

**Final**

**Environmental Site Assessment Report**

**Pet Health Clinic**

**Sunnyside, Washington**

**Prepared for:**

**State of Washington Department of Ecology**  
**Toxics Cleanup Program**  
**Central Regional Office**  
**15 West Yakima Avenue, Suite 200**  
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**Teamed with Hart Crowser, Inc.**

**Work Assignment Number: C1100144S**

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**March 13, 2012**

## Approval Form

This document contains geologic work and is therefore submitted under the seal of an appropriately licensed professional, as required by Chapters 18.43 and 18.220 Revised Code of Washington (RCW).

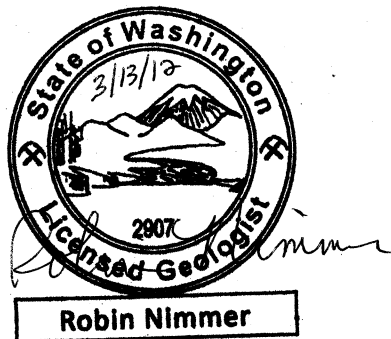
Approved by:

Robin Nimmer

Date: 3/13/12

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Hydrogeologist, TerraGraphics Environmental Engineering, Inc.



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## Acronyms and Abbreviations

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DRO	diesel range organics
Ecology	Washington State Department of Ecology
EDB	ethylene dibromide
EDC	1,2-dichloroethane
EPH	extractable” aliphatic and aromatic petroleum hydrocarbons
famsl	feet above mean sea level
GRO	gasoline range organics
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MTBE	methyl tert-butyl ether
MTCA	Model Toxics Control Act
PID	photo-ionization detector
ppm	parts per million
SAP	Sampling and Analysis Plan
TerraGraphics	TerraGraphics Environmental Engineering, Inc.
TPH-Dx	Total Petroleum Hydrocarbons-Diesel and Oil Range Organics
TPH-Gx	Total Petroleum Hydrocarbons-Gasoline Range Organics
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
VPH	volatile aliphatic and aromatic petroleum hydrocarbons
WAC	Washington Administrative Code

## Executive Summary

TerraGraphics Environmental Engineering, Inc. (TerraGraphics) teamed with Hart Crowser, Inc. (under contract with the Washington State Department of Ecology [Ecology]) to identify potential soil and/or groundwater contamination at the Pet Health Clinic, located in Sunnyside, Washington (Figure 1). Soil sample results were compared to Washington's Model Toxics Control Act (MTCA) (WAC 173-340) Method A unrestricted cleanup levels (Tables 740-1, WAC 173-340-900). Groundwater sample results were compared to MTCA Method A Cleanup Levels (Tables 720-1). The objective of this assessment is to delineate the vertical and lateral extent of petroleum-impacted soil and groundwater and to determine the potential need for remediation. This document summarizes field activities and analytical data collected, and provides recommendations to address data gaps.

### Site History

The Pet Health Clinic property (hereinafter, referred to as the site) is located at 2210 East Edison Avenue, Sunnyside, Washington (Figure 1). Two underground storage tanks (USTs) were used historically to fuel company vehicles and to supply heating oil for the clinic building. In 1992, a 500-gallon gasoline UST was removed and petroleum odors were observed in surrounding soils. A 500-gallon heating oil tank was located just west of the clinic building and removed in 1994. A subsequent investigation of the subsurface soils indicated concentrations of gasoline- and diesel-range petroleum hydrocarbons above MTCA Method A Unrestricted Cleanup Levels (Table 740-1), along with visual evidence of tank failure. Groundwater was not sampled during tank removal activities, but was present at depths of approximately 5 feet to 7 feet below ground surface. Additional characterization and subsequent remedial action was recommended.

### Soil Quality

**Direct Push Sampling:** Soil borings were advanced at six locations (BH-1 through BH-6) on December 8 and 9, 2011. A total of six soil samples were collected from the soil borings based on field screening results using a portable MiniRae® photo-ionization detector (PID). Samples were collected from the zone with the highest PID reading. The analytical results indicate that four of the six samples contained petroleum hydrocarbons at concentrations above one or more of the MTCA Method A Unrestricted Soil Cleanup Levels. It should be noted that the diesel range organics result is due primarily to a mixture of gasoline range product and weathered diesel fuel as indicated by the analytical laboratory. Detected concentrations (expressed in milligrams per kilogram [mg/kg]) above the cleanup levels are summarized in Table 1, and are listed below:

- BH-2 5 ft
  - benzene = 1.0 mg/kg, Cleanup Level = 0.03 mg/kg.
  - total xylenes = 13.8 mg/kg, Cleanup Level = 9 mg/kg.
  - gasoline range organics = 130 mg/kg, Cleanup Level = 30 mg/kg.
- BH-3 6 ft
  - benzene = 4.9 mg/kg, Cleanup Level = 0.03 mg/kg.
  - toluene = 60 mg/kg, Cleanup Level = 7 mg/kg.
  - ethylbenzene = 28 mg/kg, Cleanup Level = 6 mg/kg.
  - total xylenes = 164 mg/kg, Cleanup Level = 9 mg/kg.

- naphthalene = 6.4 mg/kg, Cleanup Level = 5 mg/kg.
- gasoline range organics = 2,200 mg/kg, Cleanup Level = 30 mg/kg.
- diesel range organics = 2,200 mg/kg, Cleanup Level = 2,000 mg/kg.
- BH-4 11 ft
  - benzene = 0.06 mg/kg, Cleanup Level = 0.03 mg/kg.
- BH-5 6 ft
  - benzene = 0.067 mg/kg, Cleanup Level = 0.03 mg/kg.

## Groundwater

Three groundwater monitoring wells (MW-1, MW-2, and MW-3) were installed as part of this assessment on December 8 and 9, 2011. A total of three water samples, plus one duplicate, were collected from the monitoring wells on December 15, 2011. Analytes detected in two of the three water samples were above the respective Method A Cleanup Levels. It should be noted that the diesel and oil range organics results are due primarily to a mixture of gasoline range product and weathered diesel fuel as indicated by the analytical laboratory. Detected concentrations (expressed in micrograms per liter [ $\mu\text{g/L}$ ]) are summarized in Table 2, and those above the screening levels are listed below:

- MW-2
  - benzene = 120  $\mu\text{g/L}$ , Cleanup Level = 5  $\mu\text{g/L}$ .
  - total xylenes = 1,360  $\mu\text{g/L}$ , Cleanup Level = 1,000  $\mu\text{g/L}$ .
  - gasoline range organics = 7,800  $\mu\text{g/L}$ , Cleanup Level = 800  $\mu\text{g/L}$ .
  - diesel range organics = 2,100  $\mu\text{g/L}$ , Cleanup Level = 500  $\mu\text{g/L}$ .
- MW-3
  - benzene = 1,700  $\mu\text{g/L}$ , Cleanup Level = 5  $\mu\text{g/L}$ .
  - total xylenes = 1,740  $\mu\text{g/L}$ , Cleanup Level = 1,000  $\mu\text{g/L}$ .
  - 1,2-dichloroethane = 130  $\mu\text{g/L}$ , Cleanup Level = 5  $\mu\text{g/L}$ .
  - gasoline range organics = 11,000  $\mu\text{g/L}$ , Cleanup Level = 800  $\mu\text{g/L}$ .
  - diesel range organics = 21,000  $\mu\text{g/L}$ , Cleanup Level = 500  $\mu\text{g/L}$ .
  - motor oil = 3,000  $\mu\text{g/L}$ , Cleanup Level = 500  $\mu\text{g/L}$ .

## Summary and Recommendations

This investigation confirmed that petroleum-impacted soil and groundwater are present at the site. The greatest soil and groundwater impacts appear to be near the former USTs west of the Pet Health Clinic building. Groundwater flows toward the southeast at a calculated gradient of 0.008 ft/ft indicating the potential for migration to the southeast under the Pet Health Clinic building and toward East Edison Avenue.

Based on the available information and site-specific data collected, TerraGraphics concludes the following:

- Soil and groundwater petroleum hydrocarbons exceed MTCA A Cleanup Levels.
- The extent of petroleum impacted soil and groundwater has not been fully characterized to the south and to the southeast of the former USTs.

- The presence of diesel range organics, 1,2-dichloroethane, and gasoline range organics indicate that a release likely occurred from both the former heating oil UST and the former gasoline UST.

Based on the available information and site-specific data collected, TerraGraphics recommends the following:

- Evaluate potential downgradient migration to the south and southeast of the site through additional borings, soil samples, monitoring wells, and groundwater sampling.
- Sample the drinking water well from the adjacent property to the north (Querín residence) to investigate petroleum impacts to this extent.
- Utilize a multiparameter flow cell to more accurately characterize the groundwater field parameters.
- Use information obtained during additional characterization to determine most suitable remediation approach.
- Implement a remediation strategy following the remedial alternatives evaluation.

## **Section 1.0 Introduction**

The Pet Health Clinic property (hereinafter, referred to as the site) is located at 2210 East Edison Avenue, Sunnyside, Washington (Figure 1). The site currently operates as a veterinary clinic and has one main building, asphalt covered parking on the east, gravel covered parking on the west, and grass/landscaping covering the other areas of the property (Figure 2). Two underground storage tanks (USTs) were used historically to fuel company vehicles and to supply heating oil for the clinic building. In 1992, the 500-gallon gasoline UST was removed and petroleum odors were observed in surrounding soils. The 500-gallon heating oil tank was located just northwest of the clinic building and removed in 1994. A subsequent investigation of the subsurface soils indicated concentrations of gasoline- and diesel-range petroleum hydrocarbons above Model Toxics Control Act (MTCA) Method A unrestricted cleanup levels (Table 740-1.), along with visual evidence of tank failure. Groundwater was not sampled during tank removal activities, but was present at depths of approximately 5 feet to 7 feet below ground surface (bgs). Additional characterization and subsequent remedial action was recommended.

Ecology contracted Hart Crowser Inc. and TerraGraphics to perform site assessment and characterization activities. The objective of this assessment is to delineate the vertical and lateral extent of petroleum-impacted soil and groundwater and to determine the potential need for remediation.



## Section 2.0 Field Activities

In general, sampling procedures followed the *Sampling and Analysis Plan (SAP) for Site Assessment at the Pet Health Clinic, Sunnyside, Washington* (TerraGraphics, 2011) except for the following changes:

- The onsite drinking water well was not accessible during the groundwater sampling activities and was therefore not sampled.
- No rinseate blanks were collected since disposable macro-core liners were used to collect soil samples.
- A reduced number of soil samples were collected due to photo-ionization detector (PID) values of zero at many boring locations.
- At most locations one sample per boring was collected because the depth with highest PID reading also corresponded to the depth where groundwater interface was observed.
- A septic tank and drain field were discovered by a private utility contractor in the area between the south side of the Pet Health Clinic building and East Edison Avenue. Therefore a boring was not advanced at this location. The City of Sunnyside, Yakima County Public Works, and Yakima County Health District were contacted following the investigation to determine the location of the septic tank and drain field. Based on information obtained from these sources the exact location of the septic tank and drain field could not be identified but is located generally in front of the Pet Health Clinic building.

### 2.1 Soil Sampling

A total of six borings were completed on December 8 and 9, 2011. See Figure 2 for the soil boring locations. Photographs were taken during the soil boring process, and are included as Appendix A. Borings were advanced using an AMS PowerProbe™ 9600 equipped with a Stanley MB-156 hammer utilizing a single tube Geoprobe® 2-inch diameter 5-foot length macro-core barrel driven in 5-foot increments (e.g., 0-5 feet, 5-10 feet, 10-15 feet, etc.) to the target depth of the borehole. A new Geoprobe® macro-core liner was used to collect each sample interval. All soil samples were screened in the field using a portable MiniRae® PID to check for the presence of volatile organic compounds. A total of six soil samples were collected based on the highest PID reading and sent to Test America Labs in Seattle, Washington. The samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene, and 1,2-dichloroethane (EDC) using U.S. Environmental Protection Agency (USEPA) Method 8260B (USEPA, 1996a); for ethylene dibromide (EDB) by USEPA Method 8011 (USEPA, 1992); for Total Petroleum Hydrocarbons-Gasoline Range Organics (TPH-Gx), Total Petroleum Hydrocarbons-Diesel and Oil Range Organics (TPH-Dx), fractionated volatile aliphatic and aromatic petroleum hydrocarbons (VPH) for gasoline range organics (GRO), and fractionated extractable aliphatic and aromatic petroleum hydrocarbons (EPH) for diesel range organics (DRO) and heavy fuel oils using Ecology's Analytical Methods for Petroleum Hydrocarbons (Ecology, 1997); and for lead using USEPA Method 200.8/6020 (USEPA, 1994). Complete laboratory data sheets and chain-of-custody documentation are included as Appendix B.

In general, the site lithology consists of silts from 0 feet to 5 feet below ground surface and silt/clays from 5 feet to 15 feet bgs. Groundwater was encountered at the site at approximately 6 feet bgs. PID readings ranged from 0 parts per million (ppm) to 1,900 ppm. PID recordings were highest at BH-2 and BH-3. More detailed information of the subsurface conditions can be found in the boring logs included as Appendix C.

## **2.2 Groundwater Sampling**

Three groundwater monitoring wells were installed on December 8 and 9, 2011 (MW-1, MW-2, and MW-3) (see Figure 2, and boring logs in Appendix C). Wells were constructed of 2-inch schedule 40 poly-vinyl chloride pre-pack assemblies. The screened interval was placed to ensure that the maximum water table fluctuations are fully captured by the screen while still maintaining a sufficient well seal. Screen intervals were placed from 6 to 11 feet bgs and are noted on the boring logs. Wells were developed using over-purge methods until groundwater quality stabilized (ph, conductivity, temperature, dissolved oxygen, and oxidation/reduction potential). Groundwater samples were collected using a low-flow peristaltic pump. New peristaltic tubing was used to collect water from each groundwater monitoring well. Groundwater sampling forms are included in Appendix D.

Four groundwater samples, including one duplicate, were collected on December 15, 2011. Samples were labeled and placed in a cooler on ice for transportation to Test America along with the chain-of-custody documentation. Samples were analyzed for BTEX, MTBE, naphthalene, and EDC by USEPA Method 8260B (USEPA, 1996a); for EDB by USEPA Method 8011 (USEPA, 1992); for TPH-Gx, TPH-Dx, VPH-GRO, and EPH-DRO by Ecology's Analytical Methods for Petroleum Hydrocarbons (Ecology, 1997); and for lead using USEPA Method 200.8/6020 (USEPA, 1994). Complete laboratory data sheets and chain-of-custody documentation are included as Appendix B.

The top of casing of each groundwater monitoring well was surveyed by a Washington licensed surveyor, Gray Surveying and Engineering Inc., in NAVD88 datum in the State Plane Projection, on December 15, 2011.

## Section 3.0 Results

The data quality objectives as set forth in the Sampling and Analysis Plan (SAP) (TerraGraphics, 2011) have been achieved. As a result, no data were reduced and the final completeness of the study was assessed at 100%. The following sections summarize the soil and groundwater analytical results.

### 3.1 Soil Sample Analysis

Petroleum hydrocarbon concentrations in four of the six soil samples collected were above one or more of the Method A Unrestricted Cleanup Levels. Detected concentrations (expressed in milligrams per kilogram [mg/kg]) are summarized in Table 1, and those above the cleanup levels are summarized below:

- BH-2 5 ft
  - benzene = 1.0 mg/kg, Cleanup Level = 0.03 mg/kg.
  - total xylenes = 13.8 mg/kg, Cleanup Level = 9 mg/kg.
  - gasoline range organics = 130 mg/kg, Cleanup Level = 30 mg/kg.
- BH-3 6 ft
  - benzene = 4.9 mg/kg, Cleanup Level = 0.03 mg/kg.
  - toluene = 60 mg/kg, Cleanup Level = 7 mg/kg.
  - ethylbenzene = 28 mg/kg, Cleanup Level = 6 mg/kg.
  - total xylenes = 164 mg/kg, Cleanup Level = 9 mg/kg.
  - naphthalene = 6.4 mg/kg, Cleanup Level = 5 mg/kg.
  - gasoline range organics = 2,200 mg/kg, Cleanup Level = 30 mg/kg.
  - diesel range organics = 2,200 mg/kg, Cleanup Level = 2,000 mg/kg.
- BH-4 11 ft
  - benzene = 0.06 mg/kg, Cleanup Level = 0.03 mg/kg.
- BH-5 6 ft
  - benzene = 0.067 mg/kg, Cleanup Level = 0.03 mg/kg.

Petroleum impacted soil appears to be greatest to the west of the Pet Health Clinic building in close proximity to the former USTs as indicated by the analytical results from soil borings BH-2 and BH-3. The elevated benzene concentration detected in the soil sample collected from boring BH-5 located east of the Pet Clinic Building is likely the result of groundwater or vapor transport from the UST area. The vertical extent of impacted soil extends from approximately 1 feet bgs to 15 feet bgs with the highest concentration of contaminants observed at the groundwater interface (approximately 6 feet bgs.)

### 3.2 Groundwater Sample Analysis

Water quality field parameter data were collected during the groundwater purging process prior to sample collection. Field parameters include temperature, pH, specific conductance, dissolved oxygen, and oxidation-reduction potential. These parameters provide information on the water

chemistry and are used as stabilization criteria. The stabilization criteria were used to indicate that the well has been sufficiently purged and that the extracted groundwater is representative of the groundwater from the aquifer (Appendix D). Table 3 lists the field parameter data. The oxidation reduction potential and dissolved oxygen values were not consistent indicating the possibility of instrument error and are therefore qualified as estimates.

A total of three water samples plus one duplicate were collected from groundwater monitoring wells MW-1, MW-2, and MW-3. Analytes detected in two of the three water samples were above their respective Method A Cleanup Levels. Detected concentrations (expressed in micrograms per liter [ $\mu\text{g/L}$ ]) are summarized in Table 2 and those above the screening levels are listed below:

- MW-2
  - benzene = 120  $\mu\text{g/L}$ , Cleanup Level = 5  $\mu\text{g/L}$ .
  - total xylenes = 1,360  $\mu\text{g/L}$ , Cleanup Level = 1,000  $\mu\text{g/L}$ .
  - gasoline range organics = 7,800  $\mu\text{g/L}$ , Cleanup Level = 800  $\mu\text{g/L}$ .
  - diesel range organics = 2,100  $\mu\text{g/L}$ , Cleanup Level = 500  $\mu\text{g/L}$ .
- MW-3
  - benzene = 1,700  $\mu\text{g/L}$ , Cleanup Level = 5  $\mu\text{g/L}$ .
  - total xylenes = 1,740  $\mu\text{g/L}$ , Cleanup Level = 1,000  $\mu\text{g/L}$ .
  - 1,2-dichloroethane = 130  $\mu\text{g/L}$ , Cleanup Level = 5  $\mu\text{g/L}$ .
  - gasoline range organics = 11,000  $\mu\text{g/L}$ , Cleanup Level = 800  $\mu\text{g/L}$ .
  - diesel range organics = 21,000  $\mu\text{g/L}$ , Cleanup Level = 500  $\mu\text{g/L}$ .
  - motor oil = 3,000  $\mu\text{g/L}$ , Cleanup Level = 500  $\mu\text{g/L}$ .

Petroleum impacted groundwater appears to be greatest to the west of the Pet Health Clinic building in close proximity to the former USTs, as indicated by the analytical results from groundwater monitoring wells MW-2 and MW-3. The presence of diesel range organics, EDC, and gasoline range organics indicate that a release likely occurred from both the former heating oil UST and the former gasoline UST. Petroleum hydrocarbons were generally not detected in the upgradient well MW-1. The apparent detection of low levels of oil-range hydrocarbons (140  $\mu\text{g/L}$ ) in MW-1 do not appear to be derived from oil products and may be associated with natural organics.

### 3.3 Groundwater Elevations

Depth to water was measured in each groundwater monitoring well prior to groundwater sampling activities. Groundwater elevations were calculated by subtracting the depth to water measurement from the top of casing elevation (expressed in feet above mean sea level (famsl)). Groundwater elevations ranged from 743.92 famsl at MW-3 to 744.40 famsl at MW-1 (Table 2). Groundwater flow direction is to the southeast at a calculated gradient of 0.008 ft/ft (Figure 3).

### 3.4 Site Features

The Pet Health Clinic building and adjacent home (Querin residence) were constructed at the same time prior to 1960. The drinking water well historically serviced both the Pet Health Clinic building and the Querin home. In 1960 or sometime thereafter, the property was subdivided and while the Pet Health Clinic building received a new water connection to the city service, the

Querin residence and irrigation remained connected to the drinking water well. In addition a septic tank and drain field is located in front of the clinic building (Figure 2).

## **Section 4.0 Method B Cleanup Levels**

The foundation of the Pet Health Clinic building is constructed of a concrete slab-on-grade and lacks a crawl space. Due to the floor construction and shallow contamination, additional characterization may be necessary to evaluate the vapor intrusion pathway and to determine cleanup levels protective of indoor and ambient air.

Fractionated VPH for GRO and fractionated EPH for DRO samples were collected with the intent of potentially establishing site specific soil and groundwater cleanup levels based on protection of human health using the MTCATPH workbook. The workbook provides tools for evaluating the direct contact pathway, the leaching pathway (protection of groundwater), and the vapor pathway (protection of air quality). Because additional site characterization data will need to be collected prior to evaluating cleanup options, site specific screening levels have not been established at this time. Once additional characterization is completed, the MTCATPH workbook can potentially be used to establish site specific screening levels.

## **Section 5.0 Summary**

This investigation confirmed that petroleum-impacted soil and groundwater are present at the site. The greatest soil impacts appear to be near the former USTs as indicated by the analytical results from borings BH-2 and BH-3. Additional impact to soil was also observed at boring BH-5. The vertical extent of impacted soil is from 1-foot bgs to 15 feet bgs with the highest analyte concentrations at approximately 6 feet bgs. Groundwater is impacted to the extent of MW-2 and MW-3 in close proximity to the former USTs. Groundwater flows toward the southeast at a calculated gradient of 0.008 ft/ft indicating the potential for migration to the southeast under the Pet Health Clinic building and toward East Edison Avenue.

## **Section 6.0 Conclusions and Recommendations**

Based on the information obtained during these site assessment activities additional action is recommended at the site to further delineate the extent of petroleum impacts and determine the most suitable remediation approach. Conclusions and recommendations are summarized in the following sections.

### **6.1 Conclusions**

Based on the available information and site-specific data collected, TerraGraphics concludes the following:

- Soil and groundwater concentrations exceed MTCA A Cleanup Levels.
- The extent of petroleum-impacted soil and groundwater requires further characterization to the south and southeast of the former USTs.

## 6.2 Recommendations

Based on the available information and site-specific data collected, TerraGraphics recommends the following:

- Evaluate potential down gradient migration to the south and southeast of the former USTs through additional borings, soil samples, and groundwater sampling.
- Utilize a multiparameter flow cell to more accurately characterize the groundwater field parameters.
- Sample the drinking water well from the adjacent property to the north (Querín residence) to investigate petroleum impacts to this extent.
- Use information obtained during additional characterization to determine the most suitable remediation approach.
- Implement a remediation strategy following the remedial alternatives evaluation.

## Section 7.0 References and Resources Used

- Washington State Department of Ecology (Ecology), 1997. Analytical Methods for Petroleum Hydrocarbons. ECY 97-602, June 1997.
- TerraGraphics Environmental Engineering, Inc. (TerraGraphics), 2011 Sampling Analysis Plan for Site Assessment at Pet Health Clinic, Sunnyside, Washington. Prepared for State of Washington Department of Ecology. December 2, 2011.
- U.S. Environmental Protection Agency (USEPA), 1992. Method 8011: 1,2-dibromoethane and 1,2-dibromo-3-chloropropane by microextraction and gas chromatography.
- USEPA, 1994. Method 200.8: Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma – Mass Spectrometry, Revision 5.4.
- USEPA, 1996a. Method 8260B: Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2.
- Washington Administrative Code (WAC) 173-160. Title 173, Chapter 173-160: Minimum Standards for Construction and Maintenance of Wells. Last update: 12/19/08, accessed November 1, 2011, <http://apps.leg.wa.gov/wac/default.aspx?cite=173-160>.
- WAC 173-340. Title 173, Chapter 173-340: Model Toxics Control Act – cleanup. Last update: 10/12/07, accessed October 18, 2011, <http://apps.leg.wa.gov/wac/default.aspx?cite=173-340>.





Approximate Site Boundary



Image courtesy of Google Maps



Project No. 11071

Scale: not to scale

Requestor: M. Procsal

Drafter: M. Procsal

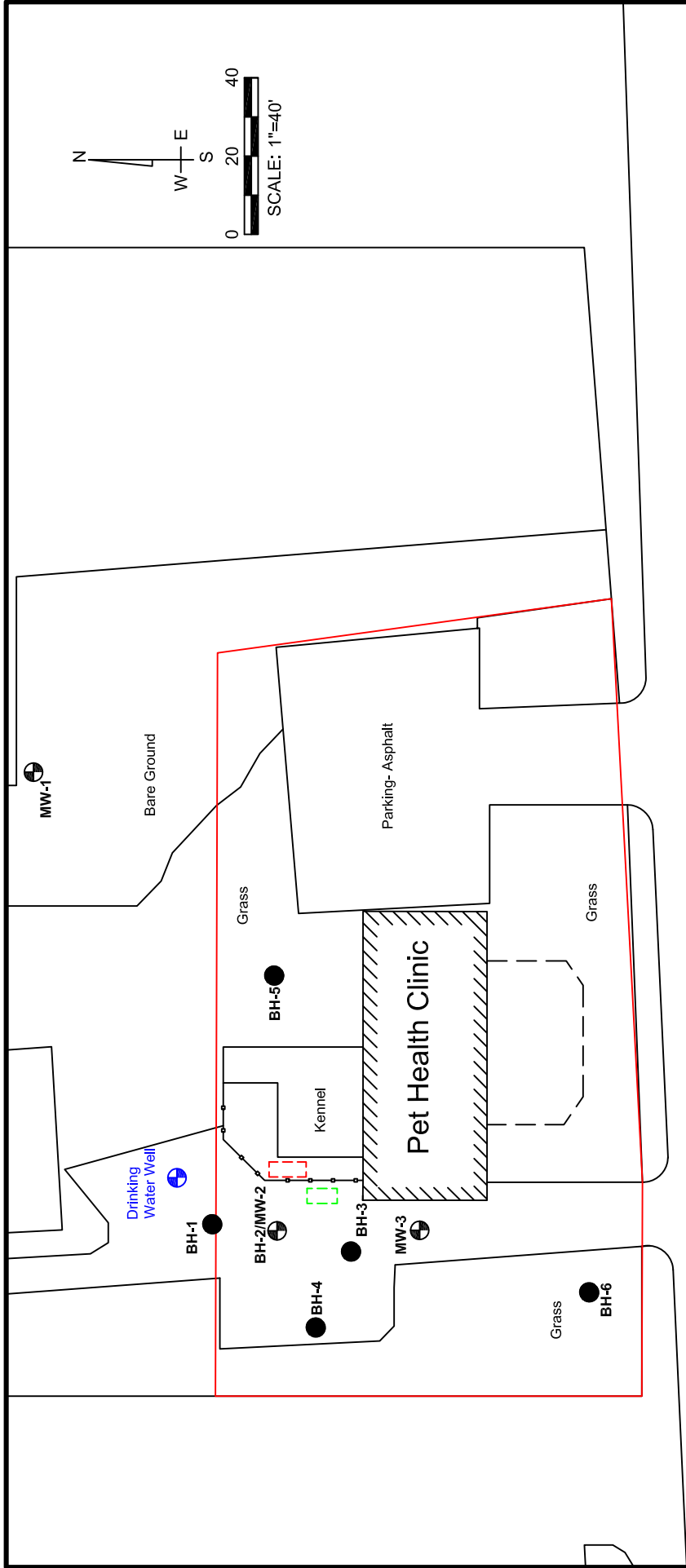


**Pet Health Clinic**  
2210 East Edison Avenue  
Sunnyside, Washington

Date: 11/02/11


**Figure 1. Site Location**

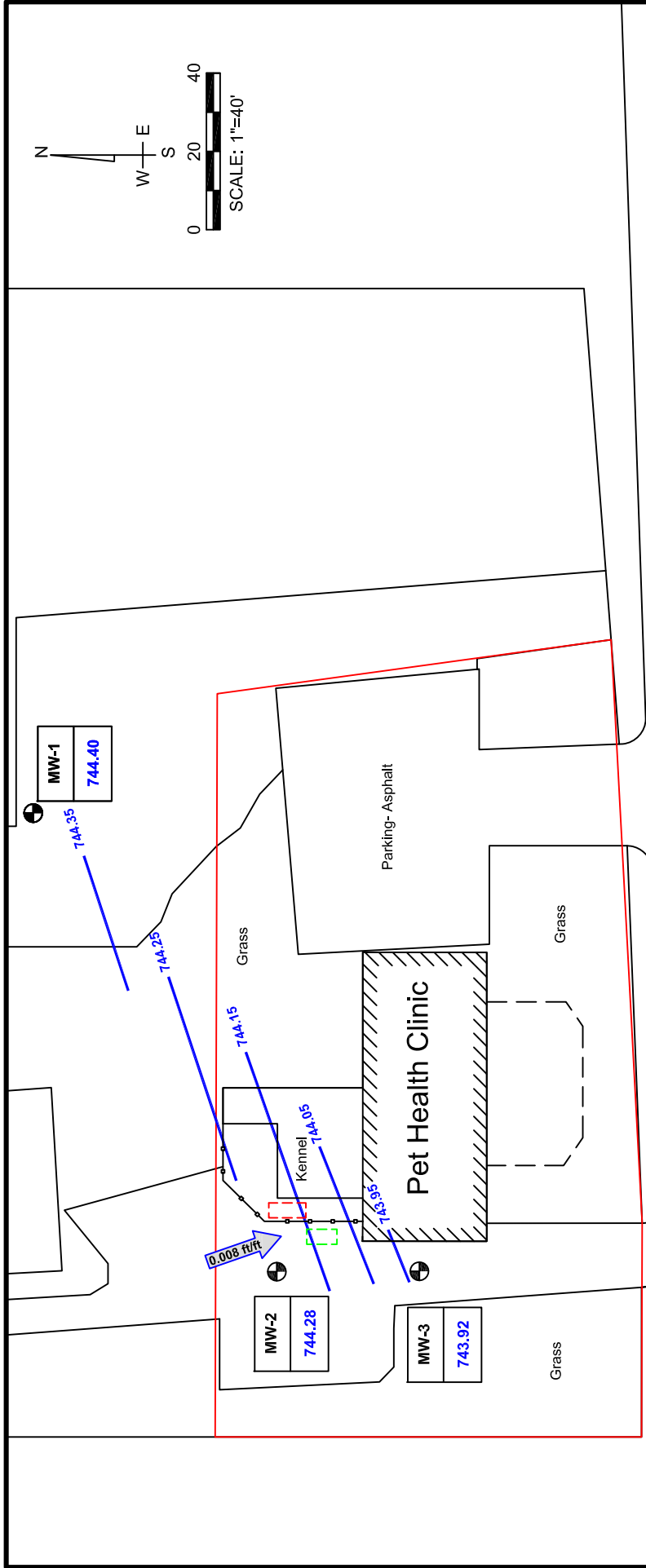




### LEGEND

- Approximate Property Boundary
- - - - - Pet Health Clinic Building Footprint
- + — + — Fence
- - - Approximate Drain Field Location for Septic Tank
- - - - - Former Gasoline UST Location
- - - - - Former Heating Oil UST Location
- Boring Location
- ⊕ Monitoring Well Location


 <b>TerraGraphics</b> Environmental Engineering, Inc.	DRAWN BY: M. PROCSAL PROJECT MANAGER: M. PROCSAL	PROJECT NO: 11071 DATE: 02/28/2012	PROJECT NAME: PET HEALTH CLINIC 2210 EAST EDISON AVENUE SUNNYSIDE, WA	FIGURE 2 SITE LAYOUT WITH SAMPLE LOCATIONS



### LEGEND

- Approximate Property Boundary
- //// Pet Health Clinic Building Footprint
- - - Approximate Drain Field Location for Septic Tank
- Former Gasoline UST Location
- Former Heating Oil UST Location
- Monitoring Well Location
- Groundwater Elevation (famsl)
- Groundwater Isocontour (famsl)
- Approximate Groundwater Flow Direction and Gradient

E EDISON AVENUE

 <b>TerraGraphics</b> Environmental Engineering, Inc.	DRAWN BY:	M. PROCSAL	PROJECT NO:	11071	PROJECT NAME:	PET HEALTH CLINIC 2210 EAST EDISON AVENUE SUNNYSIDE, WA	FIGURE 3	GOUNDWATER CONTOURS
	PROJECT MANAGER:	M. PROCSAL	DATE:	02/28/2012				

**Table 1**  
**Soil Analytical Results (mg/kg)**  
**Pet Health Clinic**  
**Sunnyside, Washington**

Sample ID/Sample Date												
Sample Depth (feet bgs)												
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	Lead	EDC	EDB	MTBE	GRO	DRO	Motor Oil
BH-1 8' 12/8/2011	<0.0092	<0.023	<0.023	<0.046	<0.023	6.5	<0.023	<0.023	<0.023	8.1 J,^	15 J,B	<12
BH-2 5' 12/9/2011	1.0	1.7	2.4	13.8	0.8	11	<0.025	<0.025	<0.025	130	13 J	22 J,B
BH-3 6' 12/8/2011	4.9	60	28	164	6.4	9.4	<0.025	<0.025	<0.025	2,200	2,200 Y,B	16 J
BH-4 11' 12/9/2011	0.06	0.43	0.14	0.63	<0.036	9.3	<0.036	<0.036	<0.036	8.3 J	<7.5	18 J,B
BH-5 6' 12/9/2011	0.067	0.39	0.073 J	0.33	<0.035	8.6	0.037 J	<0.035	<0.035	7.1 J,^	<8.1	17 J,B
BH-6 5' 12/9/2011	0.023 J	0.13	0.034 J	0.12	<0.023	5.6	<0.023	0.024 J	<0.023	3.9 J,^	<6.8	19 J,B
MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses(mg/kg)												
	0.03	7	6	9	5	250	-	0.005	0.1	100 or 30***	2000	2,000 or 4,000**

**Notes:**

all concentrations reported in mg/kg = milligrams per kilogram  
GRO = Gasoline Range Organics analyzed by Method NWTPH-Gx  
DRO = Diesel Range Organics analyzed by Method NWTPH-Dx  
MTBE = methyl tert-butyl ether  
EDC = 1,2-dichloroethane  
EDB = ethylene dibromide  
< = less than the method detection limit  
bgs = below ground surface

Concentrations in **BOLD** are above the Screening Levels as defined by Washington's Model Toxics Control Act (MTCA) (WAC 173-340)

Method A unrestricted cleanup levels (Table 740-1, WAC 173-340-900)

\* = gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture then cleanup level is 100 mg/kg,

all other gasoline mixtures then cleanup level is 30 mg/kg.

\*\* = heavy oil cleanup level is 2,000 mg/kg, mineral oil cleanup level is 4,000 mg/kg.

m+p-Xylene and o-Xylene results were added to represent Total Xylene concentration and compared to Total Xylene Cleanup Level.

J = reported result was flagged "J" because the result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B = reported result was flagged "B" because the compound was found in the blank and sample.

Y = reported result was flagged "Y" because the result is due primarily to a mixture of jet fuel/gasoline range product and weathered diesel fuel.

<sup>^</sup> = reported result was flagged "<sup>^</sup>" because instrument standards related QC exceeds the control limits.

**Table 2**  
**Groundwater Analytical Results (µg/L)**  
**Pet Health Clinic**  
**Sunnyside, Washington**

Sample ID/Sample Date	Groundwater Elevation (fmsl)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	Lead	EDC	EDB	MTBE	GRO	DRO	Motor Oil
H-MW-1													
12/15/2011	744.4	<0.15	<0.15	<0.15	<0.45	<0.15	3.1 J	<0.15	<0.002	<0.15	14 J, B	<72	82 J
duplicate 12/15/2011	744.4	<0.15	<0.15	<0.15	<0.45	<0.15	4.2 J	<0.15	<0.002	<0.15	<10	<70	140 J
H-MW-2													
12/15/2011	744.28	120	94	340	1,360	90	4.6 J	<0.15	<0.002	<0.15	7,800 B	2100 Y	470 Y
H-MW-3													
12/15/2011	743.92	1,700	150	360	1,740	120	5.6 J	130	<0.002	<0.15	11,000 B	21,000 Y	3,000 Y
<b>MTCA Method A</b>													
<b>Groundwater Cleanup Levels (µg/L)</b>													
		5	1,000	700	1,000	160	15	5	0.01	20	800 or 1,000*	500	500

**Notes:**

fmsl = feet above mean sea level

all concentrations reported in µg/L = micrograms per Liter

GRO = Gasoline Range Organics analyzed by Method NWTPH-Gx

DRO = Diesel Range Organics analyzed by Method NWTPH-Dx

MTBE = methyl tert-butyl ether

EDC = 1,2-dichloroethane

EDB = ethylene dibromide

< = less than the method detection limit

Concentrations in **BOLD** are above the Screening Levels as defined by Washington's Model Toxics Control Act (MTCA) (WAC 173-340)

Method A cleanup levels (Table 720-1, WAC 173-340-900)

- = no value established

m+p-Xylene and o-Xylene results were added to represent Total Xylene concentration and compared to Total Xylene Cleanup Level.

\* = cleanup level when benzene is present is 800 µg/L, and 1,000 µg/L when there is no detectable benzene present.

J = reported result was flagged "J" because the result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B = reported result was flagged "B" because the compound was found in the blank and sample.

Y = reported result was flagged "Y" because the result is due primarily to a mixture of jet fuel/gasoline range product, weathered diesel fuel, and a mineral/transformer oil range product.

**Table 3**  
**Water Quality Parameters**  
**Pet Health Clinic**  
**Sunnyside, Washington**

Well ID	Purge Volume (gallons)	Time	pH	Electrical Conductivity (mS)	Temperature (degrees C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)
MW-1									
	0.0	0838	9.56	1.620	10.9	6.06	54.1 J	-112.2 J	-
	1.5	0853	8.23	1.686	11.4	9.00	81.7 J	-88.0 J	-
	2.0	0900	8.20	1.674	11.9	6.98	64.2 J	-83.1 J	-
	3.0	0918	8.20	1.681	11.1	9.03	81.0 J	-82.5 J	43.22
MW-2									
	0.0	1045	7.42	2.517	12.6	8.65	80.8 J	-38.9 J	-
	1.0	1053	7.46	2.485	13.5	7.03	68.6 J	-39.2 J	-
	2.0	1059	7.71	2.383	12.4	8.17	77.1 J	-53.9 J	-
	2.5	1106	7.58	2.300	13.7	6.62	64.4 J	-47.0 J	-
	3.0	1115	7.63	2.319	13.3	6.68	64.9 J	-48.6 J	21.06
MW-3									
	0.0	1200	7.26	2.662	14.0	5.31	52.6 J	-29.2 J	-
	1.0	1208	7.26	2.661	14.0	5.02	57.3 J	-27.8 J	-
	2.0	1214	7.53	2.641	12.7	8.50	80.9 J	-43.1 J	-
	2.5	1220	7.43	2.648	13.5	8.08	78.2 J	-36.5 J	-
	3.0	1225	7.28	2.618	13.5	7.93	77.2 J	-31.4 J	33.20

Notes:

mS = milli siemens

C = celcius

mg/L = milligrams per Liter

ORP = oxidation reduction potential

mV = millivolts

J = reported result was flagged "J" because it is an estimate.

NTU = Nephelometric Turbidity Units

- = no value established

---

## **Appendix A**

### **Photographs**

Photo 1: BH-3 macro-cores. 10'-15' bgs core nearest followed by 5'-10' and 0'-5'. Note staining and sheen at approximately 6' bgs.



Photo 2: Pet Health Clinic site facing north.



Photo 3: Pet Health Clinic site facing east. The two cones mark the location of MW-2.



Photo 4: East side of the Pet Health Clinic site facing north.



---

## **Appendix B**

### **Analytical Reports with Chain-of-Custody**



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-30299-1

Client Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA  
Revision: 1

For:

TerraGraphics Inc  
dba TerraGraphics Environmental Eng Inc  
121 South Jackson  
Moscow, Idaho 83843

Attn: Mike Procsal



Authorized for release by:  
1/20/2012 1:48:47 PM

Pam Johnson  
Project Manager I  
[pamr.johnson@testamericainc.com](mailto:pamr.johnson@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Case Narrative

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Job ID: 580-30299-1**

**Laboratory: TestAmerica Seattle**

### Narrative

#### Receipt

Only a 5 gram sample was collected for all methanol preserved volatile samples.

All samples were received in good condition within temperature requirements.

#### GC/MS VOA - Method 8260B

Due to possible carryover from previous samples in the initial analysis the following samples BH-4 11' (580-30299-4), BH-5 6' (580-30299-5) were re-analyzed.

#### GC/MS VOA - Method NWTPH-Gx

The surrogate 4-Bromofluorobenzene recovery for the following sample BH-3 6' (580-30299-3) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

#### GC/MS VOA - Method NWTPH-VPH

Several ranges were detected in method blank MB 580-102324/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered as estimates, and have been flagged "J". The associated sample results have been flagged "B".

No other analytical or quality issues were noted.

#### GC Semi VOA - Method NWTPH-Dx

The results in the #2 Diesel (C10-C24) range for sample BH-3 6' (580-30299-3) are due primarily to a mixture of a jet fuel/gasoline range product and weathered diesel fuel. The affected analyte range is qualified "Y" and has been reported.

#2 Diesel (C10-C24) was detected in method blank MB 580-102334/1-A at a level that was above the method detection limit but below the reporting limit. The values should be considered as estimates, and have been flagged "J". The associated sample results have been flagged "B".

(>C24-C36) motor oil was detected in method blank MB 580-102430/1-A at a level that was above the method detection limit but below the reporting limit. The values should be considered as estimates, and have been flagged "J". The associated sample results have been flagged "B".

No other analytical or quality issues were noted.

#### GC Semi VOA - Method NWTPH-EPH

Aromatic (C21-C34) and aliphatic (C21-C34) were detected in method blank MB 580-102343/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered as estimates, and have been flagged "J". The associated sample results have been flagged "B".

No other analytical or quality issues were noted.

#### Metals

No analytical or quality issues were noted.

#### General Chemistry

No analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.

## Definitions/Glossary

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### GC VOA

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
I	Indicates the presence of an interference, recovery is not calculated.
X	Surrogate is outside control limits

#### GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Y	The chromatographic response resembles a typical fuel pattern.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-1 8'**

**Date Collected: 12/08/11 15:28**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-1**

**Matrix: Solid**

**Percent Solids: 73.5**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		37	9.2	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
Toluene	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
Ethylbenzene	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
m-Xylene & p-Xylene	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
o-Xylene	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
Naphthalene	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
Methyl tert-butyl ether	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
EDC	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1
EDB	ND		92	23	ug/Kg	☼	12/18/11 12:28	12/18/11 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 120	12/18/11 12:28	12/18/11 18:56	1
Ethylbenzene-d10	94		70 - 120	12/18/11 12:28	12/18/11 18:56	1
Fluorobenzene (Surr)	102		80 - 120	12/18/11 12:28	12/18/11 18:56	1
Toluene-d8 (Surr)	99		80 - 120	12/18/11 12:28	12/18/11 18:56	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	8.1	J ^	9.2	1.2	mg/Kg	☼	12/20/11 15:16	12/21/11 01:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		50 - 150	12/20/11 15:16	12/21/11 01:15	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	15	J B	32	7.4	mg/Kg	☼	12/19/11 13:12	12/27/11 16:55	1
Motor Oil (>C24-C36)	ND		65	12	mg/Kg	☼	12/19/11 13:12	12/27/11 16:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	115		50 - 150	12/19/11 13:12	12/27/11 16:55	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	6.5		1.9	0.19	mg/Kg	☼	12/21/11 13:48	12/22/11 02:08	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	74		0.10		%			12/20/11 16:24	1
Percent Moisture	26		0.10		%			12/20/11 16:24	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-2 5'**

**Date Collected: 12/09/11 10:31**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-2**

**Matrix: Solid**

**Percent Solids: 74.9**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1000		40	10	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
Toluene	1700		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
Ethylbenzene	2400		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
m-Xylene & p-Xylene	9300		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
o-Xylene	4500		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
Naphthalene	800		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
Methyl tert-butyl ether	ND		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
EDC	ND		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1
EDB	ND		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 120	12/18/11 12:28	12/18/11 19:20	1
Ethylbenzene-d10	98		70 - 120	12/18/11 12:28	12/18/11 19:20	1
Fluorobenzene (Surr)	99		80 - 120	12/18/11 12:28	12/18/11 19:20	1
Toluene-d8 (Surr)	103		80 - 120	12/18/11 12:28	12/18/11 19:20	1

## Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	6.9		5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
C10-C12 Aromatics	7.6		5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
C12-C13 Aromatics	3.1	J B	5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
C8-C10 Aliphatics	15		5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
C8-C10 Aromatics	26	B	5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
C5-C6 Aliphatics	4.1	J B	5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
C6-C8 Aliphatics	21	B	5.0	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1
Total VPH	86	B	35	0.25	mg/Kg	☼	12/19/11 13:25	12/19/11 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	86		60 - 140	12/19/11 13:25	12/19/11 19:51	1
4-Bromofluorobenzene	110		60 - 140	12/19/11 13:25	12/19/11 19:51	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	130		10	1.3	mg/Kg	☼	12/20/11 15:17	12/21/11 01:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		50 - 150	12/20/11 15:17	12/21/11 01:37	1

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	28		6.6	0.12	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C12-C16 Aliphatics	11		6.6	1.3	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C16-C21 Aliphatics	3.7	J	6.6	1.3	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C21-C34 Aliphatics	4.0	J B	6.6	1.3	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C10-C12 Aromatics	58		6.6	0.095	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C12-C16 Aromatics	22		6.6	1.3	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C16-C21 Aromatics	4.4	J	6.6	1.3	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1
C21-C34 Aromatics	3.9	J B	6.6	1.3	mg/Kg	☼	12/19/11 14:15	12/22/11 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	89		60 - 140	12/19/11 14:15	12/22/11 16:51	1
1-Chlorooctadecane	80		60 - 140	12/19/11 14:15	12/22/11 16:51	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-2 5'**

**Date Collected: 12/09/11 10:31**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-2**

**Matrix: Solid**

**Percent Solids: 74.9**

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	13	J	33	7.5	mg/Kg	☼	12/20/11 15:24	12/22/11 13:50	1
Motor Oil (>C24-C36)	22	J B	66	12	mg/Kg	☼	12/20/11 15:24	12/22/11 13:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	106		50 - 150				12/20/11 15:24	12/22/11 13:50	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	11		1.7	0.17	mg/Kg	☼	12/21/11 13:48	12/22/11 02:13	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75		0.10		%	—		12/20/11 16:24	1
Percent Moisture	25		0.10		%			12/20/11 16:24	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-3 6'**  
**Date Collected: 12/08/11 15:48**  
**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-3**  
**Matrix: Solid**  
**Percent Solids: 72.2**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4900		40	10	ug/Kg	☼	12/18/11 12:28	12/18/11 19:44	1
Naphthalene	6400		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:44	1
Methyl tert-butyl ether	ND		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:44	1
EDC	ND		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:44	1
EDB	ND		100	25	ug/Kg	☼	12/18/11 12:28	12/18/11 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 120	12/18/11 12:28	12/18/11 19:44	1
Ethylbenzene-d10	101		70 - 120	12/18/11 12:28	12/18/11 19:44	1
Fluorobenzene (Surr)	104		80 - 120	12/18/11 12:28	12/18/11 19:44	1
Toluene-d8 (Surr)	104		80 - 120	12/18/11 12:28	12/18/11 19:44	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	60000		2000	500	ug/Kg	☼	12/18/11 12:28	12/22/11 16:09	20
Ethylbenzene	28000		2000	500	ug/Kg	☼	12/18/11 12:28	12/22/11 16:09	20
m-Xylene & p-Xylene	120000		2000	500	ug/Kg	☼	12/18/11 12:28	12/22/11 16:09	20
o-Xylene	44000		2000	500	ug/Kg	☼	12/18/11 12:28	12/22/11 16:09	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 120	12/18/11 12:28	12/22/11 16:09	20
Ethylbenzene-d10	105		70 - 120	12/18/11 12:28	12/22/11 16:09	20
Fluorobenzene (Surr)	99		80 - 120	12/18/11 12:28	12/22/11 16:09	20
Toluene-d8 (Surr)	102		80 - 120	12/18/11 12:28	12/22/11 16:09	20

## Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	140		50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
C10-C12 Aromatics	120		50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
C12-C13 Aromatics	73	B	50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
C8-C10 Aliphatics	250		50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
C8-C10 Aromatics	340	B	50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
C5-C6 Aliphatics	170	B	50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
C6-C8 Aliphatics	510	B	50	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10
Total VPH	1700	B	350	2.5	mg/Kg	☼	12/19/11 13:25	12/19/11 20:44	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	86		60 - 140	12/19/11 13:25	12/19/11 20:44	10
4-Bromofluorobenzene	118		60 - 140	12/19/11 13:25	12/19/11 20:44	10

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2200		10	1.3	mg/Kg	☼	12/20/11 15:17	12/21/11 02:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	43	I X	50 - 150	12/20/11 15:17	12/21/11 02:00	1

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	180		6.9	0.13	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
C12-C16 Aliphatics	660		6.9	1.4	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
C16-C21 Aliphatics	360		6.9	1.4	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1



# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-3 6'**

**Date Collected: 12/08/11 15:48**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-3**

**Matrix: Solid**

**Percent Solids: 72.2**

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aliphatics	15	B	6.9	1.4	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
C10-C12 Aromatics	97		6.9	0.099	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
C12-C16 Aromatics	140		6.9	1.4	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
C16-C21 Aromatics	200		6.9	1.4	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
C21-C34 Aromatics	13	B	6.9	1.4	mg/Kg	☼	12/19/11 14:15	12/22/11 17:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		60 - 140				12/19/11 14:15	12/22/11 17:19	1
1-Chlorooctadecane	83		60 - 140				12/19/11 14:15	12/22/11 17:19	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2200	Y B	34	7.7	mg/Kg	☼	12/19/11 13:12	12/27/11 17:17	1
Motor Oil (>C24-C36)	16	J	67	12	mg/Kg	☼	12/19/11 13:12	12/27/11 17:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	125		50 - 150				12/19/11 13:12	12/27/11 17:17	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	9.4		1.9	0.19	mg/Kg	☼	12/21/11 13:48	12/22/11 02:19	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	72		0.10		%			12/20/11 16:24	1
Percent Moisture	28		0.10		%			12/20/11 16:24	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-4 11'**

**Date Collected: 12/09/11 08:50**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-4**

**Matrix: Solid**

**Percent Solids: 70.7**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		140	36	ug/Kg	☼	12/18/11 12:28	12/18/11 20:09	1
EDC	ND		140	36	ug/Kg	☼	12/18/11 12:28	12/18/11 20:09	1
EDB	ND		140	36	ug/Kg	☼	12/18/11 12:28	12/18/11 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 120	12/18/11 12:28	12/18/11 20:09	1
Ethylbenzene-d10	98		70 - 120	12/18/11 12:28	12/18/11 20:09	1
Fluorobenzene (Surr)	97		80 - 120	12/18/11 12:28	12/18/11 20:09	1
Toluene-d8 (Surr)	97		80 - 120	12/18/11 12:28	12/18/11 20:09	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	60		57	14	ug/Kg	☼	12/18/11 12:28	12/22/11 15:45	1
Toluene	430		140	36	ug/Kg	☼	12/18/11 12:28	12/22/11 15:45	1
Ethylbenzene	140		140	36	ug/Kg	☼	12/18/11 12:28	12/22/11 15:45	1
m-Xylene & p-Xylene	450		140	36	ug/Kg	☼	12/18/11 12:28	12/22/11 15:45	1
o-Xylene	180		140	36	ug/Kg	☼	12/18/11 12:28	12/22/11 15:45	1
Naphthalene	ND		140	36	ug/Kg	☼	12/18/11 12:28	12/22/11 15:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 120	12/18/11 12:28	12/22/11 15:45	1
Ethylbenzene-d10	96		70 - 120	12/18/11 12:28	12/22/11 15:45	1
Fluorobenzene (Surr)	99		80 - 120	12/18/11 12:28	12/22/11 15:45	1
Toluene-d8 (Surr)	101		80 - 120	12/18/11 12:28	12/22/11 15:45	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	8.3	J	14	1.8	mg/Kg	☼	12/20/11 15:17	12/22/11 05:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150	12/20/11 15:17	12/22/11 05:46	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		33	7.5	mg/Kg	☼	12/20/11 15:24	12/22/11 14:40	1
Motor Oil (>C24-C36)	18	J B	66	12	mg/Kg	☼	12/20/11 15:24	12/22/11 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	105		50 - 150	12/20/11 15:24	12/22/11 14:40	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	9.3		1.9	0.19	mg/Kg	☼	12/21/11 13:48	12/22/11 02:24	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	71		0.10		%			12/20/11 16:24	1
Percent Moisture	29		0.10		%			12/20/11 16:24	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-5 6'**

**Date Collected: 12/09/11 09:25**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-5**

**Matrix: Solid**

**Percent Solids: 70.0**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	67		56	14	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
Toluene	390		140	35	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
Ethylbenzene	73	J	140	35	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
o-Xylene	150		140	35	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
Methyl tert-butyl ether	ND		140	35	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
EDC	37	J	140	35	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
EDB	ND		140	35	ug/Kg	☼	12/18/11 11:58	12/19/11 01:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 120				12/18/11 11:58	12/19/11 01:08	1
Ethylbenzene-d10	103		70 - 120				12/18/11 11:58	12/19/11 01:08	1
Fluorobenzene (Surr)	101		80 - 120				12/18/11 11:58	12/19/11 01:08	1
Toluene-d8 (Surr)	99		80 - 120				12/18/11 11:58	12/19/11 01:08	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	180		140	35	ug/Kg	☼	12/18/11 11:58	12/20/11 23:44	1
Naphthalene	ND		140	35	ug/Kg	☼	12/18/11 11:58	12/20/11 23:44	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	7.1	J ^	14	1.7	mg/Kg	☼	12/20/11 15:17	12/21/11 03:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150				12/20/11 15:17	12/21/11 03:29	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		36	8.1	mg/Kg	☼	12/20/11 15:24	12/22/11 15:05	1
Motor Oil (>C24-C36)	17	J B	71	13	mg/Kg	☼	12/20/11 15:24	12/22/11 15:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	106		50 - 150				12/20/11 15:24	12/22/11 15:05	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	8.6		2.0	0.20	mg/Kg	☼	12/21/11 13:48	12/22/11 02:29	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	70		0.10		%			12/20/11 16:24	1
Percent Moisture	30		0.10		%			12/20/11 16:24	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-6 5'**

**Date Collected: 12/09/11 12:27**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-6**

**Matrix: Solid**

**Percent Solids: 79.1**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	23	J	36	9.1	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
Toluene	130		91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
Ethylbenzene	34	J	91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
m-Xylene & p-Xylene	120		91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
o-Xylene	ND		91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
Naphthalene	ND		91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
Methyl tert-butyl ether	ND		91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
EDC	ND		91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1
EDB	24	J	91	23	ug/Kg	☼	12/18/11 11:58	12/19/11 01:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 120	12/18/11 11:58	12/19/11 01:33	1
Ethylbenzene-d10	100		70 - 120	12/18/11 11:58	12/19/11 01:33	1
Fluorobenzene (Surr)	100		80 - 120	12/18/11 11:58	12/19/11 01:33	1
Toluene-d8 (Surr)	102		80 - 120	12/18/11 11:58	12/19/11 01:33	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3.9	J ^	9.1	1.1	mg/Kg	☼	12/20/11 15:17	12/21/11 03:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150	12/20/11 15:17	12/21/11 03:52	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		30	6.8	mg/Kg	☼	12/20/11 15:24	12/22/11 15:29	1
Motor Oil (>C24-C36)	19	J B	60	11	mg/Kg	☼	12/20/11 15:24	12/22/11 15:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	107		50 - 150	12/20/11 15:24	12/22/11 15:29	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.6		1.8	0.18	mg/Kg	☼	12/21/11 13:48	12/22/11 02:35	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79		0.10		%			12/20/11 16:24	1
Percent Moisture	21		0.10		%			12/20/11 16:24	1

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-102263/1-A

Matrix: Solid

Analysis Batch: 102260

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102263

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	4.0	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
Toluene	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
Ethylbenzene	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
m-Xylene & p-Xylene	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
o-Xylene	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
Naphthalene	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
Methyl tert-butyl ether	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
EDC	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1
EDB	ND		40	10	ug/Kg		12/18/11 11:58	12/18/11 16:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 120	12/18/11 11:58	12/18/11 16:19	1
Ethylbenzene-d10	100		70 - 120	12/18/11 11:58	12/18/11 16:19	1
Fluorobenzene (Surr)	98		80 - 120	12/18/11 11:58	12/18/11 16:19	1
Toluene-d8 (Surr)	99		80 - 120	12/18/11 11:58	12/18/11 16:19	1
Trifluorotoluene (Surr)	101		65 - 140	12/18/11 11:58	12/18/11 16:19	1

Lab Sample ID: MB 580-102263/1-A

Matrix: Solid

Analysis Batch: 102437

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102263

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	4.0	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
Toluene	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
Ethylbenzene	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
m-Xylene & p-Xylene	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
o-Xylene	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
Naphthalene	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
Methyl tert-butyl ether	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
EDC	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1
EDB	ND		40	10	ug/Kg		12/18/11 11:58	12/20/11 20:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 120	12/18/11 11:58	12/20/11 20:31	1
Ethylbenzene-d10	92		70 - 120	12/18/11 11:58	12/20/11 20:31	1
Fluorobenzene (Surr)	102		80 - 120	12/18/11 11:58	12/20/11 20:31	1
Toluene-d8 (Surr)	98		80 - 120	12/18/11 11:58	12/20/11 20:31	1
Trifluorotoluene (Surr)	93		65 - 140	12/18/11 11:58	12/20/11 20:31	1

Lab Sample ID: MB 580-102263/1-A

Matrix: Solid

Analysis Batch: 102602

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102263

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	4.0	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
Toluene	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
Ethylbenzene	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
m-Xylene & p-Xylene	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
o-Xylene	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-102263/1-A

Matrix: Solid

Analysis Batch: 102602

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102263

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
Methyl tert-butyl ether	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
EDC	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1
EDB	ND		40	10	ug/Kg		12/18/11 11:58	12/22/11 14:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 120	12/18/11 11:58	12/22/11 14:08	1
Ethylbenzene-d10	93		70 - 120	12/18/11 11:58	12/22/11 14:08	1
Fluorobenzene (Surr)	99		80 - 120	12/18/11 11:58	12/22/11 14:08	1
Toluene-d8 (Surr)	95		80 - 120	12/18/11 11:58	12/22/11 14:08	1
Trifluorotoluene (Surr)	89		65 - 140	12/18/11 11:58	12/22/11 14:08	1

Lab Sample ID: LCS 580-102263/2-A

Matrix: Solid

Analysis Batch: 102260

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102263

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	796	884		ug/Kg		111	75 - 125
Toluene	800	832		ug/Kg		104	70 - 125
Ethylbenzene	794	856		ug/Kg		108	75 - 125
m-Xylene & p-Xylene	1600	1730		ug/Kg		108	80 - 125
o-Xylene	792	840		ug/Kg		106	75 - 125
Naphthalene	800	812		ug/Kg		101	40 - 125
Methyl tert-butyl ether	800	840		ug/Kg		105	65 - 125
EDC	793	852		ug/Kg		107	70 - 135
EDB	800	868		ug/Kg		109	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 120
Ethylbenzene-d10	106		70 - 120
Fluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	103		80 - 120
Trifluorotoluene (Surr)	102		65 - 140

Lab Sample ID: 580-30299-6 MS

Matrix: Solid

Analysis Batch: 102260

Client Sample ID: BH-6 5'

Prep Type: Total/NA

Prep Batch: 102263

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	23	J	1810	1970		ug/Kg	☼	108	75 - 125
Toluene	130		1820	1950		ug/Kg	☼	100	70 - 125
Ethylbenzene	34	J	1800	1930		ug/Kg	☼	105	75 - 125
m-Xylene & p-Xylene	120		3630	3800		ug/Kg	☼	101	80 - 125
o-Xylene	ND		1800	1880		ug/Kg	☼	105	75 - 125
Naphthalene	ND		1820	1890		ug/Kg	☼	104	40 - 125
Methyl tert-butyl ether	ND		1820	1880		ug/Kg	☼	103	59 - 137
EDC	ND		1800	1890		ug/Kg	☼	105	70 - 135
EDB	24	J	1820	1900		ug/Kg	☼	103	70 - 125

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-30299-6 MS

Matrix: Solid

Analysis Batch: 102260

Client Sample ID: BH-6 5'

Prep Type: Total/NA

Prep Batch: 102263

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 120
Ethylbenzene-d10	98		70 - 120
Fluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	104		80 - 120

Lab Sample ID: 580-30299-6 MSD

Matrix: Solid

Analysis Batch: 102260

Client Sample ID: BH-6 5'

Prep Type: Total/NA

Prep Batch: 102263

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	23	J	1810	1970		ug/Kg	☼	107	75 - 125	0	30
Toluene	130		1820	1970		ug/Kg	☼	102	70 - 125	1	30
Ethylbenzene	34	J	1800	1930		ug/Kg	☼	105	75 - 125	0	30
m-Xylene & p-Xylene	120		3630	3850		ug/Kg	☼	103	80 - 125	1	30
o-Xylene	ND		1800	1990		ug/Kg	☼	111	75 - 125	6	30
Naphthalene	ND		1820	2030		ug/Kg	☼	112	40 - 125	7	30
Methyl tert-butyl ether	ND		1820	1880		ug/Kg	☼	103	59 - 137	0	30
EDC	ND		1800	1860		ug/Kg	☼	103	70 - 135	2	30
EDB	24	J	1820	1940		ug/Kg	☼	105	70 - 125	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 120
Ethylbenzene-d10	101		70 - 120
Fluorobenzene (Surr)	100		80 - 120
Toluene-d8 (Surr)	104		80 - 120

Lab Sample ID: MB 580-102264/1-A

Matrix: Solid

Analysis Batch: 102261

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102264

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		16	4.0	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
Toluene	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
Ethylbenzene	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
m-Xylene & p-Xylene	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
o-Xylene	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
Naphthalene	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
Methyl tert-butyl ether	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
EDC	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1
EDB	ND		40	10	ug/Kg		12/18/11 12:28	12/18/11 16:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 120	12/18/11 12:28	12/18/11 16:32	1
Ethylbenzene-d10	89		70 - 120	12/18/11 12:28	12/18/11 16:32	1
Fluorobenzene (Surr)	98		80 - 120	12/18/11 12:28	12/18/11 16:32	1
Toluene-d8 (Surr)	95		80 - 120	12/18/11 12:28	12/18/11 16:32	1
Trifluorotoluene (Surr)	96		65 - 140	12/18/11 12:28	12/18/11 16:32	1

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-102264/2-A

Matrix: Solid

Analysis Batch: 102261

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102264

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	796	792		ug/Kg		99	75 - 125
Toluene	800	760		ug/Kg		95	70 - 125
Ethylbenzene	794	752		ug/Kg		95	75 - 125
m-Xylene & p-Xylene	1600	1500		ug/Kg		94	80 - 125
o-Xylene	792	736		ug/Kg		93	75 - 125
Naphthalene	800	772		ug/Kg		96	40 - 125
Methyl tert-butyl ether	800	748		ug/Kg		94	65 - 125
EDC	793	772		ug/Kg		97	70 - 135
EDB	800	764		ug/Kg		96	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 120
Ethylbenzene-d10	101		70 - 120
Fluorobenzene (Surr)	100		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Trifluorotoluene (Surr)	90		65 - 140

## Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-102324/1-A

Matrix: Solid

Analysis Batch: 102325

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
C10-C12 Aromatics	ND		2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
C12-C13 Aromatics	0.242	J	2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
C8-C10 Aliphatics	ND		2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
C8-C10 Aromatics	0.122	J	2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
C5-C6 Aliphatics	0.380	J	2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
C6-C8 Aliphatics	0.258	J	2.0	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1
Total VPH	1.12	J	14	0.10	mg/Kg		12/19/11 11:00	12/19/11 13:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	106		60 - 140	12/19/11 11:00	12/19/11 13:13	1
4-Bromofluorobenzene	104		60 - 140	12/19/11 11:00	12/19/11 13:13	1

Lab Sample ID: LCS 580-102324/2-A

Matrix: Solid

Analysis Batch: 102325

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
C10-C12 Aliphatics	4.00	4.95		mg/Kg		124	70 - 130
C10-C12 Aromatics	4.00	4.11		mg/Kg		103	70 - 130
C12-C13 Aromatics	8.00	7.85		mg/Kg		98	70 - 130
C8-C10 Aliphatics	8.00	8.38		mg/Kg		105	70 - 130
C8-C10 Aromatics	16.0	16.8		mg/Kg		105	70 - 130
C5-C6 Aliphatics	8.00	8.62		mg/Kg		108	70 - 130
C6-C8 Aliphatics	4.00	4.03		mg/Kg		101	70 - 130



# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 580-102324/2-A

Matrix: Solid

Analysis Batch: 102325

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total VPH	64.0	67.1		mg/Kg		105	70 - 130
Surrogate	%Recovery	LCS Qualifier	Limits				
BFB - PID	102		60 - 140				
4-Bromofluorobenzene	101		60 - 140				

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-102429/1-A

Matrix: Solid

Analysis Batch: 102440

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	0.50	mg/Kg		12/20/11 15:14	12/20/11 19:15	1
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	102		50 - 150	12/20/11 15:14	12/20/11 19:15	1			
Trifluorotoluene (Surr)	101		50 - 150	12/20/11 15:14	12/20/11 19:15	1			

Lab Sample ID: MB 580-102429/1-A

Matrix: Solid

Analysis Batch: 102544

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	0.50	mg/Kg		12/20/11 15:14	12/22/11 05:24	1
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	102		50 - 150	12/20/11 15:14	12/22/11 05:24	1			
Trifluorotoluene (Surr)	99		50 - 150	12/20/11 15:14	12/22/11 05:24	1			

Lab Sample ID: LCS 580-102429/2-A

Matrix: Solid

Analysis Batch: 102440

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	34.1		mg/Kg		85	68 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	104		50 - 150				
Trifluorotoluene (Surr)	98		50 - 150				

Lab Sample ID: LCSD 580-102429/3-A

Matrix: Solid

Analysis Batch: 102440

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 102429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline	40.0	35.3		mg/Kg		88	68 - 120	3	25

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-102429/3-A

Matrix: Solid

Analysis Batch: 102440

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 102429

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		50 - 150
Trifluorotoluene (Surr)	105		50 - 150

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-102343/1-B

Matrix: Solid

Analysis Batch: 102549

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102343

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C10-C12 Aliphatics	ND		5.0	0.095	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C12-C16 Aliphatics	ND		5.0	1.0	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C16-C21 Aliphatics	ND		5.0	1.0	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C21-C34 Aliphatics	2.25	J	5.0	1.0	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C10-C12 Aromatics	ND		5.0	0.072	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C12-C16 Aromatics	ND		5.0	1.0	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C16-C21 Aromatics	ND		5.0	1.0	mg/Kg		12/19/11 14:15	12/22/11 09:44	1
C21-C34 Aromatics	2.24	J	5.0	1.0	mg/Kg		12/19/11 14:15	12/22/11 09:44	1

	MB	MB					Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	95		60 - 140				12/19/11 14:15	12/22/11 09:44	1
1-Chlorooctadecane	72		60 - 140				12/19/11 14:15	12/22/11 09:44	1

Lab Sample ID: LCS 580-102343/2-B

Matrix: Solid

Analysis Batch: 102549

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102343

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				Limits
C10-C12 Aliphatics	6.67	5.59		mg/Kg		84	70 - 130
C12-C16 Aliphatics	13.3	13.7		mg/Kg		102	70 - 130
C16-C21 Aliphatics	20.0	23.3		mg/Kg		117	70 - 130
C21-C34 Aliphatics	40.0	47.1		mg/Kg		118	70 - 130
C10-C12 Aromatics	6.67	5.81		mg/Kg		87	70 - 130
C12-C16 Aromatics	20.0	19.5		mg/Kg		97	70 - 130
C16-C21 Aromatics	40.0	39.1		mg/Kg		98	70 - 130
C21-C34 Aromatics	53.3	65.6		mg/Kg		123	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	96		60 - 140
1-Chlorooctadecane	93		60 - 140

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-102334/1-A

Matrix: Solid

Analysis Batch: 102697

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102334

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	8.96	J	25	5.7	mg/Kg		12/19/11 13:11	12/27/11 12:37	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		12/19/11 13:11	12/27/11 12:37	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	118		50 - 150				12/19/11 13:11	12/27/11 12:37	1

Lab Sample ID: LCS 580-102334/2-A

Matrix: Solid

Analysis Batch: 102697

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	541		mg/Kg		108	70 - 125
Motor Oil (>C24-C36)	500	528		mg/Kg		106	64 - 127
Surrogate	%Recovery	LCS Qualifier	Limits				
o-Terphenyl	112		50 - 150				

Lab Sample ID: MB 580-102430/1-A

Matrix: Solid

Analysis Batch: 102564

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102430

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25	5.7	mg/Kg		12/20/11 15:24	12/22/11 10:54	1
Motor Oil (>C24-C36)	10.2	J	50	9.1	mg/Kg		12/20/11 15:24	12/22/11 10:54	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				12/20/11 15:24	12/22/11 10:54	1

Lab Sample ID: LCS 580-102430/2-A

Matrix: Solid

Analysis Batch: 102564

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102430

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	580		mg/Kg		116	70 - 125
Motor Oil (>C24-C36)	500	590		mg/Kg		118	64 - 127
Surrogate	%Recovery	LCS Qualifier	Limits				
o-Terphenyl	106		50 - 150				

Lab Sample ID: 580-30299-2 DU

Matrix: Solid

Analysis Batch: 102564

Client Sample ID: BH-2 5'

Prep Type: Total/NA

Prep Batch: 102430

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	13	J	17.9	J	mg/Kg	☼	31	35
Motor Oil (>C24-C36)	22	J B	20.9	J	mg/Kg	☼	4	35

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-30299-2 DU

Matrix: Solid

Analysis Batch: 102564

Client Sample ID: BH-2 5'

Prep Type: Total/NA

Prep Batch: 102430

Surrogate	%Recovery	DU Qualifier	DU Limits
<i>o</i> -Terphenyl	136		50 - 150

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 580-102514/18-A

Matrix: Solid

Analysis Batch: 102589

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102514

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.15	mg/Kg		12/21/11 13:48	12/22/11 00:20	1

Lab Sample ID: LCS 580-102514/19-A

Matrix: Solid

Analysis Batch: 102589

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102514

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	49.1		mg/Kg		98	80 - 120

Lab Sample ID: LCSD 580-102514/20-A

Matrix: Solid

Analysis Batch: 102589

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 102514

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	48.0		mg/Kg		96	80 - 120	2	20

# Lab Chronicle

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-1 8'**

**Date Collected: 12/08/11 15:28**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-1**

**Matrix: Solid**

**Percent Solids: 73.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			102264	12/18/11 12:28	SK	TAL SEA
Total/NA	Analysis	8260B		1	102261	12/18/11 18:56	SK	TAL SEA
Total/NA	Prep	5035			102429	12/20/11 15:16	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102440	12/21/11 01:15	JMB	TAL SEA
Total/NA	Prep	3550B			102334	12/19/11 13:12	RS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102697	12/27/11 16:55	KKW	TAL SEA
Total/NA	Prep	3050B			102514	12/21/11 13:48	ZF	TAL SEA
Total/NA	Analysis	6010B		1	102589	12/22/11 02:08	PAB	TAL SEA
Total/NA	Analysis	D 2216		1	102433	12/20/11 16:24	RS	TAL SEA

**Client Sample ID: BH-2 5'**

**Date Collected: 12/09/11 10:31**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-2**

**Matrix: Solid**

**Percent Solids: 74.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			102264	12/18/11 12:28	SK	TAL SEA
Total/NA	Analysis	8260B		1	102261	12/18/11 19:20	SK	TAL SEA
Total/NA	Prep	5035			102324	12/19/11 13:25	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VPH		1	102325	12/19/11 19:51	MAT	TAL SEA
Total/NA	Prep	5035			102429	12/20/11 15:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102440	12/21/11 01:37	JMB	TAL SEA
Total/NA	Prep	3550B			102343	12/19/11 14:15	GH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	102549	12/22/11 16:51	EK	TAL SEA
Total/NA	Prep	3550B			102430	12/20/11 15:24	RS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102564	12/22/11 13:50	KKW	TAL SEA
Total/NA	Prep	3050B			102514	12/21/11 13:48	ZF	TAL SEA
Total/NA	Analysis	6010B		1	102589	12/22/11 02:13	PAB	TAL SEA
Total/NA	Analysis	D 2216		1	102433	12/20/11 16:24	RS	TAL SEA

**Client Sample ID: BH-3 6'**

**Date Collected: 12/08/11 15:48**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-3**

**Matrix: Solid**

**Percent Solids: 72.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			102264	12/18/11 12:28	SK	TAL SEA
Total/NA	Analysis	8260B		1	102261	12/18/11 19:44	SK	TAL SEA
Total/NA	Prep	5035	DL		102264	12/18/11 12:28	SK	TAL SEA
Total/NA	Analysis	8260B	DL	20	102602	12/22/11 16:09	MAT	TAL SEA
Total/NA	Prep	5035	DL		102324	12/19/11 13:25	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VPH	DL	10	102325	12/19/11 20:44	MAT	TAL SEA
Total/NA	Prep	5035			102429	12/20/11 15:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102440	12/21/11 02:00	JMB	TAL SEA
Total/NA	Prep	3550B			102343	12/19/11 14:15	GH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	102549	12/22/11 17:19	EK	TAL SEA

# Lab Chronicle

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-3 6'**

**Date Collected: 12/08/11 15:48**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-3**

**Matrix: Solid**

**Percent Solids: 72.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			102334	12/19/11 13:12	RS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102697	12/27/11 17:17	KKW	TAL SEA
Total/NA	Prep	3050B			102514	12/21/11 13:48	ZF	TAL SEA
Total/NA	Analysis	6010B		1	102589	12/22/11 02:19	PAB	TAL SEA
Total/NA	Analysis	D 2216		1	102433	12/20/11 16:24	RS	TAL SEA

**Client Sample ID: BH-4 11'**

**Date Collected: 12/09/11 08:50**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-4**

**Matrix: Solid**

**Percent Solids: 70.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			102264	12/18/11 12:28	SK	TAL SEA
Total/NA	Analysis	8260B		1	102261	12/18/11 20:09	SK	TAL SEA
Total/NA	Prep	5035	RA		102264	12/18/11 12:28	SK	TAL SEA
Total/NA	Analysis	8260B	RA	1	102602	12/22/11 15:45	MAT	TAL SEA
Total/NA	Prep	5035			102429	12/20/11 15:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102544	12/22/11 05:46	JMB	TAL SEA
Total/NA	Prep	3550B			102430	12/20/11 15:24	RS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102564	12/22/11 14:40	KKW	TAL SEA
Total/NA	Prep	3050B			102514	12/21/11 13:48	ZF	TAL SEA
Total/NA	Analysis	6010B		1	102589	12/22/11 02:24	PAB	TAL SEA
Total/NA	Analysis	D 2216		1	102433	12/20/11 16:24	RS	TAL SEA

**Client Sample ID: BH-5 6'**

**Date Collected: 12/09/11 09:25**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-5**

**Matrix: Solid**

**Percent Solids: 70.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			102263	12/18/11 11:58	SK	TAL SEA
Total/NA	Analysis	8260B		1	102260	12/19/11 01:08	SK	TAL SEA
Total/NA	Prep	5035	RA		102263	12/18/11 11:58	SK	TAL SEA
Total/NA	Analysis	8260B	RA	1	102437	12/20/11 23:44	MAT	TAL SEA
Total/NA	Prep	5035			102429	12/20/11 15:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102440	12/21/11 03:29	JMB	TAL SEA
Total/NA	Prep	3550B			102430	12/20/11 15:24	RS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102564	12/22/11 15:05	KKW	TAL SEA
Total/NA	Prep	3050B			102514	12/21/11 13:48	ZF	TAL SEA
Total/NA	Analysis	6010B		1	102589	12/22/11 02:29	PAB	TAL SEA
Total/NA	Analysis	D 2216		1	102433	12/20/11 16:24	RS	TAL SEA

## Lab Chronicle

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

**Client Sample ID: BH-6 5'**

**Date Collected: 12/09/11 12:27**

**Date Received: 12/14/11 10:00**

**Lab Sample ID: 580-30299-6**

**Matrix: Solid**

**Percent Solids: 79.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			102263	12/18/11 11:58	SK	TAL SEA
Total/NA	Analysis	8260B		1	102260	12/19/11 01:33	SK	TAL SEA
Total/NA	Prep	5035			102429	12/20/11 15:17	JMB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102440	12/21/11 03:52	JMB	TAL SEA
Total/NA	Prep	3550B			102430	12/20/11 15:24	RS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102564	12/22/11 15:29	KKW	TAL SEA
Total/NA	Prep	3050B			102514	12/21/11 13:48	ZF	TAL SEA
Total/NA	Analysis	6010B		1	102589	12/22/11 02:35	PAB	TAL SEA
Total/NA	Analysis	D 2216		1	102433	12/20/11 16:24	RS	TAL SEA

### Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

## Certification Summary

Client: TerraGraphics Inc

TestAmerica Job ID: 580-30299-1

Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska	Alaska UST	10	UST-022
TestAmerica Seattle	Alaska	TA-Port Heiden Mobile Lab	10	UST-093
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP		L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana	MT DEQ UST	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	USDA		P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.



## Sample Summary

Client: TerraGraphics Inc  
Project/Site: PET HEALTH CLINIC, SUNNYSIDE, WA

TestAmerica Job ID: 580-30299-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-30299-1	BH-1 8'	Solid	12/08/11 15:28	12/14/11 10:00
580-30299-2	BH-2 5'	Solid	12/09/11 10:31	12/14/11 10:00
580-30299-3	BH-3 6'	Solid	12/08/11 15:48	12/14/11 10:00
580-30299-4	BH-4 11'	Solid	12/09/11 08:50	12/14/11 10:00
580-30299-5	BH-5 6'	Solid	12/09/11 09:25	12/14/11 10:00
580-30299-6	BH-6 5'	Solid	12/09/11 12:27	12/14/11 10:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

## Chain of Custody Record

Client Contact

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## Login Sample Receipt Checklist

Client: TerraGraphics Inc

Job Number: 580-30299-1

**Login Number: 30299**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Blankinship, Tom**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-30381-1

Client Project/Site: Pet Health Clinic  
Revision: 1

For:

TerraGraphics Inc  
dba TerraGraphics Environmental Eng Inc  
121 South Jackson  
Moscow, Idaho 83843

Attn: Mike Procsal



Authorized for release by:  
1/12/2012 4:05:34 PM

Pam Johnson  
Project Manager I  
[pamr.johnson@testamericainc.com](mailto:pamr.johnson@testamericainc.com)

### LINKS

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results through

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[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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## Case Narrative

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Job ID: 580-30381-1**

**Laboratory: TestAmerica Seattle**

### Narrative

#### Receipt

The following sample H-MW-3 (580-30381-4) vial I were received with headspace.

All other samples were received in good condition within temperature requirements.

#### GC/MS VOA - Method 8260B

No analytical or quality issues were noted.

#### GC/MS VOA - Method NWTPH-Gx

The method blank and CCB's for batch 102742 contained GRO above the method detection limit. This target analyte concentration was less than 1/2 the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

The MB, LCS, and LCSD were inadvertently not spiked with TFT surrogate. This surrogate was passing in all other QC and samples, therefore the TFT in the MB, LCS, and LCSD has not been reported and everything else was reported.

No other analytical or quality issues were noted.

#### GC/MS VOA - Method NWTPH-VPH

The following samples H-MW-2 (580-30381-3) and H-MW-3 (580-30381-4) were diluted due to the abundance of target analytes based on the 8260B analysis: Elevated reporting limits (RLs) are provided.

The method blank for batch 102793 contained several ranges above the method detection limit. These target analyte concentrations were less than 1/2 the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

The C10-C12 Aliphatic range shows a %D of 22%. This range is not a calibrated range, but a composite of the calibrated ranges C10-C12 hydrocarbons - C10-C12 aromatics. Both of the calibrated ranges were within 20% D, therefore the samples were reported.

No other analytical or quality issues were noted.

#### GC Semi VOA - Method 8011

The continuing calibration verification (CCV) for EDB associated with batch 102718 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No other analytical or quality issues were noted.

#### GC Semi VOA - Method NWTPH-Dx

The results in the #2 Diesel (C10-C24) and Motor Oil (>C24-C36) ranges in samples H-MW-2 (580-30381-3) and H-MW-3 (580-30381-4) are due primarily to a mixture of a jet fuel/gasoline range product, weathered diesel fuel, and a mineral/transformer oil range product. The affected analyte ranges are qualified "Y" and have been reported.

No other analytical or quality issues were noted.

#### GC Semi VOA - Method NWTPH-EPH

The method blank for preparation batch 102783 in analytical batch 103435 contained C16-C21 aliphatics above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

#### Metals

No analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.

## Definitions/Glossary

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

### Qualifiers

#### GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Y	The chromatographic response resembles a typical fuel pattern.
B	Compound was found in the blank and sample.

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-1**

**Date Collected: 12/15/11 09:30**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-1**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.15	ug/L			12/22/11 18:07	1
Toluene	ND		1.0	0.15	ug/L			12/22/11 18:07	1
Ethylbenzene	ND		1.0	0.15	ug/L			12/22/11 18:07	1
m-Xylene & p-Xylene	ND		2.0	0.30	ug/L			12/22/11 18:07	1
o-Xylene	ND		1.0	0.15	ug/L			12/22/11 18:07	1
Naphthalene	ND		1.0	0.15	ug/L			12/22/11 18:07	1
Methyl tert-butyl ether	ND		1.0	0.15	ug/L			12/22/11 18:07	1
EDC	ND		1.0	0.15	ug/L			12/22/11 18:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		75 - 120		12/22/11 18:07	1
Ethylbenzene-d10	98		80 - 120		12/22/11 18:07	1
Fluorobenzene (Surr)	98		80 - 120		12/22/11 18:07	1
Toluene-d8 (Surr)	96		85 - 120		12/22/11 18:07	1
Trifluorotoluene (Surr)	104		80 - 120		12/22/11 18:07	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.014	J B	0.050	0.010	mg/L			12/27/11 22:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150		12/27/11 22:01	1
Trifluorotoluene (Surr)	115		50 - 150		12/27/11 22:01	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		12/27/11 12:00	12/27/11 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	79		70 - 130	12/27/11 12:00	12/27/11 16:25	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.12	0.072	mg/L		12/21/11 10:17	12/27/11 20:50	1
Motor Oil (>C24-C36)	0.082	J	0.25	0.047	mg/L		12/21/11 10:17	12/27/11 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150	12/21/11 10:17	12/27/11 20:50	1

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0031	J	0.030	0.0021	mg/L		12/28/11 08:00	12/28/11 19:44	1



# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-1D**

**Date Collected: 12/15/11 09:30**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-2**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.15	ug/L			12/22/11 18:33	1
Toluene	ND		1.0	0.15	ug/L			12/22/11 18:33	1
Ethylbenzene	ND		1.0	0.15	ug/L			12/22/11 18:33	1
m-Xylene & p-Xylene	ND		2.0	0.30	ug/L			12/22/11 18:33	1
o-Xylene	ND		1.0	0.15	ug/L			12/22/11 18:33	1
Naphthalene	ND		1.0	0.15	ug/L			12/22/11 18:33	1
Methyl tert-butyl ether	ND		1.0	0.15	ug/L			12/22/11 18:33	1
EDC	ND		1.0	0.15	ug/L			12/22/11 18:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		75 - 120		12/22/11 18:33	1
Ethylbenzene-d10	98		80 - 120		12/22/11 18:33	1
Fluorobenzene (Surr)	98		80 - 120		12/22/11 18:33	1
Toluene-d8 (Surr)	98		85 - 120		12/22/11 18:33	1
Trifluorotoluene (Surr)	107		80 - 120		12/22/11 18:33	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050	0.010	mg/L			12/27/11 22:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		50 - 150		12/27/11 22:27	1
Trifluorotoluene (Surr)	116		50 - 150		12/27/11 22:27	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		12/27/11 12:00	12/27/11 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	106		70 - 130	12/27/11 12:00	12/27/11 16:51	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.12	0.070	mg/L		12/21/11 10:17	12/27/11 21:11	1
Motor Oil (>C24-C36)	0.14	J	0.24	0.046	mg/L		12/21/11 10:17	12/27/11 21:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150	12/21/11 10:17	12/27/11 21:11	1

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0042	J	0.030	0.0021	mg/L		12/28/11 08:00	12/28/11 19:50	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-2**

**Date Collected: 12/15/11 11:20**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-3**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	120		1.0	0.15	ug/L			12/22/11 18:59	1
Toluene	94		1.0	0.15	ug/L			12/22/11 18:59	1
Naphthalene	90		1.0	0.15	ug/L			12/22/11 18:59	1
Methyl tert-butyl ether	ND		1.0	0.15	ug/L			12/22/11 18:59	1
EDC	ND		1.0	0.15	ug/L			12/22/11 18:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		75 - 120		12/22/11 18:59	1
Ethylbenzene-d10	101		80 - 120		12/22/11 18:59	1
Fluorobenzene (Surr)	102		80 - 120		12/22/11 18:59	1
Toluene-d8 (Surr)	103		85 - 120		12/22/11 18:59	1
Trifluorotoluene (Surr)	107		80 - 120		12/22/11 18:59	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	340		10	1.5	ug/L			12/23/11 19:12	10
m-Xylene & p-Xylene	1000		20	3.0	ug/L			12/23/11 19:12	10
o-Xylene	360		10	1.5	ug/L			12/23/11 19:12	10

## Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	430	J	500	23	ug/L			12/28/11 16:33	10
C10-C12 Aromatics	940	B	500	12	ug/L			12/28/11 16:33	10
C12-C13 Aromatics	190	J B	500	28	ug/L			12/28/11 16:33	10
C8-C10 Aliphatics	470	J	500	16	ug/L			12/28/11 16:33	10
C8-C10 Aromatics	2200		500	52	ug/L			12/28/11 16:33	10
C5-C6 Aliphatics	350	J B	500	29	ug/L			12/28/11 16:33	10
C6-C8 Aliphatics	380	J B	500	8.0	ug/L			12/28/11 16:33	10
Total VPH	5200	B	3500	10	ug/L			12/28/11 16:33	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	105		60 - 140		12/28/11 16:33	10
4-Bromofluorobenzene	107		60 - 140		12/28/11 16:33	10

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	7.8	B	0.050	0.010	mg/L			12/27/11 22:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	140		50 - 150		12/27/11 22:53	1
Trifluorotoluene (Surr)	116		50 - 150		12/27/11 22:53	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		12/27/11 12:00	12/27/11 17:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	101		70 - 130	12/27/11 12:00	12/27/11 17:16	1

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		48	3.0	ug/L		12/28/11 10:03	01/11/12 11:18	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

Client Sample ID: H-MW-2

Lab Sample ID: 580-30381-3

Date Collected: 12/15/11 11:20

Matrix: Water

Date Received: 12/20/11 10:40

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	330		48	3.9	ug/L		12/28/11 10:03	01/11/12 11:18	1
C12-C16 Aliphatics	ND		48	1.4	ug/L		12/28/11 10:03	01/11/12 11:18	1
C12-C16 Aromatics	73		48	5.5	ug/L		12/28/11 10:03	01/11/12 11:18	1
C16-C21 Aliphatics	8.6	J B	48	4.4	ug/L		12/28/11 10:03	01/11/12 11:18	1
C16-C21 Aromatics	13	J	48	6.7	ug/L		12/28/11 10:03	01/11/12 11:18	1
C21-C34 Aliphatics	12	J	48	11	ug/L		12/28/11 10:03	01/11/12 11:18	1
C21-C34 Aromatics	47	J	48	14	ug/L		12/28/11 10:03	01/11/12 11:18	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	86		60 - 140				12/28/11 10:03	01/11/12 11:18	1
1-Chlorooctadecane	78		60 - 140				12/28/11 10:03	01/11/12 11:18	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2.1	Y	0.12	0.072	mg/L		12/21/11 10:17	12/27/11 21:32	1
Motor Oil (>C24-C36)	0.47	Y	0.25	0.047	mg/L		12/21/11 10:17	12/27/11 21:32	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	97		50 - 150				12/21/11 10:17	12/27/11 21:32	1

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0046	J	0.030	0.0021	mg/L		12/28/11 08:00	12/28/11 19:56	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-3**

**Date Collected: 12/15/11 12:30**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-4**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	150		1.0	0.15	ug/L			12/22/11 19:25	1
Naphthalene	120		1.0	0.15	ug/L			12/22/11 19:25	1
Methyl tert-butyl ether	ND		1.0	0.15	ug/L			12/22/11 19:25	1
EDC	130		1.0	0.15	ug/L			12/22/11 19:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		75 - 120		12/22/11 19:25	1
Ethylbenzene-d10	97		80 - 120		12/22/11 19:25	1
Fluorobenzene (Surr)	101		80 - 120		12/22/11 19:25	1
Toluene-d8 (Surr)	100		85 - 120		12/22/11 19:25	1
Trifluorotoluene (Surr)	103		80 - 120		12/22/11 19:25	1

## Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1700		20	3.0	ug/L			12/23/11 20:03	20
Ethylbenzene	360		20	3.0	ug/L			12/23/11 20:03	20
m-Xylene & p-Xylene	1200		40	6.0	ug/L			12/23/11 20:03	20
o-Xylene	540		20	3.0	ug/L			12/23/11 20:03	20

## Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	360	J	1000	46	ug/L			12/28/11 17:26	20
C10-C12 Aromatics	890	J B	1000	24	ug/L			12/28/11 17:26	20
C12-C13 Aromatics	300	J B	1000	56	ug/L			12/28/11 17:26	20
C8-C10 Aliphatics	570	J	1000	32	ug/L			12/28/11 17:26	20
C8-C10 Aromatics	3000		1000	100	ug/L			12/28/11 17:26	20
C5-C6 Aliphatics	230	J B	1000	58	ug/L			12/28/11 17:26	20
C6-C8 Aliphatics	810	J B	1000	16	ug/L			12/28/11 17:26	20
Total VPH	8300	B	7000	20	ug/L			12/28/11 17:26	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BFB - PID	104		60 - 140		12/28/11 17:26	20
4-Bromofluorobenzene	103		60 - 140		12/28/11 17:26	20

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	11	B	0.050	0.010	mg/L			12/27/11 23:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	148		50 - 150		12/27/11 23:20	1
Trifluorotoluene (Surr)	118		50 - 150		12/27/11 23:20	1

## Method: 8011 - EDB and DBCP in Water by Microextraction

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010	0.0020	ug/L		12/27/11 12:00	12/27/11 18:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	110		70 - 130	12/27/11 12:00	12/27/11 18:33	1

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		49	3.0	ug/L		12/28/11 10:03	01/11/12 11:44	1

# Client Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-3**

**Date Collected: 12/15/11 12:30**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-4**

**Matrix: Water**

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>C10-C12 Aromatics</b>	<b>450</b>		49	4.0	ug/L		12/28/11 10:03	01/11/12 11:44	1
C12-C16 Aliphatics	ND		49	1.5	ug/L		12/28/11 10:03	01/11/12 11:44	1
<b>C12-C16 Aromatics</b>	<b>280</b>		49	5.5	ug/L		12/28/11 10:03	01/11/12 11:44	1
<b>C16-C21 Aliphatics</b>	<b>5.6</b>	<b>J B</b>	49	4.5	ug/L		12/28/11 10:03	01/11/12 11:44	1
<b>C16-C21 Aromatics</b>	<b>87</b>		49	6.8	ug/L		12/28/11 10:03	01/11/12 11:44	1
C21-C34 Aliphatics	ND		49	11	ug/L		12/28/11 10:03	01/11/12 11:44	1
<b>C21-C34 Aromatics</b>	<b>48</b>	<b>J</b>	49	15	ug/L		12/28/11 10:03	01/11/12 11:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	86		60 - 140				12/28/11 10:03	01/11/12 11:44	1
1-Chlorooctadecane	82		60 - 140				12/28/11 10:03	01/11/12 11:44	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>21</b>	<b>Y</b>	0.12	0.071	mg/L		12/21/11 10:17	12/27/11 21:53	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>3.0</b>	<b>Y</b>	0.24	0.047	mg/L		12/21/11 10:17	12/27/11 21:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	73		50 - 150				12/21/11 10:17	12/27/11 21:53	1

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Lead</b>	<b>0.0056</b>	<b>J</b>	0.030	0.0021	mg/L		12/28/11 08:00	12/28/11 20:01	1

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-102613/5

Matrix: Water

Analysis Batch: 102613

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.15	ug/L			12/22/11 15:59	1
Toluene	ND		1.0	0.15	ug/L			12/22/11 15:59	1
Ethylbenzene	ND		1.0	0.15	ug/L			12/22/11 15:59	1
m-Xylene & p-Xylene	ND		2.0	0.30	ug/L			12/22/11 15:59	1
o-Xylene	ND		1.0	0.15	ug/L			12/22/11 15:59	1
Naphthalene	ND		1.0	0.15	ug/L			12/22/11 15:59	1
Methyl tert-butyl ether	ND		1.0	0.15	ug/L			12/22/11 15:59	1
EDC	ND		1.0	0.15	ug/L			12/22/11 15:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		75 - 120		12/22/11 15:59	1
Ethylbenzene-d10	100		80 - 120		12/22/11 15:59	1
Fluorobenzene (Surr)	99		80 - 120		12/22/11 15:59	1
Toluene-d8 (Surr)	97		85 - 120		12/22/11 15:59	1
Trifluorotoluene (Surr)	103		80 - 120		12/22/11 15:59	1

Lab Sample ID: LCS 580-102613/6

Matrix: Water

Analysis Batch: 102613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.6		ug/L		98	80 - 120
Toluene	20.1	20.1		ug/L		100	75 - 120
Ethylbenzene	19.9	20.0		ug/L		100	75 - 125
m-Xylene & p-Xylene	40.1	40.4		ug/L		101	75 - 130
o-Xylene	19.9	19.5		ug/L		98	80 - 120
Naphthalene	20.1	20.8		ug/L		104	55 - 140
Methyl tert-butyl ether	20.1	20.4		ug/L		102	65 - 125
EDC	19.9	20.8		ug/L		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		75 - 120
Ethylbenzene-d10	106		80 - 120
Fluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	102		85 - 120
Trifluorotoluene (Surr)	106		80 - 120

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-102742/4

Matrix: Water

Analysis Batch: 102742

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.0169	J	0.050	0.010	mg/L			12/27/11 19:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		50 - 150		12/27/11 19:49	1

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-102742/5

Matrix: Water

Analysis Batch: 102742

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline			1.00	0.882		mg/L		88	79 - 110		
Surrogate	LCS	LCS									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	102		50 - 150								

Lab Sample ID: LCSD 580-102742/6

Matrix: Water

Analysis Batch: 102742

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec.	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline			1.00	0.876		mg/L	—	88	79 - 110	1	20
Surrogate	LCSD	LCSD									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	103		50 - 150								

## Method: 8011 - EDB and DBCP in Water by Microextraction

Lab Sample ID: MB 580-102725/1-A

Matrix: Water

Analysis Batch: 102718

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102725

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ethylene Dibromide	ND		0.010	0.0020	ug/L		12/27/11 12:00	12/27/11 15:07	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
1,2-Dibromopropane	93		70 - 130	12/27/11 12:00	12/27/11 15:07	1			

Lab Sample ID: LCS 580-102725/2-A

Matrix: Water

Analysis Batch: 102718

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102725

			Spike	LCS	LCS	%Rec.			
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Ethylene Dibromide			0.0571	0.0629		ug/L		110	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
1,2-Dibromopropane	91		70 - 130						

Lab Sample ID: LCSD 580-102725/3-A

Matrix: Water

Analysis Batch: 102718

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 102725

Top Data: 10/17/10										Top Data: 10/17/10	
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide			0.0571	0.0623		ug/L	-	109	70 - 130	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
1,2-Dibromopropane	96		70 - 130								

# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

## Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-102783/1-B

Matrix: Water

Analysis Batch: 103435

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 102783

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		50	3.1	ug/L		12/28/11 10:03	01/11/12 09:57	1
C10-C12 Aromatics	ND		50	4.1	ug/L		12/28/11 10:03	01/11/12 09:57	1
C12-C16 Aliphatics	ND		50	1.5	ug/L		12/28/11 10:03	01/11/12 09:57	1
C12-C16 Aromatics	ND		50	5.7	ug/L		12/28/11 10:03	01/11/12 09:57	1
C16-C21 Aliphatics	7.22	J	50	4.6	ug/L		12/28/11 10:03	01/11/12 09:57	1
C16-C21 Aromatics	ND		50	7.0	ug/L		12/28/11 10:03	01/11/12 09:57	1
C21-C34 Aliphatics	ND		50	11	ug/L		12/28/11 10:03	01/11/12 09:57	1
C21-C34 Aromatics	ND		50	15	ug/L		12/28/11 10:03	01/11/12 09:57	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		60 - 140				12/28/11 10:03	01/11/12 09:57	1
1-Chlorooctadecane	74		60 - 140				12/28/11 10:03	01/11/12 09:57	1

Lab Sample ID: LCS 580-102783/2-B

Matrix: Water

Analysis Batch: 103435

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 102783

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	200	163		ug/L		82	70 - 130
C10-C12 Aromatics	200	186		ug/L		93	70 - 130
C12-C16 Aliphatics	400	352		ug/L		88	70 - 130
C12-C16 Aromatics	600	594		ug/L		99	70 - 130
C16-C21 Aliphatics	600	537		ug/L		89	70 - 130
C16-C21 Aromatics	1200	1050		ug/L		88	70 - 130
C21-C34 Aliphatics	1200	1070		ug/L		89	70 - 130
C21-C34 Aromatics	1600	1840		ug/L		115	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	94		60 - 140				
1-Chlorooctadecane	81		60 - 140				

Lab Sample ID: LCSD 580-102783/3-B

Matrix: Water

Analysis Batch: 103435

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 102783

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	200	152		ug/L		76	70 - 130	7	25
C10-C12 Aromatics	200	163		ug/L		82	70 - 130	13	25
C12-C16 Aliphatics	400	335		ug/L		84	70 - 130	5	25
C12-C16 Aromatics	600	541		ug/L		90	70 - 130	9	25
C16-C21 Aliphatics	600	532		ug/L		89	70 - 130	1	25
C16-C21 Aromatics	1200	996		ug/L		83	70 - 130	6	25
C21-C34 Aliphatics	1200	1040		ug/L		86	70 - 130	3	25
C21-C34 Aromatics	1600	1740		ug/L		109	70 - 130	6	25
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	89		60 - 140						
1-Chlorooctadecane	79		60 - 140						



# QC Sample Results

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 580-102740/22-A  
Matrix: Water  
Analysis Batch: 102849

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 102740

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.030	0.0021	mg/L		12/28/11 08:00	12/28/11 17:35	1

Lab Sample ID: LCS 580-102740/23-A  
Matrix: Water  
Analysis Batch: 102849

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 102740

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.929		mg/L		93	80 - 120

Lab Sample ID: LCSD 580-102740/24-A  
Matrix: Water  
Analysis Batch: 102849

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total Recoverable  
Prep Batch: 102740

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1.00	0.908		mg/L		91	80 - 120	2	20

# Lab Chronicle

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-1**

**Date Collected: 12/15/11 09:30**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	102613	12/22/11 18:07	MAT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102742	12/27/11 22:01	MAT	TAL SEA
Total/NA	Prep	3520C			102491	12/21/11 10:17	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102700	12/27/11 20:50	KKW	TAL SEA
Total/NA	Prep	8011			102725	12/27/11 12:00	BT	TAL SEA
Total/NA	Analysis	8011		1	102718	12/27/11 16:25	BT	TAL SEA
Total Recoverable	Prep	3005A			102740	12/28/11 08:00	PAB	TAL SEA
Total Recoverable	Analysis	6010B		1	102849	12/28/11 19:44	SP	TAL SEA

**Client Sample ID: H-MW-1D**

**Date Collected: 12/15/11 09:30**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	102613	12/22/11 18:33	MAT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102742	12/27/11 22:27	MAT	TAL SEA
Total/NA	Prep	3520C			102491	12/21/11 10:17	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102700	12/27/11 21:11	KKW	TAL SEA
Total/NA	Prep	8011			102725	12/27/11 12:00	BT	TAL SEA
Total/NA	Analysis	8011		1	102718	12/27/11 16:51	BT	TAL SEA
Total Recoverable	Prep	3005A			102740	12/28/11 08:00	PAB	TAL SEA
Total Recoverable	Analysis	6010B		1	102849	12/28/11 19:50	SP	TAL SEA

**Client Sample ID: H-MW-2**

**Date Collected: 12/15/11 11:20**

**Date Received: 12/20/11 10:40**

**Lab Sample ID: 580-30381-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	102613	12/22/11 18:59	MAT	TAL SEA
Total/NA	Analysis	8260B	DL	10	102665	12/23/11 19:12	MAT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102742	12/27/11 22:53	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VPH	DL	10	102793	12/28/11 16:33	MAT	TAL SEA
Total/NA	Prep	3520C			102491	12/21/11 10:17	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102700	12/27/11 21:32	KKW	TAL SEA
Total/NA	Prep	8011			102725	12/27/11 12:00	BT	TAL SEA
Total/NA	Analysis	8011		1	102718	12/27/11 17:16	BT	TAL SEA
Total/NA	Prep	3520C			102783	12/28/11 10:03	GH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	103435	01/11/12 11:18	EK	TAL SEA
Total Recoverable	Prep	3005A			102740	12/28/11 08:00	PAB	TAL SEA
Total Recoverable	Analysis	6010B		1	102849	12/28/11 19:56	SP	TAL SEA

# Lab Chronicle

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

**Client Sample ID: H-MW-3**

**Lab Sample ID: 580-30381-4**

**Date Collected: 12/15/11 12:30**

**Matrix: Water**

**Date Received: 12/20/11 10:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	102613	12/22/11 19:25	MAT	TAL SEA
Total/NA	Analysis	8260B	DL	20	102665	12/23/11 20:03	MAT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	102742	12/27/11 23:20	MAT	TAL SEA
Total/NA	Analysis	NWTPH/VPH	DL	20	102793	12/28/11 17:26	MAT	TAL SEA
Total/NA	Prep	3520C			102491	12/21/11 10:17	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	102700	12/27/11 21:53	KKW	TAL SEA
Total/NA	Prep	8011			102725	12/27/11 12:00	BT	TAL SEA
Total/NA	Analysis	8011		1	102718	12/27/11 18:33	BT	TAL SEA
Total/NA	Prep	3520C			102783	12/28/11 10:03	GH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	103435	01/11/12 11:44	EK	TAL SEA
Total Recoverable	Prep	3005A			102740	12/28/11 08:00	PAB	TAL SEA
Total Recoverable	Analysis	6010B		1	102849	12/28/11 20:01	SP	TAL SEA

## Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

## Certification Summary

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska	Alaska UST	10	UST-022
TestAmerica Seattle	Alaska	TA-Port Heiden Mobile Lab	10	UST-093
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	Florida	NELAC	4	E871074
TestAmerica Seattle	L-A-B	DoD ELAP		L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Louisiana	NELAC	6	05016
TestAmerica Seattle	Montana	MT DEQ UST	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	USDA		P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

## Sample Summary

Client: TerraGraphics Inc  
Project/Site: Pet Health Clinic

TestAmerica Job ID: 580-30381-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-30381-1	H-MW-1	Water	12/15/11 09:30	12/20/11 10:40
580-30381-2	H-MW-1D	Water	12/15/11 09:30	12/20/11 10:40
580-30381-3	H-MW-2	Water	12/15/11 11:20	12/20/11 10:40
580-30381-4	H-MW-3	Water	12/15/11 12:30	12/20/11 10:40

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

**www.testamericainc.com**

☐ Rush  
☐ Short Hold

# Chain of Custody Record

30381

[illegible]

## Login Sample Receipt Checklist

Client: TerraGraphics Inc

Job Number: 580-30381-1

Login Number: 30381

List Source: TestAmerica Seattle

List Number: 1

Creator: Gamble, Cathy




Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	See NCM
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	See NCM
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	False	See NCM
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

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
## **Appendix C**


### **Boring Logs**





		Project No.: 11071				Page 1 of 1																									
PROJECT: Sunnyside Pet Health Clinic					Log of Boring No.: BH-1																										
BORING LOCATION: Northwest of building in alley					ELEVATION AND DATUM: Ground																										
DRILLING CONTRACTOR: TerraGraphics Environmental Engineering					STARTED - DATE: 12-8-11		TIME: 1500		COMPLETED - DATE: 12-8-11		TIME: 1530																				
DRILLER: B. Dobson, C. Watson					TOTAL DEPTH (ft): 15 ft		WELL DEPTH(ft):		MEASURING POINT: Ground																						
DRILLING METHOD: Direct Push					DEPTH TO WATER (ft):																										
DRILLING EQUIPMENT: PowerProbe 9600, MB156 Hammer					LOGGED BY: M. Procsal																										
SAMPLING METHOD: Grab, 2" macro core					REVIEWED BY:																										
Well Construction Detail	PID/FID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others																								
		Blows Per Foot	Sample ID and Time																												
	0			1		ML	SILT with fine sand, moist, light brown.																								
	0			2																											
	0			3																											
	0			4																											
	0			5																											
	0			6																											
	13.7			7																											
	30.9	BH-1 8' 1528		8									ML/CL	SILT/CLAY, very soft, stained green, very wet.																	
				9																											
	3.1			10									ML							SILT with clay, light brown, very wet.											
				11																											
	0.9			12																											
	0			13																											
	0			14									CL													CLAY with silt, medium plasticity, slow dilatancy, gray/brown, moist.					
				15																											
	0			16																											
				17																											
			18																												
			19																												
			20																												


Well Construction Legend:

 Concrete:

 Bentonite Chips: 0'-15' bgs

 Slotted Well Screen:

 Filter Sand:

 Approximate Depth to Groundwater

Notes:

**PROJECT:** Sunnyside Pet Health Clinic

**Log of Boring No.:** BH-2/MW-2

**BORING LOCATION:** North section of alley

**ELEVATION AND DATUM:** Ground

**DRILLING CONTRACTOR:** TerraGraphics Environmental Engineering

**STARTED - DATE:** 12-9-11 **TIME:** 1012 **COMPLETED - DATE:** 12-9-11 **TIME:** 1100

**DRILLER:** B. Dobson, C. Watson

**TOTAL DEPTH (ft):** 15 ft **WELL DEPTH(ft):** 11 ft **MEASURING POINT:** Ground

**DRILLING METHOD:** Direct Push

**DEPTH TO WATER (ft):** **TIME:**
**DRILLING EQUIPMENT:** PowerProbe 9600, MB156 Hammer




**LOGGED BY:** M. Procsal



**SAMPLING METHOD:** Grab, 2" macro core

**REVIEWED BY:**

Well Construction Detail	PID/FID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others
		Blows Per Foot	Sample ID and Time				
							Fill
	6.7			1		ML	SILT with fine sand, gray, dry.
	80			2			
	1400		BH-2 5' 1031	3		CL	CLAY, very soft, medium plasticity, stained, odor, moist.
				4			
				5		ML	SILT with fine sand and clay. Stained green, very wet, soft.
	149			6			
				7			
	30			8		CL	CLAY, brown, not stained, wet, soft.
	7			9			
	2			10			CLAY with 20% silt, brown, not stained, trace fine sand.
	0.9			11			
				12			
				13			CLAY, stiff, light gray.
	0.4			14			
				15			
				16			
				17			
				18			
				19			
				20			

**Well Construction Legend:**

	Concrete: 0'-1' bgs
	Bentonite Chlps: 1'-6' bgs, 13'-15'
	Slotted Well Screen: 6'-11' bgs

	Filter Sand: 6'-13' bgs
	Approximate Depth to Groundwater

**Notes:**

2" pre pack installed.  
7" flush mount monument installed.

**PROJECT:** Sunnyside Pet Health Clinic

**Log of Boring No.:** BH-3

**BORING LOCATION:** West of building in alley

**ELEVATION AND DATUM:** Ground

**DRILLING CONTRACTOR:** TerraGraphics Environmental Engineering

**STARTED - DATE:** 12-8-11 **TIME:** 1534 **COMPLETED - DATE:** 12-8-11 **TIME:** 1600

**DRILLER:** B. Dobson, C. Watson

**TOTAL DEPTH (ft):** 15 ft **WELL DEPTH(ft):** **MEASURING POINT:** Ground



**DRILLING METHOD:** Direct Push

**DEPTH TO WATER (ft):** **TIME:**
**DRILLING EQUIPMENT:** PowerProbe 9600, MB156 Hammer




**LOGGED BY:** M. Procsal



**SAMPLING METHOD:** Grab, 2" macro core

**REVIEWED BY:**

Well Construction Detail	PID/ID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others
		Blows Per Foot	Sample ID and Time				
	2.7			1		ML	FILL
				2			SILT with fine sand
	50			3			
				4			
	1100			5		CL	CLAY, green and stained, soft, medium plasticity, wet at 5', sheen at 5-8'
	1900		BH-3 6' 1548	6			
				7			
	380			8			
				9			
				10			
	39			11			CLAY
				12		ML/CL	CLAY and silt
	20			13			
				14			
	6			15			
				16			
				17			
				18			
				19			
				20			


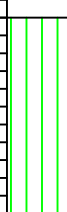
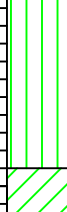


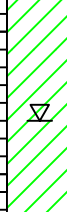



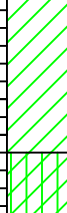

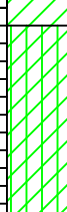
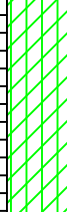
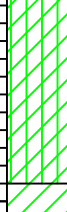


**Well Construction Legend:**

 Concrete:  
 Bentonite Chips: 0'-15' bgs  
 Slotted Well Screen:

 Filter Sand:  
 Approximate Depth to Groundwater

**Notes:**

<b>PROJECT:</b> Sunnyside Pet Health Clinic	<b>Log of Boring No.:</b> BH-4		
<b>BORING LOCATION:</b> North section of alley	<b>ELEVATION AND DATUM:</b> Ground		
<b>DRILLING CONTRACTOR:</b> TerraGraphics Environmental Engineering	<b>STARTED - DATE:</b> 12-9-11	<b>TIME:</b> 0830	<b>COMPLETED - DATE:</b> 12-9-11 <b>TIME:</b> 0900
<b>DRILLER:</b> B. Dobson, C. Watson	<b>TOTAL DEPTH (ft):</b> 15 ft	<b>WELL DEPTH(ft):</b>	<b>MEASURING POINT:</b> Ground
<b>DRILLING METHOD:</b> Direct Push	<b>DEPTH TO WATER (ft):</b>		
<b>DRILLING EQUIPMENT:</b> PowerProbe 9600, MB156 Hammer	<b>LOGGED BY:</b> M. Proccal		
<b>SAMPLING METHOD:</b> Grab, 2" macro core	<b>REVIEWED BY:</b>		

Well Construction Detail	PID/FID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others
		Blows Per Foot	Sample ID and Time				
	0			1		ML	Fill, gravel, sand.
	0			2			SILT, brown, 10% fine sand.
	0			3			
	0			4		CL	BROWN CLAY, soft, medium plasticity, moist.
	0			5			
	0			6			
	0			7			
	0			8			Poor recovery.
	0			9			
	0			10		ML/CL	SILT/CLAY, slow dilatancy, medium plasticity, very soft, very wet.
	0		BH-4 11' 0850	11			
	0			12			
	0			13			
	0			14		CL	CLAY.
	0			15			
				16			
				17			
				18			
				19			
				20			

**Well Construction Legend:**

Concrete:  
Bentonite Chips: 0'-15' bgs  
Slotted Well Screen:



Filter Sand:



Approximate Depth to Groundwater

**Notes:**

PROJECT: Sunnyside Pet Health Clinic

Log of Boring No.: BH-5

BORING LOCATION: Northeast of building in the lawn

ELEVATION AND DATUM: Ground

DRILLING CONTRACTOR: TerraGraphics Environmental Engineering

STARTED - DATE: 12-9-11 TIME: 0911 COMPLETED - DATE: 12-9-11 TIME: 0940

DRILLER: B. Dobson, C. Watson

TOTAL DEPTH (ft): 15 ft WELL DEPTH(ft): MEASURING POINT:

DRILLING METHOD: Direct Push







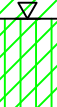
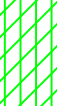
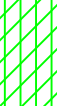
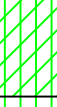
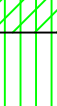
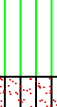
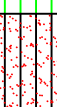

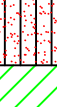
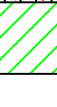
DEPTH TO WATER (ft): TIME:

DRILLING EQUIPMENT: PowerProbe 9600, MB156 Hammer

LOGGED BY: M. Procsal

SAMPLING METHOD: Grab, 2" macro core

REVIEWED BY:

Well Construction Detail	PID/ID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others
		Blows Per Foot	Sample ID and Time				
	0			1		ML	SILT, dry, brown, loose organics, very small roots.
	0			2			
	0			3			
	0			4		CL	CLAY with silt, moist, brown, soft, medium plasticity.
	0			5			
	0		BH-5 6' 0925	6		ML/CL	SILT/CLAY, rapid dilatancy, medium plasticity, brown, very soft, very wet.
	0			7			
	0			8			
	0			9			
	0			10		ML	SILT with fine sand, trace clay
	0			11			
	0			12		SM	SILTY SAND with clay, fine, brown, very wet
	0			13			
	0			14		CL	CLAY, light gray, low plasticity, with silt and fine sand
	0			15			
				16			
				17			
				18			
				19			
				20			

## Well Construction Legend:

Concrete:  
Bentonite Chips: 0'-15' bgs  
Slotted Well Screen:


Filter Sand:



Approximate Depth to Groundwater

## Notes:

**PROJECT:** Sunnyside Pet Health Clinic

**Log of Boring No.:** BH-6

**BORING LOCATION:** Southwest of building in lawn

**ELEVATION AND DATUM:** Ground

**DRILLING CONTRACTOR:** TerraGraphics Environmental Engineering

**STARTED - DATE:** 12-9-11 **TIME:** 1130 **COMPLETED - DATE:** 12-9-11 **TIME:** 1230

**DRILLER:** B. Dobson, C. Watson

**TOTAL DEPTH (ft):** 15 ft **WELL DEPTH(ft):**   
 **MEASURING POINT:** Ground


**DRILLING METHOD:** Direct Push

**DEPTH TO WATER (ft):**   
 **TIME:**
**DRILLING EQUIPMENT:** PowerProbe 9600, MB156 Hammer




**LOGGED BY:** M. Procsal



**SAMPLING METHOD:** Grab, 2" macro core

**REVIEWED BY:**

Well Construction Detail	PID/FID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others
		Blows Per Foot	Sample ID and Time				
	0			1	ML		Sod.
	0			2			
	0			3			
	0			4			
	0			5	CL		Moist.
	0			6			
	0			7			
	0			8			
	0			9	SM		
	0			10			
	0			11			
	0			12	ML/CL		
	0			13			
	0			14	CL		
	0			15			
				16			
				17			
				18			
				19			
				20			

**Well Construction Legend:**

 Concrete:  
 Bentonite Chips: 0'-15' bgs  
 Slotted Well Screen:

 Filter Sand:  
 Approximate Depth to Groundwater

**Notes:**

**PROJECT:** Sunnyside Pet Health Clinic

**Log of Boring No.:** MW-1

**BORING LOCATION:** North East of building

**ELEVATION AND DATUM:** Ground

**DRILLING CONTRACTOR:** TerraGraphics Environmental Engineering

**STARTED - DATE:** 12-9-11 **TIME:** 0930 **COMPLETED - DATE:** 12-9-11 **TIME:** 1000

**DRILLER:** B. Dobson, C. Watson

**TOTAL DEPTH (ft):** 11 ft **WELL DEPTH(ft):** 11 ft **MEASURING POINT:** Ground

**DRILLING METHOD:** Direct Push

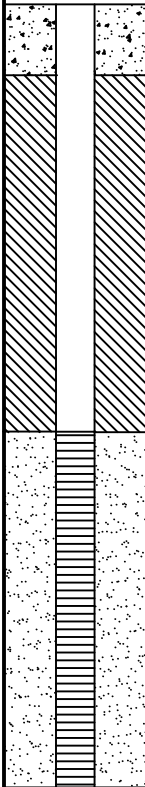

**DEPTH TO WATER (ft):** **TIME:**

**DRILLING EQUIPMENT:** PowerProbe 9600, MB156 Hammer




**LOGGED BY:** M. Procsal



**SAMPLING METHOD:** Grab, 2" macro core

**REVIEWED BY:**

Well Construction Detail	PID/FID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others
		Blows Per Foot	Sample ID and Time				
				1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20			No soil boring.


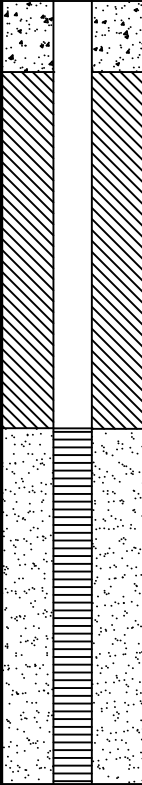





**Well Construction Legend:**

-  Concrete: 0' to 1' bgs.
-  Bentonite Chips: 1'-6' bgs
-  Slotted Well Screen: 6'-11' bgs

-  Filter Sand: 6'-11' bgs
-  Approximate Depth to Groundwater

**Notes:**

- 2" prepack installed,
- 7" flush mount monument set in concrete.

		Project No.: 11071				Page 1 of 1			
PROJECT: Sunnyside Pet Health Clinic						Log of Boring No.: MW-3			
BORING LOCATION: West of building in alley						ELEVATION AND DATUM:			
DRILLING CONTRACTOR: TerraGraphics Environmental Engineering						STARTED - DATE: 12-9-11	TIME: 1237	COMPLETED - DATE: 12-9-11	TIME: 1320
DRILLER: B. Dobson, C. Watson						TOTAL DEPTH (ft): 11 ft	WELL DEPTH(ft): 11 ft		MEASURING POINT:
DRILLING METHOD: Direct Push						DEPTH TO WATER (ft):			
DRILLING EQUIPMENT: PowerProbe 9600, MB156 Hammer						LOGGED BY: M. Procsal			
SAMPLING METHOD: Grab, 2" macro core						REVIEWED BY:			
Well Construction Detail	PID/FID (ppm)	SAMPLES		DEPTH (feet)	GRAPHIC	CLASS	DESCRIPTION Group Symbol (e.g. SM), Color, Group Name (e.g. Silty Sand), Particle Size Range, Consistency (hard soft) , Moisture Content, and others		
		Blows Per Foot	Sample ID and Time						
				1			No soil boring.		
				2					
				3					
				4					
				5					
				6	▽				
				7					
				8					
				9					
				10					
				11					
				12					
				13					
				14					
				15					
				16					
				17					
				18					
				19					
				20					
<b>Well Construction Legend:</b>  Concrete: 0'-1' bgs  Bentonite Chlps: 1'-6' bgs  Slotted Well Screen: 6'-11' bgs						<b>Notes:</b> 2" pre pack installed. 7" flush mount monument set in concrete.			
 Filter Sand: 6'-11' bgs  Approximate Depth to Groundwater									



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## **Appendix D**

### **Groundwater Sampling Forms**



Moscow  
Kellogg  
Boise  
Spokane

Project: <i>Pet Health Clinic</i>	Well Number: <i>MW-1</i>
Project Number: <i>11071</i>	Sample Number: <i>H-MW-1</i>
Location: <i>Sunnyside, WA</i>	Weather: <i>Snow 27°F</i>
Date: <i>12/15/2011</i>	Sampler(s): <i>1SD</i>

Depth to Bottom (ft): 10.35				Purge Time: 40 min		
Depth to Water (ft): 6.00				Purge Method: Peristaltic		
DTB-DTW (ft): 4.35				Volume Measurement Method:		
Volume (gal): 0.73				Purge Volume (Volume x 3) (gal): 2.2		
Conversion Factors (height x factor=vol)	¾" diameter 0.023	1" diameter 0.041	1 ½" diameter 0.092	2" diameter 0.163	4" diameter 0.652	8" diameter 2.611

Purged Volume (gal)	Time	pH	Cond ( $\mu$ /cm)	Temp ( $^{\circ}$ C)	Dissolved Oxygen		ORP (mV)
					mg/L	%	
0	858	7.56	1.620 mS	10.9	6.06	54.1	-112.2
1.5	853	8.23	1.686 mS	11.4	9.00	81.7	-88.0
2.0	900	8.20	1.674 mS	11.9	6.98	64.2	-83.1
3.0	918	8.20	1.681 mS	11.1	9.03	81.0	-82.5

[illegible]

Chain of Custody: <u>Yes</u> No	Duplicate Sample Number: <u>1A-MW-10</u>
Chain of Custody Number:	Replicate Sample Number:
Laboratory:	
Method of Shipment:	
Split With:	

Notes: Duplicate Taken	Turbidity NTU 43.22 NTU
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**TerraGraphics**  
ENVIRONMENTAL ENGINEERING, INC.

Moscow  
Kellogg  
**Boise**  
Spokane

### GROUNDWATER SAMPLING RECORD

Project: <i>Pet Health Clinic</i>	Well Number: <i>MW-2</i>
Project Number: <i>11071</i>	Sample Number: <i>14-MW-2</i>
Location: <i>Sunnyside, WA</i>	Weather: <i>Snowing 27°F</i>
Date: <i>12/15/2011</i>	Sampler(s): <i>BD</i>

Depth to Bottom (ft): <i>10.40</i>	Purge Time: <i>35 min</i>						
Depth to Water (ft): <i>5.75</i>	Purge Method:						
DTB-DTW (ft): <i>4.65</i>	Volume Measurement Method:						
Volume (gal): <i>0.97</i>	Purge Volume (Volume x 3) (gal): <i>2.3</i>						
Conversion Factors (height x factor=vol)	<table border="1"> <tr> <td>3/4" diameter 0.023</td> <td>1" diameter 0.041</td> <td>1 1/4" diameter 0.092</td> <td><del>2" diameter</del> 0.163</td> <td>4" diameter 0.652</td> <td>8" diameter 2.611</td> </tr> </table>	3/4" diameter 0.023	1" diameter 0.041	1 1/4" diameter 0.092	<del>2" diameter</del> 0.163	4" diameter 0.652	8" diameter 2.611
3/4" diameter 0.023	1" diameter 0.041	1 1/4" diameter 0.092	<del>2" diameter</del> 0.163	4" diameter 0.652	8" diameter 2.611		

### GROUNDWATER DATA

Purged Volume (gal)	Time	pH	Cond ( $\mu$ /cm)	Temp (°C)	Dissolved Oxygen		ORP (mV)
					mg/L	%	
<i>0</i>	<i>1045</i>	<i>7.42</i>	<i>2.517ms</i>	<i>12.6</i>	<i>8.65</i>	<i>80.8</i>	<i>-38.9</i>
<i>1.0</i>	<i>1053</i>	<i>7.46</i>	<i>2.485ms</i>	<i>13.5</i>	<i>7.03</i>	<i>68.6</i>	<i>-39.2</i>
<i>2.0</i>	<i>1059</i>	<i>7.71</i>	<i>2.383ms</i>	<i>12.4</i>	<i>8.17</i>	<i>77.1</i>	<i>-53.9</i>
<i>2.5</i>	<i>1106</i>	<i>7.58</i>	<i>2.300ms</i>	<i>13.7</i>	<i>6.62</i>	<i>64.4</i>	<i>-48.0</i>
<i>3.0</i>	<i>1115</i>	<i>7.63</i>	<i>2.319ms</i>	<i>13.3</i>	<i>6.68</i>	<i>64.9</i>	<i>-48.6</i>

Sampling Date: <i>12/15</i>	Sampling Method:	Time Sampled: <i>1120</i>
Container	Volume	Preservative

Chain of Custody: <i>(Yes) No</i>	Duplicate Sample Number:
Chain of Custody Number:	Replicate Sample Number:

Laboratory:

Method of Shipment:

Split With:

Notes:	<i>Turbidity NTU</i>
	<i>21.06</i>

## GROUNDWATER SAMPLING RECORD

Project: <i>Pet Health Clinic</i>	Well Number: <i>MW-3</i>
Project Number: <i>11071</i>	Sample Number: <i>14-MW-3</i>
Location: <i>Sunny side, 6th</i>	Weather: <i>Cloudy 28°F</i>
Date: <i>12/15/2011</i>	Sampler(s): <i>ED1</i>

Depth to Bottom (ft): <u>10.22</u>				Purge Time: <u>30 min</u>		
Depth to Water (ft): <u>5.99</u>				Purge Method:		
DTB-DTW (ft): <u>4.23</u>				Volume Measurement Method:		
Volume (gal): <u>0.69</u>				Purge Volume (Volume x 3) (gal): <u>2.1</u>		
Conversion Factors (height x factor=vol)	¾" diameter 0.023	1" diameter 0.041	1 ½" diameter 0.092	2" diameter 0.163	4" diameter 0.652	8" diameter 2.611

## GROUNDWATER DATA

Purged Volume (gal)	Time	pH	Cond ( $\mu$ /cm)	Temp ( $^{\circ}$ C)	Dissolved Oxygen		ORP (mV)
					mg/L	%	
0	1200	7.26	2.662 mS	14.0	5.31	52.6	-29.2
1.0	1208	7.26	2.661 mS	14.0	5.02	57.3	-29.8
2.0	1214	7.53	2.641 mS	12.7	8.50	80.9	-43.1
2.5	1220	7.43	2.648 mS	13.5	8.08	78.2	-36.5
3.0	1225	7.28	2.618 mS	13.5	7.93	77.2	-31.4

[illegible]

Chain of Custody: Yes/No	Duplicate Sample Number:
Chain of Custody Number:	Replicate Sample Number:

Laboratory:

Method of Shipment:

Split With:

Notes: Turbidity NTU

	33.20 NTU
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