Dibromo-3-Chloropropane | ND | 4.5 |
| 1,2,4-Trichlorobenzene | ND | 4.5 |
| Hexachlorobutadiene | ND | 4.5 |
| Naphthalene | ND | 4.5 |
| 1,2,3-Trichlorobenzene | ND | 4.5 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 101 | 78-134 |
| 1,2-Dichloroethane-d4 | 109 | 80-138 |
| Toluene-d8 | 103 | 80-120 |
| Bromofluorobenzene | 108 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-2-13 | Basis: | as received |
| Lab ID: | 281778-007 | Sampled: | 10/04/16 |
| Matrix: | Soil | Received: | 10/04/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL | Diln Fac | Batch# | Analyzed |
|---|---|---|---|---|---|
| Freon 12 | ND | 110 | 10.64 | 239810 | 10/05/16 |
| Chloromethane | ND | 110 | 10.64 | 239810 | 10/05/16 |
| Vinyl Chloride | ND | 110 | 10.64 | 239810 | 10/05/16 |
| Bromomethane | ND | 110 | 10.64 | 239810 | 10/05/16 |
| Chloroethane | ND | 110 | 10.64 | 239810 | 10/05/16 |
| Trichlorofluoromethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Acetone | ND | 210 | 10.64 | 239810 | 10/05/16 |
| Freon 113 | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,1-Dichloroethene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Methylene Chloride | ND | 210 | 10.64 | 239810 | 10/05/16 |
| Carbon Disulfide | ND | 53 | 10.64 | 239810 | 10/05/16 |
| MTBE | ND | 53 | 10.64 | 239810 | 10/05/16 |
| trans-1,2-Dichloroethene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Vinyl Acetate | ND | 530 | 10.64 | 239810 | 10/05/16 |
| 1,1-Dichloroethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 2-Butanone | ND | 110 | 10.64 | 239810 | 10/05/16 |
| cis-1,2-Dichloroethene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 2,2-Dichloropropane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Chloroform | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Bromochloromethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,1,1-Trichloroethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,1-Dichloropropene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Carbon Tetrachloride | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2-Dichloroethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Benzene | 71 | 53 | 10.64 | 239810 | 10/05/16 |
| Trichloroethene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2-Dichloropropane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Bromodichloromethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Dibromomethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 4-Methyl-2-Pentanone | ND | 110 | 10.64 | 239810 | 10/05/16 |
| cis-1,3-Dichloropropene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Toluene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| trans-1,3-Dichloropropene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,1,2-Trichloroethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 2-Hexanone | ND | 110 | 10.64 | 239810 | 10/05/16 |
| 1,3-Dichloropropane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Tetrachloroethene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Dibromochloromethane | ND | 53 | 10.64 | 239810 | 10/05/16 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | SB-2-13 | Basis: | as received |
| Lab ID: | 281778-007 | Sampled: | 10/04/16 |
| Matrix: | Soil | Received: | 10/04/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL | Diln Fac | Batch# | Analyzed |
|---|---|---|---|---|---|
| 1,2-Dibromoethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Chlorobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,1,1,2-Tetrachloroethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Ethylbenzene | 1,200 | 250 | 50.00 | 239858 | 10/06/16 |
| m,p-Xylenes | 980 | 53 | 10.64 | 239810 | 10/05/16 |
| o-Xylene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Styrene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Bromoform | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Isopropylbenzene | 270 | 53 | 10.64 | 239810 | 10/05/16 |
| 1,1,2,2-Tetrachloroethane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2,3-Trichloropropane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Propylbenzene | 1,500 | 53 | 10.64 | 239810 | 10/05/16 |
| Bromobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,3,5-Trimethylbenzene | 540 | 53 | 10.64 | 239810 | 10/05/16 |
| 2-Chlorotoluene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 4-Chlorotoluene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| tert-Butylbenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2,4-Trimethylbenzene | 770 | 53 | 10.64 | 239810 | 10/05/16 |
| sec-Butylbenzene | 86 | 53 | 10.64 | 239810 | 10/05/16 |
| para-Isopropyl Toluene | 76 | 53 | 10.64 | 239810 | 10/05/16 |
| 1,3-Dichlorobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,4-Dichlorobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| n-Butylbenzene | 240 | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2-Dichlorobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2-Dibromo-3-Chloropropane | ND | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2,4-Trichlorobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Hexachlorobutadiene | ND | 53 | 10.64 | 239810 | 10/05/16 |
| Naphthalene | 1,300 | 53 | 10.64 | 239810 | 10/05/16 |
| 1,2,3-Trichlorobenzene | ND | 53 | 10.64 | 239810 | 10/05/16 |

| Surrogate | %REC | Limits | Diln Fac | Batch# | Analyzed |
|---|---|---|---|---|---|
| Dibromofluoromethane | 96 | 78-134 | 10.64 | 239810 | 10/05/16 |
| 1,2-Dichloroethane-d4 | 102 | 80-138 | 10.64 | 239810 | 10/05/16 |
| Toluene-d8 | 103 | 80-120 | 10.64 | 239810 | 10/05/16 |
| Bromofluorobenzene | 80 | 78-123 | 10.64 | 239810 | 10/05/16 |
| Trifluorotoluene (MeOH) | 87 | 52-147 | 50.00 | 239858 | 10/06/16 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Matrix: | Soil | Batch#: | 239810 |
| Units: | ug/Kg | Analyzed: | 10/05/16 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC854304

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| 1,1-Dichloroethene | 25.00 | 22.25 | 89 | 70-134 |
| Benzene | 25.00 | 23.61 | 94 | 80-123 |
| Trichloroethene | 25.00 | 23.11 | 92 | 80-128 |
| Toluene | 25.00 | 24.01 | 96 | 80-120 |
| Chlorobenzene | 25.00 | 22.75 | 91 | 80-123 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 102 | 78-134 |
| 1,2-Dichloroethane-d4 | 105 | 80-138 |
| Toluene-d8 | 103 | 80-120 |
| Bromofluorobenzene | 99 | 78-123 |

Type: BSD Lab ID: QC854305

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 25.00 | 21.82 | 87 | 70-134 | 2 | 22 |
| Benzene | 25.00 | 23.90 | 96 | 80-123 | 1 | 21 |
| Trichloroethene | 25.00 | 23.32 | 93 | 80-128 | 1 | 23 |
| Toluene | 25.00 | 24.02 | 96 | 80-120 | 0 | 20 |
| Chlorobenzene | 25.00 | 23.09 | 92 | 80-123 | 2 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 107 | 80-138 |
| Toluene-d8 | 102 | 80-120 |
| Bromofluorobenzene | 95 | 78-123 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC854306 | Batch#: | 239810 |
| Matrix: | Soil | Analyzed: | 10/05/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 10 |
| Chloromethane | ND | 10 |
| Vinyl Chloride | ND | 10 |
| Bromomethane | ND | 10 |
| Chloroethane | ND | 10 |
| Trichlorofluoromethane | ND | 5.0 |
| Acetone | ND | 20 |
| Freon 113 | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| Methylene Chloride | ND | 20 |
| Carbon Disulfide | ND | 5.0 |
| MTBE | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| Vinyl Acetate | ND | 50 |
| 1,1-Dichloroethane | ND | 5.0 |
| 2-Butanone | ND | 10 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| Chloroform | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| Carbon Tetrachloride | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| 4-Methyl-2-Pentanone | ND | 10 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| Toluene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 1,3-Dichloropropane | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC854306 | Batch#: | 239810 |
| Matrix: | Soil | Analyzed: | 10/05/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Styrene | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| Propylbenzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 2-Chlorotoluene | ND | 5.0 |
| 4-Chlorotoluene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| para-Isopropyl Toluene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dibromo-3-Chloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| Hexachlorobutadiene | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 99 | 78-134 |
| 1,2-Dichloroethane-d4 | 104 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 103 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 239810 |
| MSS Lab ID: | 281760-005 | Sampled: | 10/04/16 |
| Matrix: | Soil | Received: | 10/04/16 |
| Units: | ug/Kg | Analyzed: | 10/05/16 |
| Basis: | as received | | |

Type: MS Diln Fac: 0.9506
Lab ID: QC854337

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | <0.5812 | 47.53 | 40.63 | 85 | 56-133 |
| Benzene | <0.6772 | 47.53 | 43.07 | 91 | 57-120 |
| Trichloroethene | <0.7053 | 47.53 | 40.86 | 86 | 49-145 |
| Toluene | <0.7417 | 47.53 | 41.27 | 87 | 51-120 |
| Chlorobenzene | <0.6081 | 47.53 | 38.93 | 82 | 47-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 100 | 78-134 |
| 1,2-Dichloroethane-d4 | 108 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 50 * | 78-123 |

Type: MSD Diln Fac: 0.9560
Lab ID: QC854338

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 47.80 | 42.20 | 88 | 56-133 | 3 | 46 |
| Benzene | 47.80 | 44.40 | 93 | 57-120 | 2 | 44 |
| Trichloroethene | 47.80 | 41.78 | 87 | 49-145 | 2 | 46 |
| Toluene | 47.80 | 43.06 | 90 | 51-120 | 4 | 47 |
| Chlorobenzene | 47.80 | 40.36 | 84 | 47-120 | 3 | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 106 | 80-138 |
| Toluene-d8 | 100 | 80-120 |
| Bromofluorobenzene | 55 * | 78-123 |

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Matrix: | Soil | Batch#: | 239858 |
| Units: | ug/Kg | Analyzed: | 10/06/16 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC854500

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| 1,1-Dichloroethene | 25.00 | 22.28 | 89 | 70-134 |
| Benzene | 25.00 | 23.51 | 94 | 80-123 |
| Trichloroethene | 25.00 | 23.19 | 93 | 80-128 |
| Toluene | 25.00 | 23.67 | 95 | 80-120 |
| Chlorobenzene | 25.00 | 23.11 | 92 | 80-123 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 103 | 80-138 |
| Toluene-d8 | 99 | 80-120 |
| Bromofluorobenzene | 98 | 78-123 |

Type: BSD Lab ID: QC854501

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 25.00 | 20.44 | 82 | 70-134 | 9 | 22 |
| Benzene | 25.00 | 22.44 | 90 | 80-123 | 5 | 21 |
| Trichloroethene | 25.00 | 22.20 | 89 | 80-128 | 4 | 23 |
| Toluene | 25.00 | 22.58 | 90 | 80-120 | 5 | 20 |
| Chlorobenzene | 25.00 | 22.39 | 90 | 80-123 | 3 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 94 | 78-134 |
| 1,2-Dichloroethane-d4 | 101 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 98 | 78-123 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC854502 | Batch#: | 239858 |
| Matrix: | Soil | Analyzed: | 10/06/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 10 |
| Chloromethane | ND | 10 |
| Vinyl Chloride | ND | 10 |
| Bromomethane | ND | 10 |
| Chloroethane | ND | 10 |
| Trichlorofluoromethane | ND | 5.0 |
| Acetone | ND | 20 |
| Freon 113 | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| Methylene Chloride | ND | 20 |
| Carbon Disulfide | ND | 5.0 |
| MTBE | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| Vinyl Acetate | ND | 50 |
| 1,1-Dichloroethane | ND | 5.0 |
| 2-Butanone | ND | 10 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| Chloroform | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| Carbon Tetrachloride | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| 4-Methyl-2-Pentanone | ND | 10 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| Toluene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 1,3-Dichloropropane | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC854502 | Batch#: | 239858 |
| Matrix: | Soil | Analyzed: | 10/06/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Styrene | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| Propylbenzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 2-Chlorotoluene | ND | 5.0 |
| 4-Chlorotoluene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| para-Isopropyl Toluene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dibromo-3-Chloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| Hexachlorobutadiene | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 78-134 |
| 1,2-Dichloroethane-d4 | 101 | 80-138 |
| Toluene-d8 | 102 | 80-120 |
| Bromofluorobenzene | 104 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Matrix: | Soil | Batch#: | 239914 |
| Units: | ug/Kg | Analyzed: | 10/07/16 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC854711

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| 1,1-Dichloroethene | 25.00 | 20.45 | 82 | 70-134 |
| Benzene | 25.00 | 22.18 | 89 | 80-123 |
| Trichloroethene | 25.00 | 22.11 | 88 | 80-128 |
| Toluene | 25.00 | 22.13 | 89 | 80-120 |
| Chlorobenzene | 25.00 | 22.05 | 88 | 80-123 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 103 | 80-138 |
| Toluene-d8 | 99 | 80-120 |
| Bromofluorobenzene | 101 | 78-123 |

Type: BSD Lab ID: QC854712

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 25.00 | 23.09 | 92 | 70-134 | 12 | 22 |
| Benzene | 25.00 | 24.66 | 99 | 80-123 | 11 | 21 |
| Trichloroethene | 25.00 | 24.25 | 97 | 80-128 | 9 | 23 |
| Toluene | 25.00 | 25.11 | 100 | 80-120 | 13 | 20 |
| Chlorobenzene | 25.00 | 24.52 | 98 | 80-123 | 11 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 78-134 |
| 1,2-Dichloroethane-d4 | 103 | 80-138 |
| Toluene-d8 | 102 | 80-120 |
| Bromofluorobenzene | 98 | 78-123 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC854713 | Batch#: | 239914 |
| Matrix: | Soil | Analyzed: | 10/07/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| Freon 12 | ND | 10 |
| Chloromethane | ND | 10 |
| Vinyl Chloride | ND | 10 |
| Bromomethane | ND | 10 |
| Chloroethane | ND | 10 |
| Trichlorofluoromethane | ND | 5.0 |
| Acetone | ND | 20 |
| Freon 113 | ND | 5.0 |
| 1,1-Dichloroethene | ND | 5.0 |
| Methylene Chloride | ND | 20 |
| Carbon Disulfide | ND | 5.0 |
| MTBE | ND | 5.0 |
| trans-1,2-Dichloroethene | ND | 5.0 |
| Vinyl Acetate | ND | 50 |
| 1,1-Dichloroethane | ND | 5.0 |
| 2-Butanone | ND | 10 |
| cis-1,2-Dichloroethene | ND | 5.0 |
| 2,2-Dichloropropane | ND | 5.0 |
| Chloroform | ND | 5.0 |
| Bromochloromethane | ND | 5.0 |
| 1,1,1-Trichloroethane | ND | 5.0 |
| 1,1-Dichloropropene | ND | 5.0 |
| Carbon Tetrachloride | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| Benzene | ND | 5.0 |
| Trichloroethene | ND | 5.0 |
| 1,2-Dichloropropane | ND | 5.0 |
| Bromodichloromethane | ND | 5.0 |
| Dibromomethane | ND | 5.0 |
| 4-Methyl-2-Pentanone | ND | 10 |
| cis-1,3-Dichloropropene | ND | 5.0 |
| Toluene | ND | 5.0 |
| trans-1,3-Dichloropropene | ND | 5.0 |
| 1,1,2-Trichloroethane | ND | 5.0 |
| 2-Hexanone | ND | 10 |
| 1,3-Dichloropropane | ND | 5.0 |
| Tetrachloroethene | ND | 5.0 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Type: | BLANK | Diln Fac: | 1.000 |
| Lab ID: | QC854713 | Batch#: | 239914 |
| Matrix: | Soil | Analyzed: | 10/07/16 |
| Units: | ug/Kg | | |

| Analyte | Result | RL |
|---|---|---|
| Dibromochloromethane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Chlorobenzene | ND | 5.0 |
| 1,1,1,2-Tetrachloroethane | ND | 5.0 |
| Ethylbenzene | ND | 5.0 |
| m,p-Xylenes | ND | 5.0 |
| o-Xylene | ND | 5.0 |
| Styrene | ND | 5.0 |
| Bromoform | ND | 5.0 |
| Isopropylbenzene | ND | 5.0 |
| 1,1,2,2-Tetrachloroethane | ND | 5.0 |
| 1,2,3-Trichloropropane | ND | 5.0 |
| Propylbenzene | ND | 5.0 |
| Bromobenzene | ND | 5.0 |
| 1,3,5-Trimethylbenzene | ND | 5.0 |
| 2-Chlorotoluene | ND | 5.0 |
| 4-Chlorotoluene | ND | 5.0 |
| tert-Butylbenzene | ND | 5.0 |
| 1,2,4-Trimethylbenzene | ND | 5.0 |
| sec-Butylbenzene | ND | 5.0 |
| para-Isopropyl Toluene | ND | 5.0 |
| 1,3-Dichlorobenzene | ND | 5.0 |
| 1,4-Dichlorobenzene | ND | 5.0 |
| n-Butylbenzene | ND | 5.0 |
| 1,2-Dichlorobenzene | ND | 5.0 |
| 1,2-Dibromo-3-Chloropropane | ND | 5.0 |
| 1,2,4-Trichlorobenzene | ND | 5.0 |
| Hexachlorobutadiene | ND | 5.0 |
| Naphthalene | ND | 5.0 |
| 1,2,3-Trichlorobenzene | ND | 5.0 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 96 | 78-134 |
| 1,2-Dichloroethane-d4 | 103 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 106 | 78-123 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Purgeable Organics by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 281778 | Location: | San Pablo Ave FS |
| Client: | OTG Enviroengineering Solutions, Inc | Prep: | EPA 5030B |
| Project#: | 14EMVO4.1000 | Analysis: | EPA 8260B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 239914 |
| MSS Lab ID: | 281847-001 | Sampled: | 10/04/16 |
| Matrix: | Soil | Received: | 10/05/16 |
| Units: | ug/Kg | Analyzed: | 10/07/16 |
| Basis: | as received | | |

Type: MS Diln Fac: 0.9901
Lab ID: QC854785

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | <0.5975 | 49.50 | 39.51 | 80 | 56-133 |
| Benzene | <0.6961 | 49.50 | 40.82 | 82 | 57-120 |
| Trichloroethene | 9.520 | 49.50 | 53.19 | 88 | 49-145 |
| Toluene | <0.7625 | 49.50 | 39.67 | 80 | 51-120 |
| Chlorobenzene | <0.6251 | 49.50 | 36.80 | 74 | 47-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 100 | 78-134 |
| 1,2-Dichloroethane-d4 | 107 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 67 * | 78-123 |

Type: MSD Diln Fac: 0.9881
Lab ID: QC854786

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 49.41 | 41.24 | 83 | 56-133 | 4 | 46 |
| Benzene | 49.41 | 43.84 | 89 | 57-120 | 7 | 44 |
| Trichloroethene | 49.41 | 56.64 | 95 | 49-145 | 6 | 46 |
| Toluene | 49.41 | 41.92 | 85 | 51-120 | 6 | 47 |
| Chlorobenzene | 49.41 | 38.91 | 79 | 47-120 | 6 | 50 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 99 | 78-134 |
| 1,2-Dichloroethane-d4 | 108 | 80-138 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 65 * | 78-123 |

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference