# APPENDIX F:
# LIMITED ENVIRONMENTAL SITE CHARACTERIZATION

28 January 2015

Mr. Mark Tersini
KT Properties, Inc.
21710 Stevens Creek Blvd., Suite 200
Cupertino, California 95014

**Subject: Limited Environmental Site Characterization**
**The Oaks at 21255 Stevens Creek Boulevard**
**Cupertino, California**
**Langan Project: 770619001**

Dear Mr. Tersini:

This letter report presents the results of the limited environmental site characterization (ESC) performed by Langan Treadwell Rollo (Langan) for the proposed development at The Oaks which is located at 21255 Stevens Creek Boulevard, Cupertino, California (site). The site is northwest of the intersection of Stevens Creek Boulevard and Mary Avenue, across from DeAnza College. It is bound on the north and east side by Mary Avenue, Stevens Creek Boulevard to the south and an on-ramp onto Highway 85 to the west. It is currently The Oaks shopping center and is occupied by several one-story buildings and surrounding paved parking lots and landscaping.

We understand that the proposed development is not yet planned, but that a mid- to high-rise building with one to three basement levels is being considered. The purpose of this ESC was to conduct soil sampling and analysis to assess the potential for soil contamination resulting from past and/or present site activities and nearby off-site operations. The objective of the ESC was to preliminarily characterize the soil to assist in the off-haul of excavated material from the site.

## SUBSURFACE INVESTIGATION

On 2 and 3 October 2014, Langan drilled three exploratory borings (B-1, B-2, and B-3) with a truck-mounted hollow stem auger drill rig to collect soil samples for chemical analysis. Drilling was conducted by Gregg Drilling and Testing, Inc. a project team member from Martinez, California. Prior to performing the field exploration, Underground Service Alert (USA) was contacted and a private utility locator was retained to check the boring locations for existing utilities.

The borings were drilled with a hollow stem auger to about 47 feet below ground surface (bgs). Our engineer logged the borings and obtained samples of the material encountered for visual classification and laboratory testing. Logs of the borings are presented in Appendix A as Figures A-1 through A-3. The soil encountered in the borings was classified in accordance with the Classification Chart presented on Figure A-4.

Soil samples were collected at approximate depths of 2.5, 5.0, 8.0, 10.0, 15.0, and 17.0 feet bgs. Each sample tube was sealed with Teflon and plastic caps, labeled, and placed on ice in a cooler for delivery to the analytical laboratory under chain of custody procedures. A total of four soil samples from each boring were analyzed for the chemical parameters discussed below, at a State of California certified analytical laboratory. The other samples were held pending results of the initial round of analyses.

Upon completion, the boreholes were backfilled with cement grout in accordance with the requirements of the Santa Clara Valley Water District (SCVWD). The soil cuttings from the borings were collected in 55-gallon drums, which were stored temporarily at the site, tested, and eventually transported off-site for proper disposal.

## SUBSURFACE CONDITIONS

The site is in Cupertino, which is underlain by alluvial sediment deposited from the Santa Cruz Mountains. These alluvial fan deposits are typically coarse grained with large amounts of gravel deposits.

The surface material encountered in the borings consists of 3.5 to 6 inches of asphalt concrete (AC) and aggregate base (AB). Beneath the pavement section, the upper 2.5 to 6.5 feet consists of very dense sand with clay and gravel and hard sandy clay with varying amounts of gravel. Below these depths are medium dense to very dense sand and gravel layers with varying amounts of silt and clay interbedded with 3.5 to 7 feet thick layers of very stiff to hard sandy clay, sandy clay with gravel, and clay with gravel to the maximum explored depth of 46.5 feet.

During the investigation, groundwater was not encountered while drilling the three borings. The California Geological Survey, as part of their Seismic Hazards Zone Report (Cupertino Quadrangle) reported the historic high groundwater level in this area as approximately 50 feet bgs.

## ANALYTICAL TESTING

A total of twelve soil samples were submitted to McCampbell Analytical, Inc. a state-certified laboratory in Pittsburg, California. The chemical analytical schedule was chosen to satisfy soil profiling scenarios generally accepted by landfills. The soil samples were analyzed for some or all of the following: total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs), California assessment metals (CAM) 17 metals, and leaking underground fuel tank (LUFT) 5 metals.

## ANALYTICAL RESULTS

The soil analytical results are presented in Tables 1 and 2 and the certified laboratory reports and chain-of-custody records are presented in Appendix B.

Soil samples analyzed for metals were initially compared to total threshold limit concentration (TTLC) criteria. Selected soil samples equal to or exceeding the soluble threshold limit concentration (STLC) were additionally analyzed for STLC by California waste extraction test (WET) method based on their initial total metal concentrations. The STLC analyses were run to assess if metal concentrations in soil were at State of California hazardous waste levels.

### Non-Metal Compounds

Soil analytical results for parameters other than metals are summarized in Table 1. TPHd was detected at or above the laboratory reporting limit (1 milligram per kilogram (mg/kg)) in two of the twelve samples analyzed at concentrations of 1.2 mg/kg and 4.4 mg/kg. TPHmo was detected at or above the laboratory reporting limit (5 mg/kg) in two of the twelve samples analyzed at concentrations of 8.2 mg/kg and 17 mg/kg. TPHg was not detected above the laboratory reporting limit (1 mg/kg) in any of the twelve samples analyzed.

No VOCs, SVOCs, PCBs, or OCPS were detected above laboratory reporting limits in any of the samples analyzed.

### Metals

The metal analytical results are summarized in Table 2. Total lead was detected at or above the laboratory reporting limit in all twelve of the samples analyzed at concentrations ranging from 3.9 mg/kg to 17 mg/kg (Table 2). Total chromium was detected in each of the twelve samples analyzed at concentrations ranging from 26 mg/kg to 81 mg/kg (Table 2). Total chromium was detected at concentrations above 50 mg/kg, but below 1000 mg/kg, in nine of the twelve samples analyzed. Each of these samples was subsequently run for STLC chromium to determine soluble chromium levels. STLC chromium was detected at or above the laboratory reporting limit in three of the nine samples analyzed at concentrations ranging from 0.057 milligrams per liter (mg/L) to 0.22 mg/L. None of three soil samples exceeded the State of California hazardous waste criteria of 5 mg/L.

The remaining metal concentrations were within normal[1] background ranges found in the western United States.

Based on the analytical results from the chemical analyses of soil samples from the exploratory borings, none of the material contains elevated metals at concentrations exceeding State of California or Federal hazardous waste levels.

[1] "U.S.G.S. Professional Paper 1270, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States," 1984.

## DISCUSSION

The site is northwest of the intersection of Stevens Creek Boulevard and Mary Avenue, across from DeAnza College. It is bound on the north and east side by Mary Avenue, Stevens Creek Boulevard to the south and an on-ramp onto Highway 85 to the west. It is currently The Oaks shopping center and is occupied by several one-story buildings and surrounding paved parking lots and landscaping. We understand that the proposed development is not yet planned, but that a mid- to high-rise building with one to three basement levels is being considered.

The site is in Cupertino, which is underlain by alluvial sediment deposited from the Santa Cruz Mountains. These alluvial fan deposits are typically coarse grained with large amounts of gravel deposits.

The surface material encountered in the borings consists of 3.5 to 6 inches of AC and AB. Beneath the pavement section, the upper 2.5 to 6.5 feet consists of very dense sand with clay and gravel and hard sandy clay with varying amounts of gravel. Below these depths are medium dense to very dense sand and gravel layers with varying amounts of silt and clay interbedded with 3.5 to 7 feet thick layers of very stiff to hard sandy clay, sandy clay with gravel, and clay with gravel to the maximum explored depth of 46.5 feet.

During the investigation, groundwater was not encountered while drilling the three borings. The California Geological Survey, as part of their Seismic Hazards Zone Report (Cupertino Quadrangle) reported the historic high groundwater level in this area as approximately 50 feet bgs.

Based on the analytical results from this limited ESC, none of the material at the Site contains elevated concentrations exceeding State of California or Federal hazardous waste levels. Therefore, material removed from the site during excavation activities will most likely be disposed of as unrestricted waste. If contaminated or hazardous material is encountered during construction, a soil management plan (SMP) and a health and safety (H&S) plan (prepared by others) will be required. The SMP would provide recommended measures to mitigate the long-term environmental or health and safety risks caused by the presence of hazardous materials in the soil. The SMP would also contain contingency plans to be implemented during soil excavation if unanticipated hazardous materials are encountered. The H&S plan would outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction. Based on the results of this limited ESC, no contaminated or hazardous material was encountered; therefore, no SMP is required at this time.

## LIMITATIONS

Descriptions of specific field activities and historical events are based on our observations and on information provided by others. The opinions and information presented in this report apply to Site conditions and the information that was available at the time the work was performed and do not apply to changes of which we are not aware or have not had the opportunity to evaluate. Langan makes no guarantees or warranties with respect to the accuracy or completeness of this information.

We appreciate the opportunity of being of service to you on this project. If you have any questions or require additional information, please call.

Sincerely yours,
**Langan Treadwell Rollo**

Adam Brown
Senior Staff Geologist

Peter J. Cusack
Senior Associate/VP

Attachments

770619001.01 PJC

# TABLES

# Table 1
## Soil Analytical Results for Non-Metals
## The Oaks
## Cupertino, California

| Sample ID | Depth (feet) | Date Sample | TPHg | TPHd | TPHmo | OCPs | PCBs | VOCs | SVOCs |
|---|---|---|---|---|---|---|---|---|---|
| | | | (mg/kg) | | | | | | |
| B-1-2.5 | 2.5 | 10-02-2014 | < 1.0 | < 1.0 | < 5.0 | ND | ND | -- | -- |
| B-1-5.5 | 5.5 | 10-02-2014 | < 1.0 | 4.4 | 17 | -- | -- | ND | ND |
| B-1-10.5 | 10.5 | 10-02-2014 | < 1.0 | < 1.0 | < 5.0 | -- | -- | -- | -- |
| B-1-17.5 | 17.5 | 10-02-2014 | < 1.0 | < 1.0 | <5.0 | -- | -- | -- | -- |
| B-2-3.0 | 3.0 | 10-02-2014 | < 1.0 | < 1.0 | < 5.0 | ND | ND | -- | -- |
| B-2-5.0 | 5.0 | 10-02-2014 | < 1.0 | 1.2 | 8.2 | -- | -- | ND | ND |
| B-2-10.5 | 10.5 | 10-02-2014 | < 1.0 | < 1.0 | < 5.0 | -- | -- | -- | -- |
| B-2-15.5 | 15.5 | 10-02-2014 | < 1.0 | < 1.0 | < 5.0 | -- | -- | -- | -- |
| B-3-3.0 | 3.0 | 10-03-2014 | < 1.0 | < 1.0 | < 5.0 | ND | ND | -- | -- |
| B-3-5.5 | 5.5 | 10-03-2014 | < 1.0 | < 1.0 | < 5.0 | -- | -- | -- | -- |
| B-3-8.0 | 8.0 | 10-03-2014 | < 1.0 | < 1.0 | < 5.0 | -- | -- | -- | -- |
| B-3-15.5 | 15.5 | 10-03-2014 | < 1.0 | < 1.0 | <5.0 | -- | -- | ND | ND |

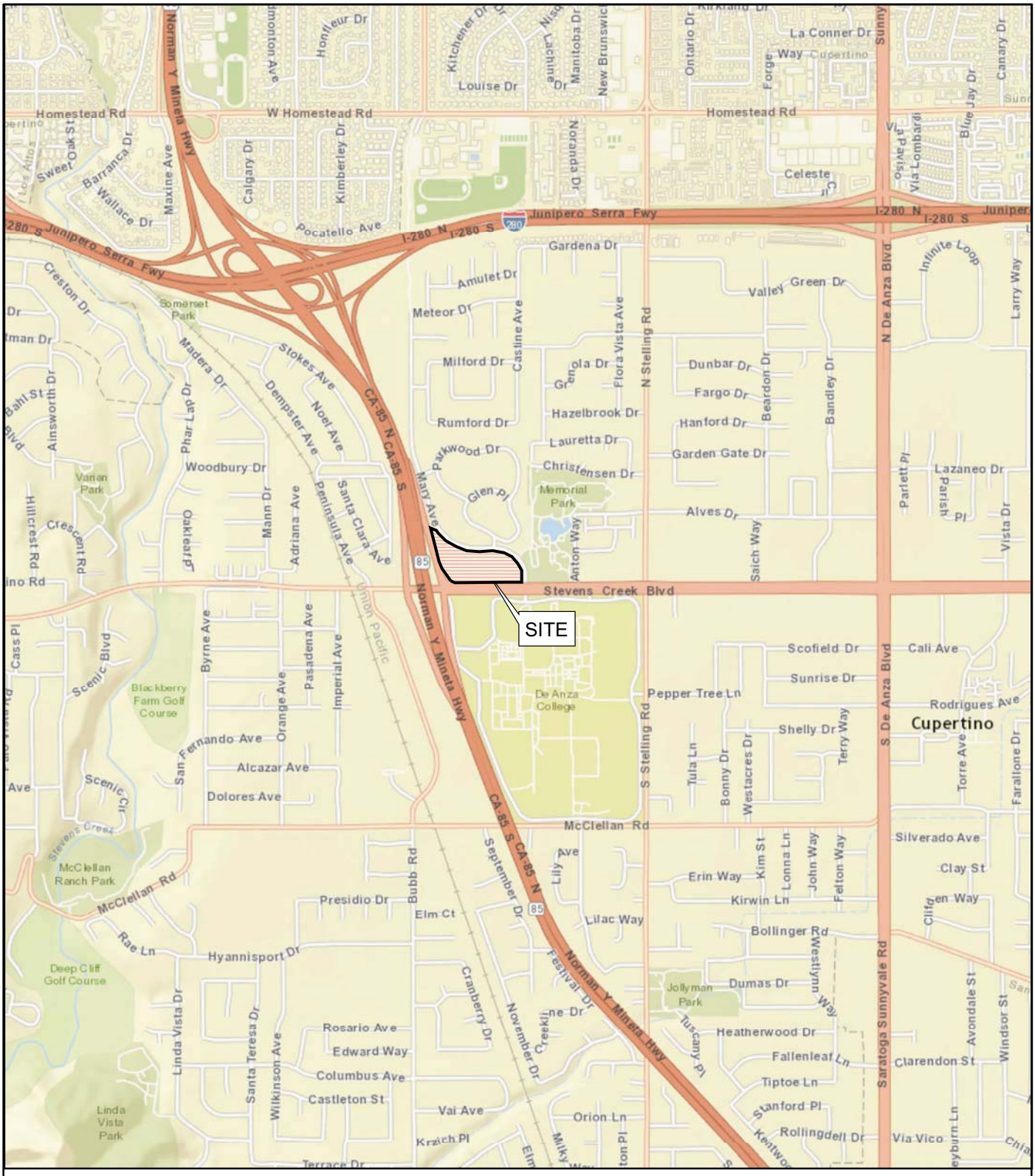
Notes:
mg/kg - milligrams per kilograms
TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015M
TPHd - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015M
TPHmo - Total Petroleum Hydrocarbons as Motor Oil Range, EPA Method 8015M
VOCs - Volatile Organics, EPA Method SW8260B
SVOCs - Semi-Volatile Organics, EPA Method SW8270C
PCBs - Polychlorinated Biphenyls, EPA Method 8081
OCPs - Organochlorine Pesticides, EPA Method 8081
ND - Not detected at or above the laboratory reporting limit
< 1.0 - Analyte was not detected above the laboratory reporting limit (1.0 mg/kg)
-- Not analyzed or criteria not established

**Table 2**
**Soil Analytical Results for Metals**
**The Oaks**
**Cupertino, California**

| Sample ID | Depth (feet) | Date Sampled | Antimony | Arsenic | Barium | Beryllium | Cadmium | Chromium | STLC Chromium | Cobalt | Copper | Lead | Mercury | Molybdenum | Nickel | Selenium | Silver | Thallium | Vanadium | Zinc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (mg/kg) | | | | | | (mg/L) | (mg/kg) | | | | | | | | | | |
| B-1-2.5 | 2.5 | 10-02-2014 | < 0.5 | 4.8 | 100 | 0.54 | < 0.25 | 57 | 0.11 | 17 | 36 | 5.7 | 0.17 | 1.2 | 59 | < 0.5 | < 0.5 | < 0.5 | 78 | 57 |
| B-1-5.5 | 5.5 | 10-02-2014 | -- | -- | -- | -- | < 0.25 | 69 | 0.22 | -- | -- | 17 | -- | -- | 60 | -- | -- | -- | -- | 62 |
| B-1-10.5 | 10.5 | 10-02-2014 | < 0.5 | 4.8 | 90 | < 0.5 | < 0.25 | 81 | < 0.05 | 15 | 36 | 6.1 | 0.066 | 0.88 | 89 | < 0.5 | < 0.5 | < 0.5 | 68 | 54 |
| B-1-17.5 | 17.5 | 10-02-2014 | -- | -- | -- | -- | < 0.25 | 56 | < 0.05 | -- | -- | 6.8 | -- | -- | 68 | -- | -- | -- | -- | 66 |
| B-2-3.0 | 3.0 | 10-02-2014 | -- | -- | -- | -- | < 0.25 | 65 | 0.057 | -- | -- | 6.8 | -- | -- | 62 | -- | -- | -- | -- | 59 |
| B-2-5.0 | 5.0 | 10-02-2014 | -- | -- | -- | -- | < 0.25 | 61 | < 0.05 | -- | -- | 7.2 | -- | -- | 72 | -- | -- | -- | -- | 63 |
| B-2-10.5 | 10.5 | 10-02-2014 | < 0.5 | 4.2 | 99 | < 0.5 | < 0.25 | 60 | < 0.05 | 15 | 38 | 6.2 | 0.11 | < 0.5 | 67 | < 0.5 | < 0.5 | < 0.5 | 62 | 64 |
| B-2-15.5 | 15.5 | 10-02-2014 | -- | -- | -- | -- | < 0.25 | 26 | -- | -- | -- | 5.3 | -- | -- | 28 | -- | -- | -- | -- | 38 |
| B-3-3.0 | 3.0 | 10-03-2014 | 0.88 | 8.1 | 230 | 0.79 | < 0.25 | 73 | < 0.064 | 19 | 40 | 12 | 0.13 | 0.91 | 82 | < 1.0 | < 0.5 | < 0.5 | 62 | 71 |
| B-3-5.5 | 5.5 | 10-03-2014 | -- | -- | -- | -- | < 0.25 | 42 | -- | -- | -- | 4.0 | -- | -- | 42 | -- | -- | -- | -- | 57 |
| B-3-8.0 | 8.0 | 10-03-2014 | < 0.5 | 4.1 | 100 | < 0.5 | < 0.25 | 50 | < 0.1 | 11 | 33 | 5.7 | 0.11 | < 0.5 | 48 | < 0.5 | < 0.5 | < 0.5 | 55 | 53 |
| B-3-15.5 | 15.5 | 10-03-2014 | < 0.5 | 3.4 | 83 | < 0.5 | < 0.25 | 44 | -- | 11 | 29 | 3.9 | 0.089 | < 0.5 | 43 | < 0.5 | < 0.5 | < 0.5 | 57 | 42 |
| Hazardous Waste Criteria | | | | | | | | | | | | | | | | | | | | |
| TTLC | (mg/kg) | | 500 | 500 | 10,000 | 75 | 100 | 2,500 | | 8,000 | 2,500 | 1,000 | 20 | 3,500 | 2,000 | 100 | 500 | 700 | 2,400 | 5,000 |
| STLC | (mg/L) | | 15 | 5 | 100 | 0.75 | 1 | 5 | | 80 | 25 | -- | 0.2 | 350 | 20 | 1 | 5 | 7 | 24 | 250 |
| TCLP | (mg/L) | | -- | -- | -- | -- | -- | -- | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:
mg/kg - milligrams per kilograms
mg/L - milligrams per liter
< 0.5 - Analyte was not detected above the laboratory reporting limit (0.5 mg/kg)
-- Not analyzed or criteria not established
TTLC - California Total Threshold Limit Concentration - State hazardous waste criterion
STLC - California Soluble Threshold Limit Concentration
TCLP - Federal Toxicity Characteristic Leaching Procedure

# FIGURES




**NOTES:**

0 1,000 2,000

Feet

N
W E
S

World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.
Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN.

**THE OAKS**
Cupertino, California

# SITE LOCATION MAP

LANGAN TREADWELL ROLLO

| Date | Project No. | Figure |
|---|---|---|
| 10/09/14 | 770619001 | 1 |

Path: \\langan.com\data\OA\data4\750612403\ArcGIS\ArcMap_Documents\Site Location Map.mxd User: cyoung




**EXPLANATION**

B-1 Approximate location of boring by Langan Treadwell Rollo, October 2014

Approximate site boundary

0 150 Feet

Approximate scale

Reference: Esri, Digital Globe, GeoEye, i-cubed, USDA, USGS AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and GIS User Community.

**THE OAKS**
Cupertino, California

**SITE PLAN**

**LANGAN TREADWELL ROLLO**

Date 10/09/14 | Project No. 770619001 | Figure 2

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# APPENDIX A

# BORING LOGS

PROJECT: **THE OAKS**
Cupertino, California

# Log of Boring B-1



Boring location: See Site Plan, Figure 2 | Logged by: M. Lattin

Date started: 10/2/14 | Date finished: 10/2/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION (Ground Surface Elevation: 290.5 feet[2]) | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | 1.5 inches asphalt concrete (AC) | | | | | | |
| 1 | | | | | CL | 2 inches aggregate base (AB) | | | | | | |
| 2 | BULK | | | | | SANDY CLAY with GRAVEL (CL)<br>red-brown, dry, fine gravel up to 3/4 inch in diameter | | | | | | |
| 3 | S&H | | 24<br>36<br>29 | 46 | | | | | | | | |
| 4 | BULK | | | | CL | SANDY CLAY with GRAVEL (CL)<br>red-brown to light brown, hard, dry, fine- to medium-grained sand, fine- to coarse subangular gravel up to 2 1/2 inches in diameter | | | | | 5.1 | 109 |
| 5 | | | 31 | | | | | | | | | |
| 6 | S&H | | 49<br>38 | 61 | | increase in clay content | | | | | | |
| 7 | | | 29 | | CL | SANDY CLAY (CL)<br>brown, hard, dry, fine-grained sand | | | | | | |
| 8 | S&H | | 60<br>50/ 4" | 77/ 10" | | | | | | | | |
| 9 | | | | | | SAND with CLAY and GRAVEL (SP-SC)<br>brown, very dense, dry, fine- to coarse-grained sand, fine- to coarse subangular to angular gravel up to 3 inches in diameter, trace fragmented cobbles | | | | | | |
| 10 | | | 12 | | | | | | | | | |
| 11 | S&H | | 40<br>50/ 3" | 63/ 9" | | | | | | | 3.7 | 109 |
| 12 | | | | | SP-SC | increase in gravel content and angularity | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | 26 | | | | | | | | | |
| 16 | SPT | | 40<br>21 | 73 | | | | | | | | |
| 17 | S&H | | 14<br>21<br>46 | 47 | SP | SAND (SP)<br>brown, very dense, dry, fine-grained, trace fine angular gravel | | | | | | |
| 18 | | | | | | CLAY with GRAVEL (CL)<br>brown, hard, dry, fine- to coarse angular gravel up to 1 inch in diameter, some fine- to coarse-grained sand | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | S&H | | 34<br>70/ 6" | 49/ 6" | | | | | | | | |
| 21 | | | | | CL | increase in gravel size; up to 2.5 inches in diameter to fragmented cobbles | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | decrease in gravel size up to 1 inch in diameter | | | | | | |
| 25 | S&H | | 47<br>65/ 6" | 46/ 6" | | SAND with GRAVEL (SP)<br>brown and yellow, very dense, dry, fine- to coarse-grained sand, fine- to coarse subangular gravel up to 1 inch in diameter | | | | | 5.3 | 107 |
| 26 | | | | | | | | | | | | |
| 27 | | | | | SP | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |

LANGAN TREADWELL ROLLO

Project No.: 770619001 | Figure: A-1a

TEST GEOTECH LOG 770619001.GPJ TR.GDT 11/12/14

PROJECT: **THE OAKS**
Cupertino, California

# Log of Boring B-1



| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | SPT | | 21<br>24<br>31 | 66 | SP | SAND with GRAVEL (SP) (continued) | | | | | | |
| 32 | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | |
| 35 | | | | | | SILTY SAND (SM)<br>brown, medium dense, moist | | | | | | |
| 36 | SPT | | 5<br>5<br>6 | 13 | | | | | | | | |
| 37 | | | | | SM | | | | | | | |
| 38 | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | |
| 41 | S&H | | 9<br>12<br>15 | 19 | | CLAYEY SAND with GRAVEL (SC)<br>red-brown, medium dense, moist, fine- to coarse-grained sand, fine gravel up to 3/4 inch in diameter | | | | | 12.1 | 112 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | SC | | | | | | | |
| 44 | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | S&H | | 10<br>14<br>31 | 32 | | | | | | | | |
| | | | | | SW | SAND with GRAVEL (SW)<br>brown, dense, moist, fine- to coarse-grained sand, fine rounded to subrounded gravel up to 1/2 inch in diameter | | | | | | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | |
| 59 | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | |

Boring terminated at a depth of 46.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
[2] Elevations are based on "Topographic Boundary and Utility Survey" by Kier and Wright, dated March 2003.

LANGAN TREADWELL ROLLO

Project No.: 770619001
Figure: A-1b

TEST GEOTECH LOG 770619001.GPJ TR.GDT 11/12/14

PROJECT: **THE OAKS**
Cupertino, California

# Log of Boring B-2



Boring location: See Site Plan, Figure 2 | Logged by: M. Lattin

Date started: 10/2/14 | Date finished: 10/2/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Ground Surface Elevation: 296.0 feet[2]

| DEPTH (feet) | Sampler Type | Sample | Blows/ 6" | SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2 inches asphalt concrete (AC) | | | | | | |
| | | | | | | 4 inches aggregate base (AB) | | | | | | |
| 1 | BULK | | | | SP-SC | SAND with CLAY and GRAVEL (SP-SC)<br>brown, very dense, dry, fine- to coarse-grained sand, fine- to coarse gravel up to 1 inch in diameter, trace cobbles | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | S&H | | 19<br>29<br>44 | 51 | | | | | | | | |
| 4 | S&H | | 50/ 2" | 35/ 2" | | decrease in gravel content | | | | | | |
| 5 | BULK | | | | CL | SANDY CLAY (CL)<br>brown, hard, dry, fine- to coarse-grained sand, trace fine gravel | | | | | | |
| 6 | SPT | | 10<br>20<br>25 | 54 | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | SPT | | 12<br>16<br>22 | 46 | SP-SC | SAND with CLAY and GRAVEL (SP-SC)<br>brown, dense, dry, fine- to coarse-grained sand, fine gravel | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | SP | SAND with GRAVEL (SP)<br>brown, very dense, dry, fine to coarse-grained sand, fine- to coarse subrounded to angular gravel up to 3 inches in diameter, trace fragmented cobbles | | | | | | |
| 11 | S&H | | 30<br>36<br>44 | 56 | | | | | | | 3.0 | 115 |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | S&H | | 20<br>28<br>20 | 34 | | dense, increase in gravel content, subrounded to subangular gravel | | | | | 3.6 | 111 |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | CL | SANDY CLAY with GRAVEL (CL)<br>brown, hard, moist, fine- to coarse-grained sand, fine angular and fragmented gravel up to 1/2 inch in diameter | | | | | | |
| 20 | | | 8 | | | | | | | | | |
| 21 | S&H | | 20<br>34 | 38 | | | | | | | | |
| 22 | | | | | GP-GC | GRAVEL with CLAY and SAND (SP-SC)<br>brown, dense, moist, fine gravel up 1/3 inch diameter, fine- to coarse sand | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | CL | SANDY CLAY (CL)<br>brown, very stiff, moist, fine-grained sand | | | | | | |
| 25 | | | 8 | | | | | | | | | |
| 26 | S&H | | 12<br>12 | 17 | | | | | | | 20.7 | 94 |
| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | ML | SANDY SILT (ML)<br>brown, very stiff, moist | | | | | | |
| 30 | | | | | | | | | | | | |

LABORATORY TEST DATA

LANGAN TREADWELL ROLLO

Project No.: 770619001 | Figure: A-2a

TEST GEOTECH LOG 770619001.GPJ TR.GDT 11/12/14

PROJECT: **THE OAKS**
Cupertino, California

# Log of Boring B-2



| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | S&H | | 5<br>10<br>14 | 17 | | SANDY SILT (ML) (continued) | | | | | | |
| 32 | | | | | SC | CLAYEY SAND (SC)<br>brown, medium dense, moist, fine- to coarse-grained sand, some fine gravel up to 1/4 inch in diameter | | | | | 13.5 | 110 |
| 33 | | | | | | | | | | | | |
| 34 | | | | | SP | SAND with GRAVEL (SP)<br>brown, medium dense, moist, fine- to coarse-grained sand, fine angular gravel up to 1/2 inch in diameter | | | | | | |
| 35 | | | 13 | | | | | | | | | |
| 36 | S&H | | 19<br>18 | 26 | | | | | | | | |
| 37 | | | | | SM | SILTY SAND (SM)<br>brown, medium dense, moist, some fine subrounded gravel | | | | | | |
| 38 | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
| 40 | | | 21 | | | SAND with GRAVEL (SP)<br>brown, dense, moist, fine- to coarse-grained sand, fine- to coarse subrounded gravel up to 1 1/2 inches in diameter | | | | | | |
| 41 | S&H | | 28<br>31 | 41 | SP | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | |
| 45 | | | 15 | | SP | SAND (SP)<br>brown, medium dense, moist, fine- to coarse-grained sand, some fine rounded gravel up to 3/4 inch in diameter | | | | | | |
| 46 | S&H | | 20<br>22 | 29 | | | | | | | 4.2 | 109 |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | |
| 59 | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | |

Boring terminated at a depth of 46.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
[2] Elevations are based on "Topographic Boundary and Utility Survey" by Kier and Wright, dated March 2003.

LANGAN TREADWELL ROLLO

Project No.: 770619001
Figure: A-2b

TEST GEOTECH LOG 770619001.GPJ TR.GDT 11/12/14

PROJECT: **THE OAKS**
Cupertino, California

# Log of Boring B-3



Boring location: See Site Plan, Figure 2 | Logged by: M. Lattin

Date started: 10/3/14 | Date finished: 10/3/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION (Ground Surface Elevation: 300.5 feet[2]) | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | 2 inches asphalt concrete (AC) | | | | | | |
| 0 | | | | | | 4 inches aggregate base (AB) | | | | | | |
| 2 | BULK | | | | CL | SANDY CLAY (CL)<br>red-brown, hard, dry, fine-grained sand<br>LL = 23, PI = 9, see Figure B-1 | | | | | | |
| 3 | S&H | | 26<br>27<br>46 | 51 | | trace fine gravel up to 3/4 inch in diameter | | | | | | |
| 4 | BULK | | | | | SAND with CLAY and GRAVEL (SP-SC)<br>brown, dense, dry, fine- to coarse-grained sand, fine- to coarse subangular to angular gravel up to 1 3/4 inch in diameter | | | | | | |
| 5 | | | 19 | | | | | | | | | |
| 6 | S&H | | 25<br>33 | 41 | | | | | | | 6.9 | 105 |
| 8 | S&H | | 20<br>34<br>35 | 48 | SP-SC | | | | | | | |
| 10 | S&H | | 18<br>26<br>34 | 44 | | dark brown, coarse gravel and fragmented cobbles up to 3 inches in diameter | | | | | 5.6 | 109 |
| 13 | | | | | | SAND with SILT and GRAVEL (SP-SM)<br>brown, very dense, dry, fine- to coarse-grained subrounded to angular gravel up to 2 3/4 inches in diameter, fine- to coarse-grained sand<br>Sieve Analysis, see Figure B-2 | | | | | | |
| 15 | S&H | | 29<br>44<br>43 | 61 | | | | | | 8.7 | 3.8 | |
| 17 | | | | | SP-SM | | | | | | | |
| 20 | S&H | | 28<br>60/ 6" | 42/ 6" | | increase in sand content | | | | | | |
| 21 | SPT | | 17<br>15<br>14 | 35 | | | | | | | | |
| 22 | | | | | SM | SILTY SAND (SM)<br>brown, dense, dry | | | | | | |
| 23 | | | | | | SAND with GRAVEL (SP)<br>brown, very dense, moist, fine- to coarse sand, fine- to coarse subrounded gravel up to 2 inches in diameter, with interbedded thin lenses of silt | | | | | | |
| 25 | S&H | | 29<br>44<br>48 | 64 | SP | | | | | | | |
| 30 | | | | | | | | | | | | |

LANGAN TREADWELL ROLLO

Project No.: 770619001 | Figure: A-3a

TEST GEOTECH LOG 770619001.GPJ TR.GDT 11/12/14

PROJECT: **THE OAKS**
Cupertino, California

# Log of Boring B-3



| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | S&H | | 48<br>62<br>34 | 67 | SP | SAND with GRAVEL (SP) (continued)<br>rounded to subrounded fine gravel up to 1/2 inch in diameter | | | | | 9.1 | 108 |
| 35 | SPT | | 5<br>9<br>12 | 25 | CL | SANDY CLAY (CL)<br>brown, very stiff, moist | | | | | | |
| 40 | SPT | | 11<br>23<br>40 | 76 | SP | SAND with GRAVEL (SP)<br>brown, very dense, moist, fine- to coarse-grained sand, fine- to coarse subangular gravel up to 1 inch in diameter | | | | | | |
| 45 | SPT | | 4<br>6<br>11 | 20 | CL | SANDY CLAY (CL)<br>brown, very stiff, moist<br>LL = 28, PI = 11, see Figure B-1 | | | | | | |

Boring terminated at a depth of 46.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
[2] Elevations are based on "Topographic Boundary and Utility Survey" by Kier and Wright, dated March 2003.

LANGAN TREADWELL ROLLO

Project No.: 770619001
Figure: A-3b

TEST GEOTECH LOG 770619001.GPJ TR.GDT 11/12/14

## UNIFIED SOIL CLASSIFICATION SYSTEM

| Major Divisions | | Symbols | Typical Names |
|---|---|---|---|
| Coarse-Grained Soils (more than half of soil > no. 200 sieve size) | Gravels (More than half of coarse fraction > no. 4 sieve size) | GW | Well-graded gravels or gravel-sand mixtures, little or no fines |
| | | GP | Poorly-graded gravels or gravel-sand mixtures, little or no fines |
| | | GM | Silty gravels, gravel-sand-silt mixtures |
| | | GC | Clayey gravels, gravel-sand-clay mixtures |
| | Sands (More than half of coarse fraction < no. 4 sieve size) | SW | Well-graded sands or gravelly sands, little or no fines |
| | | SP | Poorly-graded sands or gravelly sands, little or no fines |
| | | SM | Silty sands, sand-silt mixtures |
| | | SC | Clayey sands, sand-clay mixtures |
| Fine -Grained Soils (more than half of soil < no. 200 sieve size) | Silts and Clays LL = < 50 | ML | Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts |
| | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays |
| | | OL | Organic silts and organic silt-clays of low plasticity |
| | Silts and Clays LL = > 50 | MH | Inorganic silts of high plasticity |
| | | CH | Inorganic clays of high plasticity, fat clays |
| | | OH | Organic silts and clays of high plasticity |
| Highly Organic Soils | | PT | Peat and other highly organic soils |

## GRAIN SIZE CHART

| Classification | Range of Grain Sizes | |
|---|---|---|
| | U.S. Standard Sieve Size | Grain Size in Millimeters |
| Boulders | Above 12" | Above 305 |
| Cobbles | 12" to 3" | 305 to 76.2 |
| Gravel | 3" to No. 4 | 76.2 to 4.76 |
| coarse | 3" to 3/4" | 76.2 to 19.1 |
| fine | 3/4" to No. 4 | 19.1 to 4.76 |
| Sand | No. 4 to No. 200 | 4.76 to 0.075 |
| coarse | No. 4 to No. 10 | 4.76 to 2.00 |
| medium | No. 10 to No. 40 | 2.00 to 0.420 |
| fine | No. 40 to No. 200 | 0.420 to 0.075 |
| Silt and Clay | Below No. 200 | Below 0.075 |

Unstabilized groundwater level

Stabilized groundwater level

## SAMPLE DESIGNATIONS/SYMBOLS



Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered



Classification sample taken with Standard Penetration Test sampler



Undisturbed sample taken with thin-walled tube



Disturbed sample



Sampling attempted with no recovery



Core sample



Analytical laboratory sample



Sample taken with Direct Push or Drive sampler

## SAMPLER TYPE

C Core barrel

CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter

D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube

O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube

S&H Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter

SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter

ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

**THE OAKS**
Cupertino, California

**CLASSIFICATION CHART**

LANGAN TREADWELL ROLLO

Date 10/09/14 | Project No. 770619001 | Figure A-4

# APPENDIX B

# CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY REPORTS

# McCampbell Analytical, Inc.

*"When Quality Counts"*

# Analytical Report

**WorkOrder:** 1410373

**Report Created for:** Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

**Project Contact:** Peter Cusack
**Project P.O.:**
**Project Name:** #770619001; The Oaks

**Project Received:** 10/09/2014

Analytical Report reviewed & approved for release on 10/16/2014 by:

*Question about your data?*

*Click here to email McCampbell*

Angela Rydelius,
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
NELAP: 4033ORELAP ♦ ELAP: 1644 ♦ ISO/IEC: 17025:2005 ♦ WSDE: C972-11 ♦ ADEC: UST-098 ♦ UCMR3

McCampbell Analytical, Inc.
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Glossary of Terms & Qualifier Definitions

**Client:** Treadwell & Rollo
**Project:** #770619001; The Oaks
**WorkOrder:** 1410373

## Glossary Abbreviation

| | |
|---|---|
| 95% Interval | 95% Confident Interval |
| DF | Dilution Factor |
| DUP | Duplicate |
| EDL | Estimated Detection Limit |
| ITEF | International Toxicity Equivalence Factor |
| LCS | Laboratory Control Sample |
| MB | Method Blank |
| MB % Rec | % Recovery of Surrogate in Method Blank, if applicable |
| MDL | Method Detection Limit |
| ML | Minimum Level of Quantitation |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| ND | Not detected at or above the indicated MDL or RL |
| NR | Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content. |
| PF | Prep Factor |
| RD | Relative Difference |
| RL | Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.) |
| RPD | Relative Percent Deviation |
| RRT | Relative Retention Time |
| SPK Val | Spike Value |
| SPKRef Val | Spike Reference Value |
| TEQ | Toxicity Equivalence |

## Analytical Qualifiers

| | |
|---|---|
| e2 | diesel range compounds are significant; no recognizable pattern |
| e7 | oil range compounds are significant |

## Quality Control Qualifiers

| | |
|---|---|
| F1 | MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch. |
| F2 | LCS recovery for this compound is outside of acceptance limits. |

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8081A/8082 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

## Organochlorine Pesticides (Basic Target List) + PCBs

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-2.5** | **1410373-001A** | **Soil** | **10/02/2014** | **GC23** | **96298** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Aldrin | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| a-BHC | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| b-BHC | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| d-BHC | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| g-BHC | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Chlordane (Technical) | ND | 0.025 | 1 | 10/11/2014 02:25 |
| a-Chlordane | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| g-Chlordane | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| p,p-DDD | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| p,p-DDE | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| p,p-DDT | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Dieldrin | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Endosulfan I | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Endosulfan II | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Endosulfan sulfate | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Endrin | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Endrin aldehyde | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Endrin ketone | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Heptachlor | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Heptachlor epoxide | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Hexachlorobenzene | ND | 0.010 | 1 | 10/11/2014 02:25 |
| Hexachlorocyclopentadiene | ND | 0.020 | 1 | 10/11/2014 02:25 |
| Methoxychlor | ND | 0.0010 | 1 | 10/11/2014 02:25 |
| Toxaphene | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1016 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1221 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1232 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1242 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1248 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1254 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| Aroclor1260 | ND | 0.050 | 1 | 10/11/2014 02:25 |
| PCBs, total | ND | 0.050 | 1 | 10/11/2014 02:25 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Decachlorobiphenyl | 106 | 70-130 | 10/11/2014 02:25 |

Analyst(s): CK

*(Cont.)*

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1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8081A/8082 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

## Organochlorine Pesticides (Basic Target List) + PCBs

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-3.0** | **1410373-007A** | **Soil** | **10/02/2014** | **GC23** | **96298** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Aldrin | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| a-BHC | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| b-BHC | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| d-BHC | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| g-BHC | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Chlordane (Technical) | ND | 0.025 | 1 | 10/10/2014 23:55 |
| a-Chlordane | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| g-Chlordane | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| p,p-DDD | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| p,p-DDE | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| p,p-DDT | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Dieldrin | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Endosulfan I | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Endosulfan II | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Endosulfan sulfate | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Endrin | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Endrin aldehyde | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Endrin ketone | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Heptachlor | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Heptachlor epoxide | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Hexachlorobenzene | ND | 0.010 | 1 | 10/10/2014 23:55 |
| Hexachlorocyclopentadiene | ND | 0.020 | 1 | 10/10/2014 23:55 |
| Methoxychlor | ND | 0.0010 | 1 | 10/10/2014 23:55 |
| Toxaphene | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1016 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1221 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1232 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1242 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1248 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1254 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| Aroclor1260 | ND | 0.050 | 1 | 10/10/2014 23:55 |
| PCBs, total | ND | 0.050 | 1 | 10/10/2014 23:55 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Decachlorobiphenyl | 120 | 70-130 | 10/10/2014 23:55 |

Analyst(s): CK

*(Cont.)*

CDPH ELAP 1644 ♦ NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8081A/8082 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

## Organochlorine Pesticides (Basic Target List) + PCBs

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-3.0** | **1410373-012A** | **Soil** | **10/03/2014** | **GC23** | **96298** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Aldrin | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| a-BHC | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| b-BHC | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| d-BHC | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| g-BHC | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Chlordane (Technical) | ND | 0.025 | 1 | 10/11/2014 03:03 |
| a-Chlordane | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| g-Chlordane | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| p,p-DDD | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| p,p-DDE | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| p,p-DDT | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Dieldrin | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Endosulfan I | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Endosulfan II | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Endosulfan sulfate | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Endrin | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Endrin aldehyde | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Endrin ketone | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Heptachlor | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Heptachlor epoxide | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Hexachlorobenzene | ND | 0.010 | 1 | 10/11/2014 03:03 |
| Hexachlorocyclopentadiene | ND | 0.020 | 1 | 10/11/2014 03:03 |
| Methoxychlor | ND | 0.0010 | 1 | 10/11/2014 03:03 |
| Toxaphene | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1016 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1221 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1232 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1242 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1248 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1254 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| Aroclor1260 | ND | 0.050 | 1 | 10/11/2014 03:03 |
| PCBs, total | ND | 0.050 | 1 | 10/11/2014 03:03 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Decachlorobiphenyl | 115 | 70-130 | 10/11/2014 03:03 |

Analyst(s): CK

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| B-1-5.5 | 1410373-002A | Soil | 10/02/2014 | GC10 | 96312 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 0.10 | 1 | 10/11/2014 17:26 |
| tert-Amyl methyl ether (TAME) | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Benzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Bromobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Bromochloromethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Bromodichloromethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Bromoform | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Bromomethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 2-Butanone (MEK) | ND | 0.020 | 1 | 10/11/2014 17:26 |
| t-Butyl alcohol (TBA) | ND | 0.050 | 1 | 10/11/2014 17:26 |
| n-Butyl benzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| sec-Butyl benzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| tert-Butyl benzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Carbon Disulfide | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Carbon Tetrachloride | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Chlorobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Chloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Chloroform | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Chloromethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 2-Chlorotoluene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 4-Chlorotoluene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Dibromochloromethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2-Dibromo-3-chloropropane | ND | 0.0040 | 1 | 10/11/2014 17:26 |
| 1,2-Dibromoethane (EDB) | ND | 0.0040 | 1 | 10/11/2014 17:26 |
| Dibromomethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2-Dichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,3-Dichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,4-Dichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Dichlorodifluoromethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,1-Dichloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 0.0040 | 1 | 10/11/2014 17:26 |
| 1,1-Dichloroethene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| cis-1,2-Dichloroethene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| trans-1,2-Dichloroethene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2-Dichloropropane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,3-Dichloropropane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 2,2-Dichloropropane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,1-Dichloropropene | ND | 0.0050 | 1 | 10/11/2014 17:26 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC10** | **96312** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| trans-1,3-Dichloropropene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Diisopropyl ether (DIPE) | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Ethylbenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Ethyl tert-butyl ether (ETBE) | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Freon 113 | ND | 0.10 | 1 | 10/11/2014 17:26 |
| Hexachlorobutadiene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Hexachloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 2-Hexanone | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Isopropylbenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 4-Isopropyl toluene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Methyl-t-butyl ether (MTBE) | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Methylene chloride | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 4-Methyl-2-pentanone (MIBK) | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Naphthalene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| n-Propyl benzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Styrene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,1,2,2-Tetrachloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Tetrachloroethene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Toluene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,1,1-Trichloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,1,2-Trichloroethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Trichloroethene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Trichlorofluoromethane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2,3-Trichloropropane | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Vinyl Chloride | ND | 0.0050 | 1 | 10/11/2014 17:26 |
| Xylenes, Total | ND | 0.0050 | 1 | 10/11/2014 17:26 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC10** | **96312** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Surrogates | REC (%) | Limits | | |
| Dibromofluoromethane | 94 | 70-130 | | 10/11/2014 17:26 |
| Toluene-d8 | 99 | 70-130 | | 10/11/2014 17:26 |
| 4-BFB | 104 | 70-130 | | 10/11/2014 17:26 |

Analyst(s): KF

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| B-2-5.0 | 1410373-008A | Soil | 10/02/2014 | GC10 | 96312 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 0.10 | 1 | 10/11/2014 18:22 |
| tert-Amyl methyl ether (TAME) | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Benzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Bromobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Bromochloromethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Bromodichloromethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Bromoform | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Bromomethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 2-Butanone (MEK) | ND | 0.020 | 1 | 10/11/2014 18:22 |
| t-Butyl alcohol (TBA) | ND | 0.050 | 1 | 10/11/2014 18:22 |
| n-Butyl benzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| sec-Butyl benzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| tert-Butyl benzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Carbon Disulfide | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Carbon Tetrachloride | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Chlorobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Chloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Chloroform | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Chloromethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 2-Chlorotoluene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 4-Chlorotoluene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Dibromochloromethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2-Dibromo-3-chloropropane | ND | 0.0040 | 1 | 10/11/2014 18:22 |
| 1,2-Dibromoethane (EDB) | ND | 0.0040 | 1 | 10/11/2014 18:22 |
| Dibromomethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2-Dichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,3-Dichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,4-Dichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Dichlorodifluoromethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,1-Dichloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 0.0040 | 1 | 10/11/2014 18:22 |
| 1,1-Dichloroethene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| cis-1,2-Dichloroethene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| trans-1,2-Dichloroethene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2-Dichloropropane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,3-Dichloropropane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 2,2-Dichloropropane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,1-Dichloropropene | ND | 0.0050 | 1 | 10/11/2014 18:22 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil** | **10/02/2014** | **GC10** | **96312** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| trans-1,3-Dichloropropene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Diisopropyl ether (DIPE) | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Ethylbenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Ethyl tert-butyl ether (ETBE) | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Freon 113 | ND | 0.10 | 1 | 10/11/2014 18:22 |
| Hexachlorobutadiene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Hexachloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 2-Hexanone | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Isopropylbenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 4-Isopropyl toluene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Methyl-t-butyl ether (MTBE) | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Methylene chloride | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 4-Methyl-2-pentanone (MIBK) | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Naphthalene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| n-Propyl benzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Styrene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,1,2,2-Tetrachloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Tetrachloroethene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Toluene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,1,1-Trichloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,1,2-Trichloroethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Trichloroethene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Trichlorofluoromethane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2,3-Trichloropropane | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Vinyl Chloride | ND | 0.0050 | 1 | 10/11/2014 18:22 |
| Xylenes, Total | ND | 0.0050 | 1 | 10/11/2014 18:22 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil** | **10/02/2014** | **GC10** | **96312** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Surrogates | REC (%) | Limits | | |
| Dibromofluoromethane | 86 | 70-130 | | 10/11/2014 18:22 |
| Toluene-d8 | 93 | 70-130 | | 10/11/2014 18:22 |
| 4-BFB | 84 | 70-130 | | 10/11/2014 18:22 |

Analyst(s): KF

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| B-3-15.5 | 1410373-016A | Soil | 10/03/2014 | GC38 | 96312 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 0.10 | 1 | 10/15/2014 15:36 |
| tert-Amyl methyl ether (TAME) | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Benzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Bromobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Bromochloromethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Bromodichloromethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Bromoform | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Bromomethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 2-Butanone (MEK) | ND | 0.020 | 1 | 10/15/2014 15:36 |
| t-Butyl alcohol (TBA) | ND | 0.050 | 1 | 10/15/2014 15:36 |
| n-Butyl benzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| sec-Butyl benzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| tert-Butyl benzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Carbon Disulfide | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Carbon Tetrachloride | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Chlorobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Chloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Chloroform | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Chloromethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 2-Chlorotoluene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 4-Chlorotoluene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Dibromochloromethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2-Dibromo-3-chloropropane | ND | 0.0040 | 1 | 10/15/2014 15:36 |
| 1,2-Dibromoethane (EDB) | ND | 0.0040 | 1 | 10/15/2014 15:36 |
| Dibromomethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2-Dichlorobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,3-Dichlorobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,4-Dichlorobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Dichlorodifluoromethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,1-Dichloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 0.0040 | 1 | 10/15/2014 15:36 |
| 1,1-Dichloroethene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| cis-1,2-Dichloroethene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| trans-1,2-Dichloroethene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2-Dichloropropane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,3-Dichloropropane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 2,2-Dichloropropane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,1-Dichloropropene | ND | 0.0050 | 1 | 10/15/2014 15:36 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC38** | **96312** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| trans-1,3-Dichloropropene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Diisopropyl ether (DIPE) | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Ethylbenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Ethyl tert-butyl ether (ETBE) | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Freon 113 | ND | 0.10 | 1 | 10/15/2014 15:36 |
| Hexachlorobutadiene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Hexachloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 2-Hexanone | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Isopropylbenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 4-Isopropyl toluene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Methyl-t-butyl ether (MTBE) | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Methylene chloride | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 4-Methyl-2-pentanone (MIBK) | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Naphthalene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| n-Propyl benzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Styrene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,1,2,2-Tetrachloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Tetrachloroethene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Toluene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,1,1-Trichloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,1,2-Trichloroethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Trichloroethene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Trichlorofluoromethane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2,3-Trichloropropane | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Vinyl Chloride | ND | 0.0050 | 1 | 10/15/2014 15:36 |
| Xylenes, Total | ND | 0.0050 | 1 | 10/15/2014 15:36 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8260B |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC38** | **96312** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Surrogates | REC (%) | Limits | | |
| Dibromofluoromethane | 97 | 70-130 | | 10/15/2014 15:36 |
| Toluene-d8 | 106 | 70-130 | | 10/15/2014 15:36 |
| 4-BFB | 98 | 70-130 | | 10/15/2014 15:36 |

Analyst(s): AK

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC21** | **96361** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acenaphthene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Acenaphthylene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Acetochlor | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Anthracene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Benzidine | ND | 1.3 | 1 | 10/10/2014 21:25 |
| Benzo (a) anthracene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Benzo (b) fluoranthene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Benzo (k) fluoranthene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Benzo (g,h,i) perylene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Benzo (a) pyrene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Benzyl Alcohol | ND | 1.3 | 1 | 10/10/2014 21:25 |
| 1,1-Biphenyl | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Bis (2-chloroethoxy) Methane | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Bis (2-chloroethyl) Ether | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Bis (2-chloroisopropyl) Ether | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Bis (2-ethylhexyl) Adipate | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Bis (2-ethylhexyl) Phthalate | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 4-Bromophenyl Phenyl Ether | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Butylbenzyl Phthalate | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 4-Chloroaniline | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 4-Chloro-3-methylphenol | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2-Chloronaphthalene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2-Chlorophenol | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 4-Chlorophenyl Phenyl Ether | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Chrysene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Dibenzo (a,h) anthracene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Dibenzofuran | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Di-n-butyl Phthalate | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 1,2-Dichlorobenzene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 1,3-Dichlorobenzene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 1,4-Dichlorobenzene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 3,3-Dichlorobenzidine | ND | 0.50 | 1 | 10/10/2014 21:25 |
| 2,4-Dichlorophenol | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Diethyl Phthalate | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2,4-Dimethylphenol | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Dimethyl Phthalate | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 4,6-Dinitro-2-methylphenol | ND | 1.3 | 1 | 10/10/2014 21:25 |
| 2,4-Dinitrophenol | ND | 6.3 | 1 | 10/10/2014 21:25 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC21** | **96361** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2,4-Dinitrotoluene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2,6-Dinitrotoluene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Di-n-octyl Phthalate | ND | 0.50 | 1 | 10/10/2014 21:25 |
| 1,2-Diphenylhydrazine | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Fluoranthene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Fluorene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Hexachlorobenzene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Hexachlorobutadiene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Hexachlorocyclopentadiene | ND | 1.3 | 1 | 10/10/2014 21:25 |
| Hexachloroethane | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Indeno (1,2,3-cd) pyrene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Isophorone | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2-Methylnaphthalene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2-Methylphenol (o-Cresol) | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 3 &/or 4-Methylphenol (m,p-Cresol) | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Naphthalene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2-Nitroaniline | ND | 1.3 | 1 | 10/10/2014 21:25 |
| 3-Nitroaniline | ND | 1.3 | 1 | 10/10/2014 21:25 |
| 4-Nitroaniline | ND | 1.3 | 1 | 10/10/2014 21:25 |
| Nitrobenzene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2-Nitrophenol | ND | 1.3 | 1 | 10/10/2014 21:25 |
| 4-Nitrophenol | ND | 1.3 | 1 | 10/10/2014 21:25 |
| N-Nitrosodiphenylamine | ND | 0.25 | 1 | 10/10/2014 21:25 |
| N-Nitrosodi-n-propylamine | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Pentachlorophenol | ND | 1.3 | 1 | 10/10/2014 21:25 |
| Phenanthrene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Phenol | ND | 0.25 | 1 | 10/10/2014 21:25 |
| Pyrene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 1,2,4-Trichlorobenzene | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2,4,5-Trichlorophenol | ND | 0.25 | 1 | 10/10/2014 21:25 |
| 2,4,6-Trichlorophenol | ND | 0.25 | 1 | 10/10/2014 21:25 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC21** | **96361** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Surrogates | REC (%) | Limits | | |
| 2-Fluorophenol | 91 | 30-130 | | 10/10/2014 21:25 |
| Phenol-d5 | 83 | 30-130 | | 10/10/2014 21:25 |
| Nitrobenzene-d5 | 71 | 30-130 | | 10/10/2014 21:25 |
| 2-Fluorobiphenyl | 76 | 30-130 | | 10/10/2014 21:25 |
| 2,4,6-Tribromophenol | 63 | 16-130 | | 10/10/2014 21:25 |
| 4-Terphenyl-d14 | 82 | 30-130 | | 10/10/2014 21:25 |

Analyst(s): HK

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| B-2-5.0 | 1410373-008A | Soil | 10/02/2014 | GC17 | 96402 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acenaphthene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Acenaphthylene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Acetochlor | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Anthracene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Benzidine | ND | 1.3 | 1 | 10/13/2014 18:04 |
| Benzo (a) anthracene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Benzo (b) fluoranthene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Benzo (k) fluoranthene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Benzo (g,h,i) perylene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Benzo (a) pyrene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Benzyl Alcohol | ND | 1.3 | 1 | 10/13/2014 18:04 |
| 1,1-Biphenyl | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Bis (2-chloroethoxy) Methane | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Bis (2-chloroethyl) Ether | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Bis (2-chloroisopropyl) Ether | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Bis (2-ethylhexyl) Adipate | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Bis (2-ethylhexyl) Phthalate | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 4-Bromophenyl Phenyl Ether | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Butylbenzyl Phthalate | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 4-Chloroaniline | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 4-Chloro-3-methylphenol | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2-Chloronaphthalene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2-Chlorophenol | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 4-Chlorophenyl Phenyl Ether | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Chrysene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Dibenzo (a,h) anthracene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Dibenzofuran | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Di-n-butyl Phthalate | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 1,2-Dichlorobenzene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 1,3-Dichlorobenzene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 1,4-Dichlorobenzene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 3,3-Dichlorobenzidine | ND | 0.50 | 1 | 10/13/2014 18:04 |
| 2,4-Dichlorophenol | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Diethyl Phthalate | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2,4-Dimethylphenol | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Dimethyl Phthalate | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 4,6-Dinitro-2-methylphenol | ND | 1.3 | 1 | 10/13/2014 18:04 |
| 2,4-Dinitrophenol | ND | 6.3 | 1 | 10/13/2014 18:04 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| B-2-5.0 | 1410373-008A | Soil | 10/02/2014 | GC17 | 96402 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2,4-Dinitrotoluene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2,6-Dinitrotoluene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Di-n-octyl Phthalate | ND | 0.50 | 1 | 10/13/2014 18:04 |
| 1,2-Diphenylhydrazine | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Fluoranthene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Fluorene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Hexachlorobenzene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Hexachlorobutadiene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Hexachlorocyclopentadiene | ND | 1.3 | 1 | 10/13/2014 18:04 |
| Hexachloroethane | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Indeno (1,2,3-cd) pyrene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Isophorone | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2-Methylnaphthalene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2-Methylphenol (o-Cresol) | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 3 &/or 4-Methylphenol (m,p-Cresol) | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Naphthalene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2-Nitroaniline | ND | 1.3 | 1 | 10/13/2014 18:04 |
| 3-Nitroaniline | ND | 1.3 | 1 | 10/13/2014 18:04 |
| 4-Nitroaniline | ND | 1.3 | 1 | 10/13/2014 18:04 |
| Nitrobenzene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2-Nitrophenol | ND | 1.3 | 1 | 10/13/2014 18:04 |
| 4-Nitrophenol | ND | 1.3 | 1 | 10/13/2014 18:04 |
| N-Nitrosodiphenylamine | ND | 0.25 | 1 | 10/13/2014 18:04 |
| N-Nitrosodi-n-propylamine | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Pentachlorophenol | ND | 1.3 | 1 | 10/13/2014 18:04 |
| Phenanthrene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Phenol | ND | 0.25 | 1 | 10/13/2014 18:04 |
| Pyrene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 1,2,4-Trichlorobenzene | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2,4,5-Trichlorophenol | ND | 0.25 | 1 | 10/13/2014 18:04 |
| 2,4,6-Trichlorophenol | ND | 0.25 | 1 | 10/13/2014 18:04 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil** | **10/02/2014** | **GC17** | **96402** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Surrogates | REC (%) | Limits | | |
| 2-Fluorophenol | 113 | 30-130 | | 10/13/2014 18:04 |
| Phenol-d5 | 98 | 30-130 | | 10/13/2014 18:04 |
| Nitrobenzene-d5 | 91 | 30-130 | | 10/13/2014 18:04 |
| 2-Fluorobiphenyl | 91 | 30-130 | | 10/13/2014 18:04 |
| 2,4,6-Tribromophenol | 79 | 16-130 | | 10/13/2014 18:04 |
| 4-Terphenyl-d14 | 94 | 30-130 | | 10/13/2014 18:04 |

Analyst(s): HK

*(Cont.)*

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http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC17** | **96361** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acenaphthene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Acenaphthylene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Acetochlor | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Anthracene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Benzidine | ND | 1.3 | 1 | 10/11/2014 02:42 |
| Benzo (a) anthracene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Benzo (b) fluoranthene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Benzo (k) fluoranthene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Benzo (g,h,i) perylene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Benzo (a) pyrene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Benzyl Alcohol | ND | 1.3 | 1 | 10/11/2014 02:42 |
| 1,1-Biphenyl | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Bis (2-chloroethoxy) Methane | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Bis (2-chloroethyl) Ether | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Bis (2-chloroisopropyl) Ether | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Bis (2-ethylhexyl) Adipate | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Bis (2-ethylhexyl) Phthalate | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 4-Bromophenyl Phenyl Ether | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Butylbenzyl Phthalate | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 4-Chloroaniline | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 4-Chloro-3-methylphenol | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2-Chloronaphthalene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2-Chlorophenol | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 4-Chlorophenyl Phenyl Ether | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Chrysene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Dibenzo (a,h) anthracene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Dibenzofuran | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Di-n-butyl Phthalate | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 1,2-Dichlorobenzene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 1,3-Dichlorobenzene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 1,4-Dichlorobenzene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 3,3-Dichlorobenzidine | ND | 0.50 | 1 | 10/11/2014 02:42 |
| 2,4-Dichlorophenol | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Diethyl Phthalate | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2,4-Dimethylphenol | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Dimethyl Phthalate | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 4,6-Dinitro-2-methylphenol | ND | 1.3 | 1 | 10/11/2014 02:42 |
| 2,4-Dinitrophenol | ND | 6.3 | 1 | 10/11/2014 02:42 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC17** | **96361** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2,4-Dinitrotoluene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2,6-Dinitrotoluene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Di-n-octyl Phthalate | ND | 0.50 | 1 | 10/11/2014 02:42 |
| 1,2-Diphenylhydrazine | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Fluoranthene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Fluorene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Hexachlorobenzene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Hexachlorobutadiene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Hexachlorocyclopentadiene | ND | 1.3 | 1 | 10/11/2014 02:42 |
| Hexachloroethane | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Indeno (1,2,3-cd) pyrene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Isophorone | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2-Methylnaphthalene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2-Methylphenol (o-Cresol) | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 3 &/or 4-Methylphenol (m,p-Cresol) | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Naphthalene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2-Nitroaniline | ND | 1.3 | 1 | 10/11/2014 02:42 |
| 3-Nitroaniline | ND | 1.3 | 1 | 10/11/2014 02:42 |
| 4-Nitroaniline | ND | 1.3 | 1 | 10/11/2014 02:42 |
| Nitrobenzene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2-Nitrophenol | ND | 1.3 | 1 | 10/11/2014 02:42 |
| 4-Nitrophenol | ND | 1.3 | 1 | 10/11/2014 02:42 |
| N-Nitrosodiphenylamine | ND | 0.25 | 1 | 10/11/2014 02:42 |
| N-Nitrosodi-n-propylamine | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Pentachlorophenol | ND | 1.3 | 1 | 10/11/2014 02:42 |
| Phenanthrene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Phenol | ND | 0.25 | 1 | 10/11/2014 02:42 |
| Pyrene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 1,2,4-Trichlorobenzene | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2,4,5-Trichlorophenol | ND | 0.25 | 1 | 10/11/2014 02:42 |
| 2,4,6-Trichlorophenol | ND | 0.25 | 1 | 10/11/2014 02:42 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8270C |
| **Date Prepared:** | 10/10/14-10/13/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC17** | **96361** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Surrogates | REC (%) | Limits | | |
| 2-Fluorophenol | 89 | 30-130 | | 10/11/2014 02:42 |
| Phenol-d5 | 79 | 30-130 | | 10/11/2014 02:42 |
| Nitrobenzene-d5 | 76 | 30-130 | | 10/11/2014 02:42 |
| 2-Fluorobiphenyl | 78 | 30-130 | | 10/11/2014 02:42 |
| 2,4,6-Tribromophenol | 64 | 16-130 | | 10/11/2014 02:42 |
| 4-Terphenyl-d14 | 77 | 30-130 | | 10/11/2014 02:42 |

Analyst(s): HK

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## CAM / CCR 17 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-2.5** | **1410373-001A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96308** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Antimony | ND | 0.50 | 1 | 10/10/2014 23:48 |
| Arsenic | **4.8** | 0.50 | 1 | 10/10/2014 23:48 |
| Barium | **100** | 5.0 | 1 | 10/10/2014 23:48 |
| Beryllium | **0.54** | 0.50 | 1 | 10/10/2014 23:48 |
| Cadmium | ND | 0.25 | 1 | 10/10/2014 23:48 |
| Chromium | **57** | 0.50 | 1 | 10/10/2014 23:48 |
| Cobalt | **17** | 0.50 | 1 | 10/10/2014 23:48 |
| Copper | **36** | 0.50 | 1 | 10/10/2014 23:48 |
| Lead | **5.7** | 0.50 | 1 | 10/10/2014 23:48 |
| Mercury | **0.17** | 0.050 | 1 | 10/10/2014 23:48 |
| Molybdenum | **1.2** | 0.50 | 1 | 10/10/2014 23:48 |
| Nickel | **59** | 0.50 | 1 | 10/10/2014 23:48 |
| Selenium | ND | 0.50 | 1 | 10/10/2014 23:48 |
| Silver | ND | 0.50 | 1 | 10/10/2014 23:48 |
| Thallium | ND | 0.50 | 1 | 10/10/2014 23:48 |
| Vanadium | **78** | 0.50 | 1 | 10/10/2014 23:48 |
| Zinc | **57** | 5.0 | 1 | 10/10/2014 23:48 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 118 | 70-130 | 10/10/2014 23:48 |

Analyst(s): DB

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Angela Rydelius, Lab Manager

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## CAM / CCR 17 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-10.5** | **1410373-004A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Antimony | ND | 0.50 | 1 | 10/11/2014 00:01 |
| Arsenic | **4.8** | 0.50 | 1 | 10/11/2014 00:01 |
| Barium | **90** | 5.0 | 1 | 10/11/2014 00:01 |
| Beryllium | ND | 0.50 | 1 | 10/11/2014 00:01 |
| Cadmium | ND | 0.25 | 1 | 10/11/2014 00:01 |
| Chromium | **81** | 0.50 | 1 | 10/11/2014 00:01 |
| Cobalt | **15** | 0.50 | 1 | 10/11/2014 00:01 |
| Copper | **36** | 0.50 | 1 | 10/11/2014 00:01 |
| Lead | **6.1** | 0.50 | 1 | 10/11/2014 00:01 |
| Mercury | **0.066** | 0.050 | 1 | 10/11/2014 00:01 |
| Molybdenum | **0.88** | 0.50 | 1 | 10/11/2014 00:01 |
| Nickel | **89** | 0.50 | 1 | 10/11/2014 00:01 |
| Selenium | ND | 0.50 | 1 | 10/11/2014 00:01 |
| Silver | ND | 0.50 | 1 | 10/11/2014 00:01 |
| Thallium | ND | 0.50 | 1 | 10/11/2014 00:01 |
| Vanadium | **68** | 0.50 | 1 | 10/11/2014 00:01 |
| Zinc | **54** | 5.0 | 1 | 10/11/2014 00:01 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 103 | 70-130 | 10/11/2014 00:01 |

Analyst(s): DB

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Angela Rydelius, Lab Manager

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## CAM / CCR 17 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-10.5** | **1410373-009A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Antimony | ND | 0.50 | 1 | 10/11/2014 00:33 |
| Arsenic | **4.2** | 0.50 | 1 | 10/11/2014 00:33 |
| Barium | **99** | 5.0 | 1 | 10/11/2014 00:33 |
| Beryllium | ND | 0.50 | 1 | 10/11/2014 00:33 |
| Cadmium | ND | 0.25 | 1 | 10/11/2014 00:33 |
| Chromium | **60** | 0.50 | 1 | 10/11/2014 00:33 |
| Cobalt | **15** | 0.50 | 1 | 10/11/2014 00:33 |
| Copper | **38** | 0.50 | 1 | 10/11/2014 00:33 |
| Lead | **6.2** | 0.50 | 1 | 10/11/2014 00:33 |
| Mercury | **0.11** | 0.050 | 1 | 10/11/2014 00:33 |
| Molybdenum | ND | 0.50 | 1 | 10/11/2014 00:33 |
| Nickel | **67** | 0.50 | 1 | 10/11/2014 00:33 |
| Selenium | ND | 0.50 | 1 | 10/11/2014 00:33 |
| Silver | ND | 0.50 | 1 | 10/11/2014 00:33 |
| Thallium | ND | 0.50 | 1 | 10/11/2014 00:33 |
| Vanadium | **62** | 0.50 | 1 | 10/11/2014 00:33 |
| Zinc | **64** | 5.0 | 1 | 10/11/2014 00:33 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 106 | 70-130 | 10/11/2014 00:33 |

Analyst(s): DB

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## CAM / CCR 17 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-3.0** | **1410373-012A** | **Soil/TOTAL** | **10/03/2014** | **ICP-MS2** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Antimony | **0.88** | 0.50 | 1 | 10/13/2014 22:29 |
| Arsenic | **8.1** | 0.50 | 1 | 10/13/2014 22:29 |
| Barium | **230** | 5.0 | 1 | 10/13/2014 22:29 |
| Beryllium | **0.79** | 0.50 | 1 | 10/13/2014 22:29 |
| Cadmium | ND | 0.25 | 1 | 10/13/2014 22:29 |
| Chromium | **73** | 0.50 | 1 | 10/13/2014 22:29 |
| Cobalt | **19** | 0.50 | 1 | 10/13/2014 22:29 |
| Copper | **40** | 0.50 | 1 | 10/13/2014 22:29 |
| Lead | **12** | 0.50 | 1 | 10/13/2014 22:29 |
| Mercury | **0.13** | 0.050 | 1 | 10/13/2014 22:29 |
| Molybdenum | **0.91** | 0.50 | 1 | 10/13/2014 22:29 |
| Nickel | **82** | 0.50 | 1 | 10/13/2014 22:29 |
| Selenium | ND | 1.0 | 1 | 10/13/2014 22:29 |
| Silver | ND | 0.50 | 1 | 10/13/2014 22:29 |
| Thallium | ND | 0.50 | 1 | 10/13/2014 22:29 |
| Vanadium | **62** | 0.50 | 1 | 10/13/2014 22:29 |
| Zinc | **71** | 5.0 | 1 | 10/13/2014 22:29 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 108 | 70-130 | 10/13/2014 22:29 |

Analyst(s): DB

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Angela Rydelius, Lab Manager

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## CAM / CCR 17 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-8.0** | **1410373-014A** | **Soil/TOTAL** | **10/03/2014** | **ICP-MS2** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Antimony | ND | 0.50 | 1 | 10/13/2014 22:41 |
| Arsenic | **4.1** | 0.50 | 1 | 10/13/2014 22:41 |
| Barium | **100** | 5.0 | 1 | 10/13/2014 22:41 |
| Beryllium | ND | 0.50 | 1 | 10/13/2014 22:41 |
| Cadmium | ND | 0.25 | 1 | 10/13/2014 22:41 |
| Chromium | **50** | 0.50 | 1 | 10/13/2014 22:41 |
| Cobalt | **11** | 0.50 | 1 | 10/13/2014 22:41 |
| Copper | **33** | 0.50 | 1 | 10/13/2014 22:41 |
| Lead | **5.7** | 0.50 | 1 | 10/13/2014 22:41 |
| Mercury | **0.11** | 0.050 | 1 | 10/13/2014 22:41 |
| Molybdenum | ND | 0.50 | 1 | 10/13/2014 22:41 |
| Nickel | **48** | 0.50 | 1 | 10/13/2014 22:41 |
| Selenium | ND | 0.50 | 1 | 10/13/2014 22:41 |
| Silver | ND | 0.50 | 1 | 10/13/2014 22:41 |
| Thallium | ND | 0.50 | 1 | 10/13/2014 22:41 |
| Vanadium | **55** | 0.50 | 1 | 10/13/2014 22:41 |
| Zinc | **53** | 5.0 | 1 | 10/13/2014 22:41 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 105 | 70-130 | 10/13/2014 22:41 |

Analyst(s): DB

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Angela Rydelius, Lab Manager

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## CAM / CCR 17 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil/TOTAL** | **10/03/2014** | **ICP-MS1** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Antimony | ND | 0.50 | 1 | 10/10/2014 22:46 |
| Arsenic | **3.4** | 0.50 | 1 | 10/10/2014 22:46 |
| Barium | **83** | 5.0 | 1 | 10/10/2014 22:46 |
| Beryllium | ND | 0.50 | 1 | 10/10/2014 22:46 |
| Cadmium | ND | 0.25 | 1 | 10/10/2014 22:46 |
| Chromium | **44** | 0.50 | 1 | 10/10/2014 22:46 |
| Cobalt | **11** | 0.50 | 1 | 10/10/2014 22:46 |
| Copper | **29** | 0.50 | 1 | 10/10/2014 22:46 |
| Lead | **3.9** | 0.50 | 1 | 10/10/2014 22:46 |
| Mercury | **0.089** | 0.050 | 1 | 10/10/2014 22:46 |
| Molybdenum | ND | 0.50 | 1 | 10/10/2014 22:46 |
| Nickel | **43** | 0.50 | 1 | 10/10/2014 22:46 |
| Selenium | ND | 0.50 | 1 | 10/10/2014 22:46 |
| Silver | ND | 0.50 | 1 | 10/10/2014 22:46 |
| Thallium | ND | 0.50 | 1 | 10/10/2014 22:46 |
| Vanadium | **57** | 0.50 | 1 | 10/10/2014 22:46 |
| Zinc | **42** | 5.0 | 1 | 10/10/2014 22:46 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 108 | 70-130 | 10/10/2014 22:46 |

Analyst(s): DB

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8021B/8015Bm |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-2.5** | **1410373-001A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 00:44 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 00:44 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 00:44 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 00:44 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 00:44 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 00:44 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 108 | 70-130 | 10/11/2014 00:44 |

Analyst(s): IA

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/10/2014 21:45 |
| MTBE | --- | 0.050 | 1 | 10/10/2014 21:45 |
| Benzene | --- | 0.0050 | 1 | 10/10/2014 21:45 |
| Toluene | --- | 0.0050 | 1 | 10/10/2014 21:45 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/10/2014 21:45 |
| Xylenes | --- | 0.0050 | 1 | 10/10/2014 21:45 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 116 | 70-130 | 10/10/2014 21:45 |

Analyst(s): IA

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8021B/8015Bm |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-10.5** | **1410373-004A** | **Soil** | **10/02/2014** | **GC3** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 23:41 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 23:41 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 23:41 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 23:41 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 23:41 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 23:41 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 93 | 70-130 | 10/11/2014 23:41 |

Analyst(s): IA

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-17.5** | **1410373-006A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/10/2014 22:15 |
| MTBE | --- | 0.050 | 1 | 10/10/2014 22:15 |
| Benzene | --- | 0.0050 | 1 | 10/10/2014 22:15 |
| Toluene | --- | 0.0050 | 1 | 10/10/2014 22:15 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/10/2014 22:15 |
| Xylenes | --- | 0.0050 | 1 | 10/10/2014 22:15 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 105 | 70-130 | 10/10/2014 22:15 |

Analyst(s): IA

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8021B/8015Bm |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-3.0** | **1410373-007A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/10/2014 22:45 |
| MTBE | --- | 0.050 | 1 | 10/10/2014 22:45 |
| Benzene | --- | 0.0050 | 1 | 10/10/2014 22:45 |
| Toluene | --- | 0.0050 | 1 | 10/10/2014 22:45 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/10/2014 22:45 |
| Xylenes | --- | 0.0050 | 1 | 10/10/2014 22:45 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 108 | 70-130 | 10/10/2014 22:45 |

Analyst(s): IA

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 07:40 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 07:40 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 07:40 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 07:40 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 07:40 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 07:40 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 109 | 70-130 | 10/11/2014 07:40 |

Analyst(s): IA

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8021B/8015Bm |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-10.5** | **1410373-009A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 03:43 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 03:43 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 03:43 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 03:43 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 03:43 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 03:43 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 104 | 70-130 | 10/11/2014 03:43 |

Analyst(s): IA

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-15.5** | **1410373-010A** | **Soil** | **10/02/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 03:13 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 03:13 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 03:13 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 03:13 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 03:13 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 03:13 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 108 | 70-130 | 10/11/2014 03:13 |

Analyst(s): IA

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8021B/8015Bm |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-3.0** | **1410373-012A** | **Soil** | **10/03/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 12:39 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 12:39 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 12:39 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 12:39 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 12:39 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 12:39 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 105 | 70-130 | 10/11/2014 12:39 |

Analyst(s): IA

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-5.5** | **1410373-013A** | **Soil** | **10/03/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 06:41 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 06:41 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 06:41 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 06:41 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 06:41 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 06:41 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 100 | 70-130 | 10/11/2014 06:41 |

Analyst(s): IA

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW5030B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8021B/8015Bm |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

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

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-8.0** | **1410373-014A** | **Soil** | **10/03/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 07:10 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 07:10 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 07:10 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 07:10 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 07:10 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 07:10 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 109 | 70-130 | 10/11/2014 07:10 |

Analyst(s): IA

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC7** | **96311** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH(g) | ND | 1.0 | 1 | 10/11/2014 01:14 |
| MTBE | --- | 0.050 | 1 | 10/11/2014 01:14 |
| Benzene | --- | 0.0050 | 1 | 10/11/2014 01:14 |
| Toluene | --- | 0.0050 | 1 | 10/11/2014 01:14 |
| Ethylbenzene | --- | 0.0050 | 1 | 10/11/2014 01:14 |
| Xylenes | --- | 0.0050 | 1 | 10/11/2014 01:14 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorotoluene | 100 | 70-130 | 10/11/2014 01:14 |

Analyst(s): IA

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## LUFT 5 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96308** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Cadmium | ND | 0.25 | 1 | 10/10/2014 23:54 |
| Chromium | **69** | 0.50 | 1 | 10/10/2014 23:54 |
| Lead | **17** | 0.50 | 1 | 10/10/2014 23:54 |
| Nickel | **60** | 0.50 | 1 | 10/10/2014 23:54 |
| Zinc | **62** | 5.0 | 1 | 10/10/2014 23:54 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 123 | 70-130 | 10/10/2014 23:54 |

Analyst(s): DB

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-17.5** | **1410373-006A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Cadmium | ND | 0.25 | 1 | 10/11/2014 00:20 |
| Chromium | **56** | 0.50 | 1 | 10/11/2014 00:20 |
| Lead | **6.8** | 0.50 | 1 | 10/11/2014 00:20 |
| Nickel | **68** | 0.50 | 1 | 10/11/2014 00:20 |
| Zinc | **66** | 5.0 | 1 | 10/11/2014 00:20 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 104 | 70-130 | 10/11/2014 00:20 |

Analyst(s): DB

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-3.0** | **1410373-007A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Cadmium | ND | 0.25 | 1 | 10/11/2014 00:27 |
| Chromium | **65** | 0.50 | 1 | 10/11/2014 00:27 |
| Lead | **6.8** | 0.50 | 1 | 10/11/2014 00:27 |
| Nickel | **62** | 0.50 | 1 | 10/11/2014 00:27 |
| Zinc | **59** | 5.0 | 1 | 10/11/2014 00:27 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 109 | 70-130 | 10/11/2014 00:27 |

Analyst(s): DB

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3050B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/9/14 | **Unit:** | mg/Kg |

## LUFT 5 Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS2** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Cadmium | ND | 0.25 | 1 | 10/13/2014 22:23 |
| Chromium | **61** | 0.50 | 1 | 10/13/2014 22:23 |
| Lead | **7.2** | 0.50 | 1 | 10/13/2014 22:23 |
| Nickel | **72** | 0.50 | 1 | 10/13/2014 22:23 |
| Zinc | **63** | 5.0 | 1 | 10/13/2014 22:23 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 105 | 70-130 | 10/13/2014 22:23 |

Analyst(s): DB

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-15.5** | **1410373-010A** | **Soil/TOTAL** | **10/02/2014** | **ICP-MS1** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Cadmium | ND | 0.25 | 1 | 10/11/2014 00:39 |
| Chromium | **26** | 0.50 | 1 | 10/11/2014 00:39 |
| Lead | **5.3** | 0.50 | 1 | 10/11/2014 00:39 |
| Nickel | **28** | 0.50 | 1 | 10/11/2014 00:39 |
| Zinc | **38** | 5.0 | 1 | 10/11/2014 00:39 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 109 | 70-130 | 10/11/2014 00:39 |

Analyst(s): DB

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-5.5** | **1410373-013A** | **Soil/TOTAL** | **10/03/2014** | **ICP-MS2** | **96316** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Cadmium | ND | 0.25 | 1 | 10/13/2014 22:35 |
| Chromium | **42** | 0.50 | 1 | 10/13/2014 22:35 |
| Lead | **4.0** | 0.50 | 1 | 10/13/2014 22:35 |
| Nickel | **42** | 0.50 | 1 | 10/13/2014 22:35 |
| Zinc | **57** | 5.0 | 1 | 10/13/2014 22:35 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Tb 350.917 | 101 | 70-130 | 10/13/2014 22:35 |

Analyst(s): DB

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8015B |
| **Date Prepared:** | 10/9/14-10/14/14 | **Unit:** | mg/Kg |

## Total Extractable Petroleum Hydrocarbons

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-2.5** | **1410373-001A** | **Soil** | **10/02/2014** | **GC6B** | **96403** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/16/2014 07:58 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/16/2014 07:58 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 104 | 70-130 | 10/16/2014 07:58 |

Analyst(s): TK

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil** | **10/02/2014** | **GC6B** | **96403** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | **4.4** | 1.0 | 1 | 10/16/2014 09:10 |
| TPH-Motor Oil (C18-C36) | **17** | 5.0 | 1 | 10/16/2014 09:10 |

| Surrogates | REC (%) | Limits | Analytical Comments: e7,e2 | |
|---|---|---|---|---|
| C9 | 105 | 70-130 | | 10/16/2014 09:10 |

Analyst(s): TK

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-10.5** | **1410373-004A** | **Soil** | **10/02/2014** | **GC11B** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/15/2014 00:14 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/15/2014 00:14 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 105 | 70-130 | 10/15/2014 00:14 |

Analyst(s): TK

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8015B |
| **Date Prepared:** | 10/9/14-10/14/14 | **Unit:** | mg/Kg |

## Total Extractable Petroleum Hydrocarbons

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-17.5** | **1410373-006A** | **Soil** | **10/02/2014** | **GC6A** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/11/2014 14:10 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/11/2014 14:10 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 95 | 70-130 | 10/11/2014 14:10 |

Analyst(s): TK

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-3.0** | **1410373-007A** | **Soil** | **10/02/2014** | **GC11B** | **96383** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/14/2014 19:40 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/11/2014 20:08 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 114 | 70-130 | 10/11/2014 20:08 |

Analyst(s): TK

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil** | **10/02/2014** | **GC2B** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | **1.2** | 1.0 | 1 | 10/11/2014 01:29 |
| TPH-Motor Oil (C18-C36) | **8.2** | 5.0 | 1 | 10/11/2014 01:29 |

| Surrogates | REC (%) | Limits | Analytical Comments: e7,e2 | |
|---|---|---|---|---|
| C9 | 116 | 70-130 | | 10/11/2014 01:29 |

Analyst(s): MAM

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8015B |
| **Date Prepared:** | 10/9/14-10/14/14 | **Unit:** | mg/Kg |

## Total Extractable Petroleum Hydrocarbons

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-10.5** | **1410373-009A** | **Soil** | **10/02/2014** | **GC2B** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/10/2014 20:24 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/10/2014 20:24 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 110 | 70-130 | 10/10/2014 20:24 |

Analyst(s): MAM

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-15.5** | **1410373-010A** | **Soil** | **10/02/2014** | **GC2B** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/10/2014 22:57 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/10/2014 22:57 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 109 | 70-130 | 10/10/2014 22:57 |

Analyst(s): MAM

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-3.0** | **1410373-012A** | **Soil** | **10/03/2014** | **GC6B** | **96403** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/16/2014 06:47 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/16/2014 06:47 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 108 | 70-130 | 10/16/2014 06:47 |

Analyst(s): TK

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | SW3550B |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW8015B |
| **Date Prepared:** | 10/9/14-10/14/14 | **Unit:** | mg/Kg |

## Total Extractable Petroleum Hydrocarbons

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-5.5** | **1410373-013A** | **Soil** | **10/03/2014** | **GC2B** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/10/2014 21:40 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/10/2014 21:40 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 110 | 70-130 | 10/10/2014 21:40 |

Analyst(s): MAM

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-8.0** | **1410373-014A** | **Soil** | **10/03/2014** | **GC9b** | **96310** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/12/2014 00:54 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/12/2014 00:54 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 114 | 70-130 | 10/12/2014 00:54 |

Analyst(s): TK

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-15.5** | **1410373-016A** | **Soil** | **10/03/2014** | **GC6A** | **96315** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 1.0 | 1 | 10/11/2014 19:00 |
| TPH-Motor Oil (C18-C36) | ND | 5.0 | 1 | 10/11/2014 19:00 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| C9 | 89 | 70-130 | 10/11/2014 19:00 |

Analyst(s): TK

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96298 |
| **Date Analyzed:** | 10/10/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC23 | **Analytical Method:** | SW8081A/8082 |
| **Matrix:** | Soil | **Unit:** | mg/kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96298 |

## QC Summary Report for SW8081A/8082

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Aldrin | ND | 0.0521 | 0.0010 | 0.050 | - | 104 | 70-130 |
| a-BHC | ND | - | 0.0010 | - | - | - | - |
| b-BHC | ND | - | 0.0010 | - | - | - | - |
| d-BHC | ND | - | 0.0010 | - | - | - | - |
| g-BHC | ND | 0.0626 | 0.0010 | 0.050 | - | 125 | 70-130 |
| Chlordane (Technical) | ND | - | 0.025 | - | - | - | - |
| a-Chlordane | ND | - | 0.0010 | - | - | - | - |
| g-Chlordane | ND | - | 0.0010 | - | - | - | - |
| p,p-DDD | ND | - | 0.0010 | - | - | - | - |
| p,p-DDE | ND | - | 0.0010 | - | - | - | - |
| p,p-DDT | ND | 0.0496 | 0.0010 | 0.050 | - | 99 | 70-130 |
| Dieldrin | ND | 0.0578 | 0.0010 | 0.050 | - | 116 | 70-130 |
| Endosulfan I | ND | - | 0.0010 | - | - | - | - |
| Endosulfan II | ND | - | 0.0010 | - | - | - | - |
| Endosulfan sulfate | ND | - | 0.0010 | - | - | - | - |
| Endrin | ND | 0.0543 | 0.0010 | 0.050 | - | 109 | 70-130 |
| Endrin aldehyde | ND | - | 0.0010 | - | - | - | - |
| Endrin ketone | ND | - | 0.0010 | - | - | - | - |
| Heptachlor | ND | 0.0495 | 0.0010 | 0.050 | - | 99 | 70-130 |
| Heptachlor epoxide | ND | - | 0.0010 | - | - | - | - |
| Hexachlorobenzene | ND | - | 0.010 | - | - | - | - |
| Hexachlorocyclopentadiene | ND | - | 0.020 | - | - | - | - |
| Methoxychlor | ND | - | 0.0010 | - | - | - | - |
| Toxaphene | ND | - | 0.050 | - | - | - | - |
| **Surrogate Recovery** | | | | | | | |
| Decachlorobiphenyl | 0.0624 | 0.0614 | | 0.050 | 125 | 123 | 70-130 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96312 |
| **Date Analyzed:** | 10/11/14 | **Extraction Method:** | SW5030B |
| **Instrument:** | GC16 | **Analytical Method:** | SW8260B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96312<br>1410370-013AMS/MSD |

## QC Summary Report for SW8260B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Acetone | ND | - | 0.10 | - | - | - | - |
| tert-Amyl methyl ether (TAME) | ND | 0.0396 | 0.0050 | 0.050 | - | 79 | 55-106 |
| Benzene | ND | 0.0499 | 0.0050 | 0.050 | - | 100 | 69-118 |
| Bromobenzene | ND | - | 0.0050 | - | - | - | - |
| Bromochloromethane | ND | - | 0.0050 | - | - | - | - |
| Bromodichloromethane | ND | - | 0.0050 | - | - | - | - |
| Bromoform | ND | - | 0.0050 | - | - | - | - |
| Bromomethane | ND | - | 0.0050 | - | - | - | - |
| 2-Butanone (MEK) | ND | - | 0.020 | - | - | - | - |
| t-Butyl alcohol (TBA) | ND | 0.185 | 0.050 | 0.20 | - | 93 | 63-117 |
| n-Butyl benzene | ND | - | 0.0050 | - | - | - | - |
| sec-Butyl benzene | ND | - | 0.0050 | - | - | - | - |
| tert-Butyl benzene | ND | - | 0.0050 | - | - | - | - |
| Carbon Disulfide | ND | - | 0.0050 | - | - | - | - |
| Carbon Tetrachloride | ND | - | 0.0050 | - | - | - | - |
| Chlorobenzene | ND | 0.0485 | 0.0050 | 0.050 | - | 97 | 74-117 |
| Chloroethane | ND | - | 0.0050 | - | - | - | - |
| Chloroform | ND | - | 0.0050 | - | - | - | - |
| Chloromethane | ND | - | 0.0050 | - | - | - | - |
| 2-Chlorotoluene | ND | - | 0.0050 | - | - | - | - |
| 4-Chlorotoluene | ND | - | 0.0050 | - | - | - | - |
| Dibromochloromethane | ND | - | 0.0050 | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | ND | - | 0.0040 | - | - | - | - |
| 1,2-Dibromoethane (EDB) | ND | 0.0492 | 0.0040 | 0.050 | - | 98 | 58-120 |
| Dibromomethane | ND | - | 0.0050 | - | - | - | - |
| 1,2-Dichlorobenzene | ND | - | 0.0050 | - | - | - | - |
| 1,3-Dichlorobenzene | ND | - | 0.0050 | - | - | - | - |
| 1,4-Dichlorobenzene | ND | - | 0.0050 | - | - | - | - |
| Dichlorodifluoromethane | ND | - | 0.0050 | - | - | - | - |
| 1,1-Dichloroethane | ND | - | 0.0050 | - | - | - | - |
| 1,2-Dichloroethane (1,2-DCA) | ND | 0.0498 | 0.0040 | 0.050 | - | 100 | 70-113 |
| 1,1-Dichloroethene | ND | 0.0450 | 0.0050 | 0.050 | - | 90 | 61-124 |
| cis-1,2-Dichloroethene | ND | - | 0.0050 | - | - | - | - |
| trans-1,2-Dichloroethene | ND | - | 0.0050 | - | - | - | - |
| 1,2-Dichloropropane | ND | - | 0.0050 | - | - | - | - |
| 1,3-Dichloropropane | ND | - | 0.0050 | - | - | - | - |
| 2,2-Dichloropropane | ND | - | 0.0050 | - | - | - | - |
| 1,1-Dichloropropene | ND | - | 0.0050 | - | - | - | - |
| cis-1,3-Dichloropropene | ND | - | 0.0050 | - | - | - | - |
| trans-1,3-Dichloropropene | ND | - | 0.0050 | - | - | - | - |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96312 |
| **Date Analyzed:** | 10/11/14 | **Extraction Method:** | SW5030B |
| **Instrument:** | GC16 | **Analytical Method:** | SW8260B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96312<br>1410370-013AMS/MSD |

## QC Summary Report for SW8260B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Diisopropyl ether (DIPE) | ND | 0.0438 | 0.0050 | 0.050 | - | 88 | 71-111 |
| Ethylbenzene | ND | - | 0.0050 | - | - | - | - |
| Ethyl tert-butyl ether (ETBE) | ND | 0.0419 | 0.0050 | 0.050 | - | 84 | 67-108 |
| Freon 113 | ND | - | 0.0050 | - | - | - | - |
| Hexachlorobutadiene | ND | - | 0.0050 | - | - | - | - |
| Hexachloroethane | ND | - | 0.0050 | - | - | - | - |
| 2-Hexanone | ND | - | 0.0050 | - | - | - | - |
| Isopropylbenzene | ND | - | 0.0050 | - | - | - | - |
| 4-Isopropyl toluene | ND | - | 0.0050 | - | - | - | - |
| Methyl-t-butyl ether (MTBE) | ND | 0.0424 | 0.0050 | 0.050 | - | 85 | 58-113 |
| Methylene chloride | ND | - | 0.0050 | - | - | - | - |
| 4-Methyl-2-pentanone (MIBK) | ND | - | 0.0050 | - | - | - | - |
| Naphthalene | ND | - | 0.0050 | - | - | - | - |
| n-Propyl benzene | ND | - | 0.0050 | - | - | - | - |
| Styrene | ND | - | 0.0050 | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | ND | - | 0.0050 | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | ND | - | 0.0050 | - | - | - | - |
| Tetrachloroethene | ND | - | 0.0050 | - | - | - | - |
| Toluene | ND | 0.0491 | 0.0050 | 0.050 | - | 98 | 73-125 |
| 1,2,3-Trichlorobenzene | ND | - | 0.0050 | - | - | - | - |
| 1,2,4-Trichlorobenzene | ND | - | 0.0050 | - | - | - | - |
| 1,1,1-Trichloroethane | ND | - | 0.0050 | - | - | - | - |
| 1,1,2-Trichloroethane | ND | - | 0.0050 | - | - | - | - |
| Trichloroethene | ND | 0.0480 | 0.0050 | 0.050 | - | 96 | 73-118 |
| Trichlorofluoromethane | ND | - | 0.0050 | - | - | - | - |
| 1,2,3-Trichloropropane | ND | - | 0.0050 | - | - | - | - |
| 1,2,4-Trimethylbenzene | ND | - | 0.0050 | - | - | - | - |
| 1,3,5-Trimethylbenzene | ND | - | 0.0050 | - | - | - | - |
| Vinyl Chloride | ND | - | 0.0050 | - | - | - | - |
| Xylenes, Total | ND | - | 0.0050 | - | - | - | - |
| **Surrogate Recovery** | | | | | | | |
| Dibromofluoromethane | 0.136 | 0.135 | | 0.12 | 109 | 108 | 70-130 |
| Toluene-d8 | 0.114 | 0.115 | | 0.12 | 91 | 92 | 70-130 |
| 4-BFB | 0.0118 | 0.0121 | | 0.012 | 94 | 97 | 70-130 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96312 |
| **Date Analyzed:** | 10/11/14 | **Extraction Method:** | SW5030B |
| **Instrument:** | GC16 | **Analytical Method:** | SW8260B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96312<br>1410370-013AMS/MSD |

## QC Summary Report for SW8260B

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| tert-Amyl methyl ether (TAME) | 0.0275 | 0.0284 | 0.050 | ND | 55,F1 | 57,F1 | 70-130 | 3.02 | 30 |
| Benzene | 0.0327 | 0.0336 | 0.050 | ND | 65,F1 | 67,F1 | 70-130 | 2.91 | 30 |
| t-Butyl alcohol (TBA) | 0.117 | 0.132 | 0.20 | ND | 58,F1 | 66,F1 | 70-130 | 12.8 | 30 |
| Chlorobenzene | 0.0364 | 0.0380 | 0.050 | ND | 73 | 76 | 70-130 | 4.27 | 30 |
| 1,2-Dibromoethane (EDB) | 0.0337 | 0.0342 | 0.050 | ND | 67,F1 | 68,F1 | 70-130 | 1.53 | 30 |
| 1,2-Dichloroethane (1,2-DCA) | 0.0310 | 0.0317 | 0.050 | ND | 62,F1 | 63,F1 | 70-130 | 2.22 | 30 |
| 1,1-Dichloroethene | 0.0303 | 0.0307 | 0.050 | ND | 61,F1 | 61,F1 | 70-130 | 0 | 30 |
| Diisopropyl ether (DIPE) | 0.0267 | 0.0275 | 0.050 | ND | 53,F1 | 55,F1 | 70-130 | 2.86 | 30 |
| Ethyl tert-butyl ether (ETBE) | 0.0279 | 0.0283 | 0.050 | ND | 56,F1 | 57,F1 | 70-130 | 1.22 | 30 |
| Methyl-t-butyl ether (MTBE) | 0.0288 | 0.0301 | 0.050 | ND | 58,F1 | 60,F1 | 70-130 | 4.59 | 30 |
| Toluene | 0.0354 | 0.0368 | 0.050 | ND | 71 | 74 | 70-130 | 3.89 | 30 |
| Trichloroethene | 0.0351 | 0.0352 | 0.050 | ND | 70 | 70 | 70-130 | 0 | 30 |
| **Surrogate Recovery** | | | | | | | | | |
| Dibromofluoromethane | 0.111 | 0.109 | 0.12 | | 89 | 87 | 70-130 | 1.98 | 30 |
| Toluene-d8 | 0.117 | 0.116 | 0.12 | | 93 | 93 | 70-130 | 0 | 30 |
| 4-BFB | 0.0102 | 0.0106 | 0.012 | | 82 | 85 | 70-130 | 3.36 | 30 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/10/14 | **BatchID:** | 96361 |
| **Date Analyzed:** | 10/10/14 - 10/14/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC21 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96361<br>1410361-001AMS/MSD |

## QC Summary Report for SW8270C

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 4.61 | 0.25 | 5 | - | 92 | 30-130 |
| Acenaphthylene | ND | - | 0.25 | - | - | - | - |
| Acetochlor | ND | - | 0.25 | - | - | - | - |
| Anthracene | ND | - | 0.25 | - | - | - | - |
| Benzidine | ND | - | 1.3 | - | - | - | - |
| Benzo (a) anthracene | ND | - | 0.25 | - | - | - | - |
| Benzo (b) fluoranthene | ND | - | 0.25 | - | - | - | - |
| Benzo (k) fluoranthene | ND | - | 0.25 | - | - | - | - |
| Benzo (g,h,i) perylene | ND | - | 0.25 | - | - | - | - |
| Benzo (a) pyrene | ND | - | 0.25 | - | - | - | - |
| Benzyl Alcohol | ND | - | 1.3 | - | - | - | - |
| 1,1-Biphenyl | ND | - | 0.25 | - | - | - | - |
| Bis (2-chloroethoxy) Methane | ND | - | 0.25 | - | - | - | - |
| Bis (2-chloroethyl) Ether | ND | - | 0.25 | - | - | - | - |
| Bis (2-chloroisopropyl) Ether | ND | - | 0.25 | - | - | - | - |
| Bis (2-ethylhexyl) Adipate | ND | - | 0.25 | - | - | - | - |
| Bis (2-ethylhexyl) Phthalate | ND | - | 0.25 | - | - | - | - |
| 4-Bromophenyl Phenyl Ether | ND | - | 0.25 | - | - | - | - |
| Butylbenzyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 4-Chloroaniline | ND | - | 0.25 | - | - | - | - |
| 4-Chloro-3-methylphenol | ND | 5.90 | 0.25 | 5 | - | 118 | 30-130 |
| 2-Chloronaphthalene | ND | - | 0.25 | - | - | - | - |
| 2-Chlorophenol | ND | 5.96 | 0.25 | 5 | - | 119 | 30-130 |
| 4-Chlorophenyl Phenyl Ether | ND | - | 0.25 | - | - | - | - |
| Chrysene | ND | - | 0.25 | - | - | - | - |
| Dibenzo (a,h) anthracene | ND | - | 0.25 | - | - | - | - |
| Dibenzofuran | ND | - | 0.25 | - | - | - | - |
| Di-n-butyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 1,2-Dichlorobenzene | ND | - | 0.25 | - | - | - | - |
| 1,3-Dichlorobenzene | ND | - | 0.25 | - | - | - | - |
| 1,4-Dichlorobenzene | ND | 4.67 | 0.25 | 5 | - | 93 | 30-130 |
| 3,3-Dichlorobenzidine | ND | - | 0.50 | - | - | - | - |
| 2,4-Dichlorophenol | ND | - | 0.25 | - | - | - | - |
| Diethyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 2,4-Dimethylphenol | ND | - | 0.25 | - | - | - | - |
| Dimethyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | ND | - | 1.3 | - | - | - | - |
| 2,4-Dinitrophenol | ND | - | 6.3 | - | - | - | - |
| 2,4-Dinitrotoluene | ND | 4.72 | 0.25 | 5 | - | 94 | 30-130 |
| 2,6-Dinitrotoluene | ND | - | 0.25 | - | - | - | - |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/10/14 | **BatchID:** | 96361 |
| **Date Analyzed:** | 10/10/14 - 10/14/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC21 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96361<br>1410361-001AMS/MSD |

## QC Summary Report for SW8270C

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Di-n-octyl Phthalate | ND | - | 0.50 | - | - | - | - |
| 1,2-Diphenylhydrazine | ND | - | 0.25 | - | - | - | - |
| Fluoranthene | ND | - | 0.25 | - | - | - | - |
| Fluorene | ND | - | 0.25 | - | - | - | - |
| Hexachlorobenzene | ND | - | 0.25 | - | - | - | - |
| Hexachlorobutadiene | ND | - | 0.25 | - | - | - | - |
| Hexachlorocyclopentadiene | ND | - | 1.3 | - | - | - | - |
| Hexachloroethane | ND | - | 0.25 | - | - | - | - |
| Indeno (1,2,3-cd) pyrene | ND | - | 0.25 | - | - | - | - |
| Isophorone | ND | - | 0.25 | - | - | - | - |
| 2-Methylnaphthalene | ND | - | 0.25 | - | - | - | - |
| 2-Methylphenol (o-Cresol) | ND | - | 0.25 | - | - | - | - |
| 3 &/or 4-Methylphenol (m,p-Cresol) | ND | - | 0.25 | - | - | - | - |
| Naphthalene | ND | - | 0.25 | - | - | - | - |
| 2-Nitroaniline | ND | - | 1.3 | - | - | - | - |
| 3-Nitroaniline | ND | - | 1.3 | - | - | - | - |
| 4-Nitroaniline | ND | - | 1.3 | - | - | - | - |
| Nitrobenzene | ND | - | 0.25 | - | - | - | - |
| 2-Nitrophenol | ND | - | 1.3 | - | - | - | - |
| 4-Nitrophenol | ND | 3.98 | 1.3 | 5 | - | 80 | 30-130 |
| N-Nitrosodiphenylamine | ND | - | 0.25 | - | - | - | - |
| N-Nitrosodi-n-propylamine | ND | 4.42 | 0.25 | 5 | - | 88 | 30-130 |
| Pentachlorophenol | ND | 4.69 | 1.3 | 5 | - | 94 | 30-130 |
| Phenanthrene | ND | - | 0.25 | - | - | - | - |
| Phenol | ND | 5.45 | 0.25 | 5 | - | 109 | 30-130 |
| Pyrene | ND | 5.11 | 0.25 | 5 | - | 102 | 30-130 |
| 1,2,4-Trichlorobenzene | ND | 5.77 | 0.25 | 5 | - | 115 | 30-130 |
| 2,4,5-Trichlorophenol | ND | - | 0.25 | - | - | - | - |
| 2,4,6-Trichlorophenol | ND | - | 0.25 | - | - | - | - |
| **Surrogate Recovery** | | | | | | | |
| 2-Fluorophenol | 4.60 | 4.74 | | 5 | 92 | 95 | 30-130 |
| Phenol-d5 | 4.18 | 4.33 | | 5 | 84 | 87 | 30-130 |
| Nitrobenzene-d5 | 3.85 | 4.28 | | 5 | 77 | 86 | 30-130 |
| 2-Fluorobiphenyl | 4.19 | 4.16 | | 5 | 84 | 83 | 30-130 |
| 2,4,6-Tribromophenol | 3.26 | 3.42 | | 5 | 65 | 68 | 16-130 |
| 4-Terphenyl-d14 | 4.42 | 4.59 | | 5 | 88 | 92 | 30-130 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/10/14 | **BatchID:** | 96361 |
| **Date Analyzed:** | 10/10/14 - 10/14/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC21 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96361<br>1410361-001AMS/MSD |

## QC Summary Report for SW8270C

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| 4-Chloro-3-methylphenol | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| 2-Chlorophenol | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| 1,4-Dichlorobenzene | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| 2,4-Dinitrotoluene | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| 4-Nitrophenol | NR | NR | 0 | ND<21 | NR | NR | - | NR | |
| N-Nitrosodi-n-propylamine | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| Pentachlorophenol | NR | NR | 0 | ND<21 | NR | NR | - | NR | |
| Phenol | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| Pyrene | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| 1,2,4-Trichlorobenzene | NR | NR | 0 | ND<4 | NR | NR | - | NR | |
| **Surrogate Recovery** | | | | | | | | | |
| 2-Fluorophenol | NR | NR | 0 | | NR | NR | - | NR | |
| Phenol-d5 | NR | NR | 0 | | NR | NR | - | NR | |
| Nitrobenzene-d5 | NR | NR | 0 | | NR | NR | - | NR | |
| 2-Fluorobiphenyl | NR | NR | 0 | | NR | NR | - | NR | |
| 2,4,6-Tribromophenol | NR | NR | 0 | | NR | NR | - | NR | |
| 4-Terphenyl-d14 | NR | NR | 0 | | NR | NR | - | NR | |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/13/14 | **BatchID:** | 96402 |
| **Date Analyzed:** | 10/13/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC17 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96402<br>1410420-001AMS/MSD |

## QC Summary Report for SW8270C

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 4.72 | 0.25 | 5 | - | 94 | 30-130 |
| Acenaphthylene | ND | - | 0.25 | - | - | - | - |
| Acetochlor | ND | - | 0.25 | - | - | - | - |
| Anthracene | ND | - | 0.25 | - | - | - | - |
| Benzidine | ND | - | 1.3 | - | - | - | - |
| Benzo (a) anthracene | ND | - | 0.25 | - | - | - | - |
| Benzo (b) fluoranthene | ND | - | 0.25 | - | - | - | - |
| Benzo (k) fluoranthene | ND | - | 0.25 | - | - | - | - |
| Benzo (g,h,i) perylene | ND | - | 0.25 | - | - | - | - |
| Benzo (a) pyrene | ND | - | 0.25 | - | - | - | - |
| Benzyl Alcohol | ND | - | 1.3 | - | - | - | - |
| 1,1-Biphenyl | ND | - | 0.25 | - | - | - | - |
| Bis (2-chloroethoxy) Methane | ND | - | 0.25 | - | - | - | - |
| Bis (2-chloroethyl) Ether | ND | - | 0.25 | - | - | - | - |
| Bis (2-chloroisopropyl) Ether | ND | - | 0.25 | - | - | - | - |
| Bis (2-ethylhexyl) Adipate | ND | - | 0.25 | - | - | - | - |
| Bis (2-ethylhexyl) Phthalate | ND | - | 0.25 | - | - | - | - |
| 4-Bromophenyl Phenyl Ether | ND | - | 0.25 | - | - | - | - |
| Butylbenzyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 4-Chloroaniline | ND | - | 0.25 | - | - | - | - |
| 4-Chloro-3-methylphenol | ND | 5.23 | 0.25 | 5 | - | 105 | 30-130 |
| 2-Chloronaphthalene | ND | - | 0.25 | - | - | - | - |
| 2-Chlorophenol | ND | 5.36 | 0.25 | 5 | - | 107 | 30-130 |
| 4-Chlorophenyl Phenyl Ether | ND | - | 0.25 | - | - | - | - |
| Chrysene | ND | - | 0.25 | - | - | - | - |
| Dibenzo (a,h) anthracene | ND | - | 0.25 | - | - | - | - |
| Dibenzofuran | ND | - | 0.25 | - | - | - | - |
| Di-n-butyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 1,2-Dichlorobenzene | ND | - | 0.25 | - | - | - | - |
| 1,3-Dichlorobenzene | ND | - | 0.25 | - | - | - | - |
| 1,4-Dichlorobenzene | ND | 4.81 | 0.25 | 5 | - | 96 | 30-130 |
| 3,3-Dichlorobenzidine | ND | - | 0.50 | - | - | - | - |
| 2,4-Dichlorophenol | ND | - | 0.25 | - | - | - | - |
| Diethyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 2,4-Dimethylphenol | ND | - | 0.25 | - | - | - | - |
| Dimethyl Phthalate | ND | - | 0.25 | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | ND | - | 1.3 | - | - | - | - |
| 2,4-Dinitrophenol | ND | - | 6.3 | - | - | - | - |
| 2,4-Dinitrotoluene | ND | 5.51 | 0.25 | 5 | - | 110 | 30-130 |
| 2,6-Dinitrotoluene | ND | - | 0.25 | - | - | - | - |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/13/14 | **BatchID:** | 96402 |
| **Date Analyzed:** | 10/13/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC17 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96402<br>1410420-001AMS/MSD |

## QC Summary Report for SW8270C

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Di-n-octyl Phthalate | ND | - | 0.50 | - | - | - | - |
| 1,2-Diphenylhydrazine | ND | - | 0.25 | - | - | - | - |
| Fluoranthene | ND | - | 0.25 | - | - | - | - |
| Fluorene | ND | - | 0.25 | - | - | - | - |
| Hexachlorobenzene | ND | - | 0.25 | - | - | - | - |
| Hexachlorobutadiene | ND | - | 0.25 | - | - | - | - |
| Hexachlorocyclopentadiene | ND | - | 1.3 | - | - | - | - |
| Hexachloroethane | ND | - | 0.25 | - | - | - | - |
| Indeno (1,2,3-cd) pyrene | ND | - | 0.25 | - | - | - | - |
| Isophorone | ND | - | 0.25 | - | - | - | - |
| 2-Methylnaphthalene | ND | - | 0.25 | - | - | - | - |
| 2-Methylphenol (o-Cresol) | ND | - | 0.25 | - | - | - | - |
| 3 &/or 4-Methylphenol (m,p-Cresol) | ND | - | 0.25 | - | - | - | - |
| Naphthalene | ND | - | 0.25 | - | - | - | - |
| 2-Nitroaniline | ND | - | 1.3 | - | - | - | - |
| 3-Nitroaniline | ND | - | 1.3 | - | - | - | - |
| 4-Nitroaniline | ND | - | 1.3 | - | - | - | - |
| Nitrobenzene | ND | - | 0.25 | - | - | - | - |
| 2-Nitrophenol | ND | - | 1.3 | - | - | - | - |
| 4-Nitrophenol | ND | 4.58 | 1.3 | 5 | - | 92 | 30-130 |
| N-Nitrosodiphenylamine | ND | - | 0.25 | - | - | - | - |
| N-Nitrosodi-n-propylamine | ND | 3.94 | 0.25 | 5 | - | 79 | 30-130 |
| Pentachlorophenol | ND | 7.12 | 1.3 | 5 | - | 142, F2 | 30-130 |
| Phenanthrene | ND | - | 0.25 | - | - | - | - |
| Phenol | ND | 4.93 | 0.25 | 5 | - | 99 | 30-130 |
| Pyrene | ND | 5.03 | 0.25 | 5 | - | 101 | 30-130 |
| 1,2,4-Trichlorobenzene | ND | 5.75 | 0.25 | 5 | - | 115 | 30-130 |
| 2,4,5-Trichlorophenol | ND | - | 0.25 | - | - | - | - |
| 2,4,6-Trichlorophenol | ND | - | 0.25 | - | - | - | - |
| **Surrogate Recovery** | | | | | | | |
| 2-Fluorophenol | 5.34 | 4.83 | | 5 | 107 | 97 | 30-130 |
| Phenol-d5 | 4.83 | 4.32 | | 5 | 97 | 86 | 30-130 |
| Nitrobenzene-d5 | 4.80 | 4.76 | | 5 | 96 | 95 | 30-130 |
| 2-Fluorobiphenyl | 4.78 | 4.65 | | 5 | 96 | 93 | 30-130 |
| 2,4,6-Tribromophenol | 3.83 | 4.42 | | 5 | 77 | 88 | 16-130 |
| 4-Terphenyl-d14 | 4.95 | 4.90 | | 5 | 99 | 98 | 30-130 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/13/14 | **BatchID:** | 96402 |
| **Date Analyzed:** | 10/13/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC17 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96402<br>1410420-001AMS/MSD |

## QC Summary Report for SW8270C

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| 4-Chloro-3-methylphenol | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| 2-Chlorophenol | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| 1,4-Dichlorobenzene | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| 2,4-Dinitrotoluene | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| 4-Nitrophenol | NR | NR | 0 | ND<10 | NR | NR | - | NR | |
| N-Nitrosodi-n-propylamine | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| Pentachlorophenol | NR | NR | 0 | ND<10 | NR | NR | - | NR | |
| Phenol | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| Pyrene | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| 1,2,4-Trichlorobenzene | NR | NR | 0 | ND<2 | NR | NR | - | NR | |
| **Surrogate Recovery** | | | | | | | | | |
| 2-Fluorophenol | NR | NR | 0 | | NR | NR | - | NR | |
| Phenol-d5 | NR | NR | 0 | | NR | NR | - | NR | |
| Nitrobenzene-d5 | NR | NR | 0 | | NR | NR | - | NR | |
| 2-Fluorobiphenyl | NR | NR | 0 | | NR | NR | - | NR | |
| 2,4,6-Tribromophenol | NR | NR | 0 | | NR | NR | - | NR | |
| 4-Terphenyl-d14 | NR | NR | 0 | | NR | NR | - | NR | |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96308 |
| **Date Analyzed:** | 10/10/14 | **Extraction Method:** | SW3050B |
| **Instrument:** | ICP-MS1 | **Analytical Method:** | SW6020 |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96308<br>1410367-017AMS/MSD |

## QC Summary Report for SW6020

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Antimony | ND | 52.6 | 0.50 | 50 | - | 105 | 75-125 |
| Arsenic | ND | 54.1 | 0.50 | 50 | - | 108 | 75-125 |
| Barium | ND | 522 | 5.0 | 500 | - | 104 | 75-125 |
| Beryllium | ND | 54.2 | 0.50 | 50 | - | 108 | 75-125 |
| Cadmium | ND | 54.7 | 0.25 | 50 | - | 109 | 75-125 |
| Chromium | ND | 51.9 | 0.50 | 50 | - | 104 | 75-125 |
| Cobalt | ND | 55.5 | 0.50 | 50 | - | 111 | 75-125 |
| Copper | ND | 53.6 | 0.50 | 50 | - | 107 | 75-125 |
| Lead | ND | 55.3 | 0.50 | 50 | - | 111 | 75-125 |
| Mercury | ND | 1.22 | 0.050 | 1.25 | - | 97 | 75-125 |
| Molybdenum | ND | 52.5 | 0.50 | 50 | - | 105 | 75-125 |
| Nickel | ND | 53.3 | 0.50 | 50 | - | 107 | 75-125 |
| Selenium | ND | 55.8 | 0.50 | 50 | - | 112 | 75-125 |
| Silver | ND | 56.1 | 0.50 | 50 | - | 112 | 75-125 |
| Thallium | ND | 50.2 | 0.50 | 50 | - | 100 | 75-125 |
| Vanadium | ND | 52.3 | 0.50 | 50 | - | 105 | 75-125 |
| Zinc | ND | 534 | 5.0 | 500 | - | 107 | 75-125 |
| **Surrogate Recovery** | | | | | | | |
| Tb 350.917 | 578 | 559 | | 500 | 116 | 112 | 70-130 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96308 |
| **Date Analyzed:** | 10/10/14 | **Extraction Method:** | SW3050B |
| **Instrument:** | ICP-MS1 | **Analytical Method:** | SW6020 |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96308<br>1410367-017AMS/MSD |

## QC Summary Report for SW6020

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 52.4 | 48.9 | 50 | 0.9178 | 103 | 96 | 75-125 | 6.85 | 20 |
| Arsenic | 60.4 | 57.2 | 50 | 7.658 | 105 | 99 | 75-125 | 5.43 | 20 |
| Barium | 780 | 682 | 500 | 217.5 | 113 | 93 | 75-125 | 13.4 | 20 |
| Beryllium | 50.2 | 48.3 | 50 | ND | 100 | 96 | 75-125 | 3.82 | 20 |
| Cadmium | 53.0 | 50.2 | 50 | ND | 106 | 100 | 75-125 | 5.44 | 20 |
| Chromium | NR | NR | 50 | 52.80 | NR | NR | 75-125 | NR | 20 |
| Cobalt | 61.4 | 60.7 | 50 | 12.65 | 98 | 96 | 75-125 | 1.10 | 20 |
| Copper | 75.4 | 71.9 | 50 | 23.71 | 103 | 96 | 75-125 | 4.77 | 20 |
| Lead | NR | NR | 50 | 77.38 | NR | NR | 75-125 | NR | 20 |
| Mercury | 1.72 | 1.45 | 1.25 | 0.4757 | 100 | 78 | 75-125 | 17.0 | 20 |
| Molybdenum | 51.3 | 49.3 | 50 | 1.325 | 100 | 96 | 75-125 | 3.97 | 20 |
| Nickel | NR | NR | 50 | 89.76 | NR | NR | 75-125 | NR | 20 |
| Selenium | 52.2 | 49.5 | 50 | ND | 104 | 98 | 75-125 | 5.37 | 20 |
| Silver | 52.2 | 51.6 | 50 | ND | 104 | 103 | 75-125 | 1.23 | 20 |
| Thallium | 51.1 | 47.0 | 50 | ND | 102 | 94 | 75-125 | 8.52 | 20 |
| Vanadium | 84.4 | 81.2 | 50 | 38.72 | 91 | 85 | 75-125 | 3.80 | 20 |
| Zinc | 631 | 606 | 500 | 108.6 | 105 | 100 | 75-125 | 4.02 | 20 |
| **Surrogate Recovery** | | | | | | | | | |
| Tb 350.917 | 551 | 530 | 500 | | 110 | 106 | 70-130 | 4.00 | 20 |

*(Cont.)*

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96316 |
| **Date Analyzed:** | 10/10/14 | **Extraction Method:** | SW3050B |
| **Instrument:** | ICP-MS1 | **Analytical Method:** | SW6020 |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96316<br>1410373-016AMS/MSD |

## QC Summary Report for SW6020

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Antimony | ND | 42.4 | 0.50 | 50 | - | 85 | 75-125 |
| Arsenic | ND | 53.5 | 0.50 | 50 | - | 107 | 75-125 |
| Barium | ND | 501 | 5.0 | 500 | - | 100 | 75-125 |
| Beryllium | ND | 50.0 | 0.50 | 50 | - | 100 | 75-125 |
| Cadmium | ND | 52.0 | 0.25 | 50 | - | 104 | 75-125 |
| Chromium | ND | 50.5 | 0.50 | 50 | - | 101 | 75-125 |
| Cobalt | ND | 52.9 | 0.50 | 50 | - | 106 | 75-125 |
| Copper | ND | 51.2 | 0.50 | 50 | - | 102 | 75-125 |
| Lead | ND | 52.5 | 0.50 | 50 | - | 105 | 75-125 |
| Mercury | ND | 0.961 | 0.050 | 1.25 | - | 77 | 75-125 |
| Molybdenum | ND | 42.4 | 0.50 | 50 | - | 85 | 75-125 |
| Nickel | ND | 51.5 | 0.50 | 50 | - | 103 | 75-125 |
| Selenium | ND | 52.6 | 0.50 | 50 | - | 105 | 75-125 |
| Silver | ND | 53.6 | 0.50 | 50 | - | 107 | 75-125 |
| Thallium | ND | 47.8 | 0.50 | 50 | - | 96 | 75-125 |
| Vanadium | ND | 50.5 | 0.50 | 50 | - | 101 | 75-125 |
| Zinc | ND | 508 | 5.0 | 500 | - | 101 | 75-125 |
| **Surrogate Recovery** | | | | | | | |
| Tb 350.917 | 630 | 527 | | 500 | 126 | 105 | 70-130 |

*(Cont.)*

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96316 |
| **Date Analyzed:** | 10/10/14 | **Extraction Method:** | SW3050B |
| **Instrument:** | ICP-MS1 | **Analytical Method:** | SW6020 |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96316<br>1410373-016AMS/MSD |

## QC Summary Report for SW6020

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | 54.0 | 50.2 | 50 | ND | 107 | 100 | 75-125 | 7.16 | 20 |
| Arsenic | 60.9 | 59.8 | 50 | 3.408 | 115 | 113 | 75-125 | 1.76 | 20 |
| Barium | 669 | 614 | 500 | 83.05 | 117 | 106 | 75-125 | 8.48 | 20 |
| Beryllium | 49.7 | 45.3 | 50 | ND | 99 | 90 | 75-125 | 9.24 | 20 |
| Cadmium | 56.2 | 51.9 | 50 | ND | 112 | 103 | 75-125 | 7.99 | 20 |
| Chromium | 98.3 | 101 | 50 | 43.92 | 109 | 114 | 75-125 | 2.64 | 20 |
| Cobalt | 67.0 | 62.8 | 50 | 10.92 | 112 | 104 | 75-125 | 6.52 | 20 |
| Copper | 87.2 | 86.8 | 50 | 28.54 | 117 | 116 | 75-125 | 0.540 | 20 |
| Lead | 61.4 | 57.6 | 50 | 3.917 | 115 | 107 | 75-125 | 6.39 | 20 |
| Mercury | 1.29 | 1.29 | 1.25 | 0.08940 | 96 | 96 | 75-125 | 0 | 20 |
| Molybdenum | 55.0 | 50.7 | 50 | ND | 109 | 101 | 75-125 | 8.12 | 20 |
| Nickel | 104 | 108 | 50 | 43.46 | 122 | 129,F1 | 75-125 | 3.39 | 20 |
| Selenium | 55.5 | 52.3 | 50 | ND | 110 | 104 | 75-125 | 5.82 | 20 |
| Silver | 57.7 | 53.5 | 50 | ND | 115 | 107 | 75-125 | 7.61 | 20 |
| Thallium | 51.5 | 47.4 | 50 | ND | 103 | 95 | 75-125 | 8.35 | 20 |
| Vanadium | 111 | 112 | 50 | 57.44 | 108 | 110 | 75-125 | 0.716 | 20 |
| Zinc | 582 | 556 | 500 | 41.84 | 108 | 103 | 75-125 | 4.73 | 20 |
| **Surrogate Recovery** | | | | | | | | | |
| Tb 350.917 | 575 | 524 | 500 | | 115 | 105 | 70-130 | 9.22 | 20 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96311 |
| **Date Analyzed:** | 10/10/14 | **Extraction Method:** | SW5030B |
| **Instrument:** | GC7 | **Analytical Method:** | SW8021B/8015Bm |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96311<br>1410370-014AMS/MSD |

## QC Summary Report for SW8021B/8015Bm

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| TPH(btex) | ND | 0.659 | 0.40 | 0.60 | - | 110 | 70-130 |
| MTBE | ND | 0.0888 | 0.050 | 0.10 | - | 89 | 70-130 |
| Benzene | ND | 0.109 | 0.0050 | 0.10 | - | 109 | 70-130 |
| Toluene | ND | 0.108 | 0.0050 | 0.10 | - | 108 | 70-130 |
| Ethylbenzene | ND | 0.114 | 0.0050 | 0.10 | - | 114 | 70-130 |
| Xylenes | ND | 0.352 | 0.0050 | 0.30 | - | 117 | 70-130 |
| **Surrogate Recovery** | | | | | | | |
| 2-Fluorotoluene | 0.109 | 0.107 | | 0.10 | 109 | 107 | 70-130 |

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| TPH(btex) | 0.632 | 0.669 | 0.60 | ND | 105 | 112 | 70-130 | 5.77 | 20 |
| MTBE | 0.0875 | 0.0897 | 0.10 | ND | 88 | 90 | 70-130 | 2.47 | 20 |
| Benzene | 0.101 | 0.110 | 0.10 | ND | 101 | 110 | 70-130 | 8.27 | 20 |
| Toluene | 0.101 | 0.110 | 0.10 | ND | 101 | 109 | 70-130 | 8.27 | 20 |
| Ethylbenzene | 0.107 | 0.116 | 0.10 | ND | 107 | 116 | 70-130 | 8.20 | 20 |
| Xylenes | 0.336 | 0.364 | 0.30 | ND | 112 | 121 | 70-130 | 8.06 | 20 |
| **Surrogate Recovery** | | | | | | | | | |
| 2-Fluorotoluene | 0.0991 | 0.108 | 0.10 | | 99 | 108 | 70-130 | 8.57 | 20 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96310 |
| **Date Analyzed:** | 10/11/14 - 10/16/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC11A, GC9a | **Analytical Method:** | SW8015B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96310 |

## QC Summary Report for SW8015B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 47.8 | 1.0 | 40 | - | 120 | 70-130 |
| **Surrogate Recovery** | | | | | | | |
| C9 | 28.6 | 28.8 | | 25 | 115 | 115 | 70-130 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/9/14 | **BatchID:** | 96315 |
| **Date Analyzed:** | 10/10/14 - 10/13/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC11A, GC6A | **Analytical Method:** | SW8015B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96315<br>1410373-016AMS/MSD |

## QC Summary Report for SW8015B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 46.6 | 1.0 | 40 | - | 114 | 70-130 |
| **Surrogate Recovery** | | | | | | | |
| C9 | 21.1 | 28.7 | | 25 | 84 | 115 | 70-130 |

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| TPH-Diesel (C10-C23) | 46.9 | 46.1 | 40 | ND | 115 | 113 | 70-130 | 1.84 | 30 |
| **Surrogate Recovery** | | | | | | | | | |
| C9 | 29.2 | 29.3 | 25 | | 117 | 117 | 70-130 | 0 | 30 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/11/14 | **BatchID:** | 96383 |
| **Date Analyzed:** | 10/12/14 - 10/14/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC11A, GC2B | **Analytical Method:** | SW8015B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96383 |

## QC Summary Report for SW8015B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 42.8 | 1.0 | 40 | - | 107 | 70-130 |
| **Surrogate Recovery** | | | | | | | |
| C9 | 29.4 | 27.6 | | 25 | 117 | 110 | 70-130 |

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CDPH ELAP 1644 ♦ NELAP 4033ORELAP

QA/QC Officer

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/13/14 | **BatchID:** | 96403 |
| **Date Analyzed:** | 10/14/14 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC6B | **Analytical Method:** | SW8015B |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96403<br>1410256-001AMS/MSD |

## QC Summary Report for SW8015B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| TPH-Diesel (C10-C23) | ND | 45.7 | 1.0 | 40 | - | 112 | 70-130 |
| **Surrogate Recovery** | | | | | | | |
| C9 | 25.0 | 28.3 | | 25 | 100 | 113 | 70-130 |

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| TPH-Diesel (C10-C23) | NR | NR | 0 | 28 | NR | NR | - | NR | |
| **Surrogate Recovery** | | | | | | | | | |
| C9 | NR | NR | 0 | | NR | NR | - | NR | |

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# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1410373** **ClientCode: TWRF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Peter Cusack
Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111
(415) 955-5244 FAX: (415) 955-9041

Email: pcusack@langan.com
cc/3rd Party:
PO:
ProjectNo: #770619001; The Oaks

**Bill to:**
Accounts Payable
Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111
Langan_InvoiceCapture@concursolut

**Requested TAT:** 5 days

***Date Received:*** **10/09/2014**
***Date Printed:*** **10/13/2014**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1410373-001 | B-1-2.5 | Soil | 10/2/2014 | ☐ | A | | | A | A | | | | | | | |
| 1410373-002 | B-1-5.5 | Soil | 10/2/2014 | ☐ | | A | A | | A | A | | | | | | |
| 1410373-004 | B-1-10.5 | Soil | 10/2/2014 | ☐ | | | | A | A | | | | | | | |
| 1410373-006 | B-1-17.5 | Soil | 10/2/2014 | ☐ | | | | | A | A | | | | | | |
| 1410373-007 | B-2-3.0 | Soil | 10/2/2014 | ☐ | A | | | | A | A | | | | | | |
| 1410373-008 | B-2-5.0 | Soil | 10/2/2014 | ☐ | | A | A | | A | A | | | | | | |
| 1410373-009 | B-2-10.5 | Soil | 10/2/2014 | ☐ | | | | A | A | | | | | | | |
| 1410373-010 | B-2-15.5 | Soil | 10/2/2014 | ☐ | | | | | A | A | | | | | | |
| 1410373-012 | B-3-3.0 | Soil | 10/3/2014 | ☐ | A | | | A | A | | | | | | | |
| 1410373-013 | B-3-5.5 | Soil | 10/3/2014 | ☐ | | | | | A | A | | | | | | |
| 1410373-014 | B-3-8.0 | Soil | 10/3/2014 | ☐ | | | | A | A | | | | | | | |
| 1410373-016 | B-3-15.5 | Soil | 10/3/2014 | ☐ | | A | A | A | A | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 8081PCB_S | 2 | 8260B_S | 3 | 8270D_S | 4 | CAM17MS_S | 5 | G-MBTEX_S |
| 6 | LUFTMS_S | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

The following SampIDs: 001A, 002A, 004A, 006A, 007A, 008A, 009A, 010A, 012A, 013A, 014A, 016A contain testgroup.

**Prepared by: Ana Venegas**

**Comments:** SEND HARD COPY/ Always notify the PM when TAT is not going to bet met! JEL 9-9-14

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

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# WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO
**Project:** #770619001; The Oaks
**Comments:** SEND HARD COPY/ Always notify the PM when TAT is not going to bet met! JEL 9-9-14

**QC Level:** LEVEL 2
**Client Contact:** Peter Cusack
**Contact's Email:** pcusack@langan.com

**Work Order:** 1410373
**Date Received:** 10/9/2014

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

| Lab ID | Client ID | Matrix | Test Name | Number of Containers | Bottle & Preservative | De-chlorinated | Collection Date & Time | TAT | Sediment Content | Hold | SubOut |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1410373-001A | B-1-2.5 | Soil | Multi-Range TPH(g,d,mo) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | SW6020 (CAM 17) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8081A/8082 (OC Pesticides+PCBs) | | | ☐ | | 5 days | | ☐ | |
| 1410373-002A | B-1-5.5 | Soil | SW6020 (LUFT) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | Multi-Range TPH(g,d,mo) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8270C (SVOCs) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8260B (VOCs) | | | ☐ | | 5 days | | ☐ | |
| 1410373-003A | B-1-8.5 | Soil | | 1 | Big Stainless Tube | ☐ | 10/2/2014 | | | ☑ | |
| 1410373-004A | B-1-10.5 | Soil | Multi-Range TPH(g,d,mo) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | SW6020 (CAM 17) | | | ☐ | | 5 days | | ☐ | |
| 1410373-005A | B-1-16.5 | Soil | | 1 | Big Stainless Tube | ☐ | 10/2/2014 | | | ☑ | |
| 1410373-006A | B-1-17.5 | Soil | SW6020 (LUFT) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | Multi-Range TPH(g,d,mo) | | | ☐ | | 5 days | | ☐ | |
| 1410373-007A | B-2-3.0 | Soil | SW6020 (LUFT) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | Multi-Range TPH(g,d,mo) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8081A/8082 (OC Pesticides+PCBs) | | | ☐ | | 5 days | | ☐ | |
| 1410373-008A | B-2-5.0 | Soil | Multi-Range TPH(g,d,mo) | 1 | Plastic Baggie, Medium | ☐ | 10/2/2014 | 5 days | | ☐ | |

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Big Stainless Tube =
Plastic Baggie, Medium = Medium Plastic Baggie

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# WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO
**Project:** #770619001; The Oaks
**Comments:** SEND HARD COPY/ Always notify the PM when TAT is not going to bet met! JEL 9-9-14

**QC Level:** LEVEL 2
**Client Contact:** Peter Cusack
**Contact's Email:** pcusack@langan.com

**Work Order:** 1410373
**Date Received:** 10/9/2014

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

| Lab ID | Client ID | Matrix | Test Name | Number of Containers | Bottle & Preservative | De-chlorinated | Collection Date & Time | TAT | Sediment Content | Hold | SubOut |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1410373-008A | B-2-5.0 | Soil | SW6020 (LUFT) | 1 | Plastic Baggie, Medium | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | SW8270C (SVOCs) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8260B (VOCs) | | | ☐ | | 5 days | | ☐ | |
| 1410373-009A | B-2-10.5 | Soil | Multi-Range TPH(g,d,mo) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | SW6020 (CAM 17) | | | ☐ | | 5 days | | ☐ | |
| 1410373-010A | B-2-15.5 | Soil | SW6020 (LUFT) | 1 | Big Stainless Tube | ☐ | 10/2/2014 | 5 days | | ☐ | |
| | | | Multi-Range TPH(g,d,mo) | | | ☐ | | 5 days | | ☐ | |
| 1410373-011A | B-2-20.5 | Soil | | 1 | Big Stainless Tube | ☐ | 10/2/2014 | | | ☑ | |
| 1410373-012A | B-3-3.0 | Soil | Multi-Range TPH(g,d,mo) | 1 | Big Stainless Tube | ☐ | 10/3/2014 | 5 days | | ☐ | |
| | | | SW6020 (CAM 17) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8081A/8082 (OC Pesticides+PCBs) | | | ☐ | | 5 days | | ☐ | |
| 1410373-013A | B-3-5.5 | Soil | SW6020 (LUFT) | 1 | Big Stainless Tube | ☐ | 10/3/2014 | 5 days | | ☐ | |
| | | | Multi-Range TPH(g,d,mo) | | | ☐ | | 5 days | | ☐ | |
| 1410373-014A | B-3-8.0 | Soil | Multi-Range TPH(g,d,mo) | 1 | Big Stainless Tube | ☐ | 10/3/2014 | 5 days | | ☐ | |
| | | | SW6020 (CAM 17) | | | ☐ | | 5 days | | ☐ | |
| 1410373-015A | B-3-10.5 | Soil | | 1 | Big Stainless Tube | ☐ | 10/3/2014 | | | ☑ | |
| 1410373-016A | B-3-15.5 | Soil | Multi-Range TPH(g,d,mo) | 1 | Big Stainless Tube | ☐ | 10/3/2014 | 5 days | | ☐ | |

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Big Stainless Tube =
Plastic Baggie, Medium = Medium Plastic Baggie

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# WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO
**QC Level:** LEVEL 2
**Work Order:** 1410373
**Project:** #770619001; The Oaks
**Client Contact:** Peter Cusack
**Date Received:** 10/9/2014
**Comments:** SEND HARD COPY/ Always notify the PM when TAT is not going to bet met! JEL 9-9-14
**Contact's Email:** pcusack@langan.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

| Lab ID | Client ID | Matrix | Test Name | Number of Containers | Bottle & Preservative | De-chlorinated | Collection Date & Time | TAT | Sediment Content | Hold | SubOut |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1410373-016A | B-3-15.5 | Soil | SW6020 (CAM 17) | 1 | Big Stainless Tube | ☐ | 10/3/2014 | 5 days | | ☐ | |
| | | | SW8270C (SVOCs) | | | ☐ | | 5 days | | ☐ | |
| | | | SW8260B (VOCs) | | | ☐ | | 5 days | | ☐ | |
| 1410373-017A | B-3-20 | Soil | | 1 | Big Stainless Tube | ☐ | 10/3/2014 | | | ☑ | |
| 1410373-018A | B-1-5@8' | Soil | | 1 | Big Stainless Tube | ☐ | 10/3/2014 | | | ☑ | |
| 1410373-019A | B-1-10@17' | Soil | | 1 | Big Stainless Tube | ☐ | 10/3/2014 | | | ☑ | |
| 1410373-020A | B-1-12@20.5' | Soil | | 1 | Big Stainless Tube | ☐ | 10/3/2014 | | | ☑ | |
| 1410373-021A | B-2-4@7.5' | Soil | | 1 | Plastic Baggie, Medium | ☐ | 10/3/2014 | | | ☑ | |

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Big Stainless Tube =
Plastic Baggie, Medium = Medium Plastic Baggie

1410373

**Treadwell&Rollo**
*Environmental and Geotechnical Consultant*

# CHAIN OF CUSTODY RECORD

Page 1 of 2

[X] 555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
[ ] 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
[ ] 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: The Oaks
Job Number: 770619001
Project Manager\Contact: P. Cusack
Samplers: M. Lattin
Recorder (Signature Required):

Turnaround Time: Standard

| Field Sample Identification No. | Date | Time | Lab Sample No. | Matrix: Soil | Matrix: Water | Matrix: Other | No. Containers & Preservative: HCL | $H_2SO_4$ | $HNO_3$ | Ice | Other | Analysis Requested: TPHg d, mo | VOCs | SVOCs | Pesticides/PCBs | CAM 17 Metals | LUFT 5 Metals | | | | | | | Silica gel clean-up | Hold | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-1-2.5 | 10/02/14 | | | X | | | | | | | X | X | | | X | X | | | | | | | | | | |
| B-1-5.5 | | | | | | | | | | | | X | X | X | | | X | | | | | | | | | |
| B-1-8.5 | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| B-1-10.5 | | | | | | | | | | | | X | | | | X | | | | | | | | | | |
| B-1-16.5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B-1-17.5 | | | | | | | | | | | | X | | | | | X | | | | | | | | | |
| B-2-3.0 | | | | | | | | | | | | X | | | X | | X | | | | | | | | | |
| B-2-5.0 | | | | | | | | | | | | X | X | X | | | X | | | | | | | | | |
| B-2-10.5 | | | | | | | | | | | | X | | | | X | | | | | | | | | | |
| B-2-15.5 | | | | | | | | | | | | X | | | | | X | | | | | | | | | |
| B-2-20.5 | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| B-3-3.0 | 10/03/14 | | | | | | | | | | | X | | | X | X | | | | | | | | | | |
| B-3-5.5 | | | | | | | | | | | | X | | | | | X | | | | | | | | | |
| B-3-8.0 | | | | | | | | | | | | X | | | | X | | | | | | | | | | |

MP

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Mukta Patil | 10/08/14 | 1350 | [signature] | 10/8/14 | 1350 |
| [signature] | 10/8/14 | 1645 | [signature] | 10/8/14 | 1645 |
| | | | Received by Lab: (Signature) | | |

Sent to Laboratory (Name): McCampbell
Laboratory Comments/Notes:

Method of Shipment: [✓] Lab courier [ ] Fed Ex [ ] Airborne [ ] UPS [ ] Hand Carried [ ] Private Courier (Co. Name)

White Copy - Original  Yellow Copy - Laboratory  Pink Copy - Field  COC Number: 006225

ICE 1.6
GOOD CONDITION ____ APPROPRIATE
HEAD SPACE ABSENT ____ CONTAINERS ____
DECHLORINATED IN LAB ____ PRESERVED IN LAB ____
VOAS | O & G | METALS | OTHER

**Treadwell&Rollo**
*Environmental and Geotechnical Consultant*

# CHAIN OF CUSTODY RECORD

Page 2 of ___

- [ ] 555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
- [ ] 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
- [ ] 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

**Site Name:** _____
**Job Number:** _____
**Project Manager\Contact:** _____
**Samplers:** _____
**Recorder (Signature Required):** _____

**Turnaround Time:** Standard

| Field Sample Identification No. | Date | Time | Lab Sample No. | Matrix: Soil | Matrix: Water | Matrix: Other | No. Containers & Preservative: HCL | $H_2SO_4$ | $HNO_3$ | Ice | Other | Analysis Requested: TP+1g.d. wo | VOCs | SVOCs | Pesticides/PCBs | CAM 17 Metals | LUFT 5 Metals | | | | | | | Silica gel clean-up | Hold | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-3-10.5 | 10/03/14 | | | X | | | | | | | X | | | | | | | | | | | | | | X | |
| B-3-15.5 | ↓ | | | ↓ | | | | | | | ↓ | X | X | X | | X | | | | | | | | | | |
| B-3-20 | ↓ | | | ↓ | | | | | | | ↓ | | | | | | | | | | | | | | X | |
| MP | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *B-1-5@8' | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| *B-1-10@17' | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| *B-1-12@20.5' | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| *B-2-4@7.5' | | | | | | | | | | | | | | | | | | | | | | | | | X | |

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| [signature] | 10/8/14 | 1350 | [signature] | 10/8/14 | 1350 |
| [signature] | 10/8/14 | 1645 | [signature] | 10/8/14 | 1645 |
| | | | | | |

**Sent to Laboratory (Name):** _____
**Laboratory Comments/Notes:**

**Method of Shipment** [ ] Lab courier [ ] Fed Ex [ ] Airborne [ ] UPS [ ] Hand Carried [ ] Private Courier (Co. Name) _____

White Copy - Original  Yellow Copy - Laboratory  Pink Copy - Field  COC Number: 005448

*EXTRA SAMPLES RECEIVED NOT ON COC placed on Hold 10/9/14 a.v

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# Sample Receipt Checklist

Client Name: **Treadwell & Rollo**
Date and Time Received: **10/9/2014 9:28:17 PM**

Project Name: **#770619001; The Oaks**
LogIn Reviewed by: Ana Venegas

WorkOrder №: **1410373** Matrix: Soil
Carrier: Benjamin Yslas (MAI Courier)

## Chain of Custody (COC) Information

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

## Sample Receipt Information

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

## Sample Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 1.6°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☐ | No ☐ | NA ☑ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |
| | (Ice Type: WET ICE ) | | |
| Total Chlorine tested and acceptable upon receipt for EPA 522? | Yes ☐ | No ☐ | NA ☑ |

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

Comments:

McCampbell Analytical, Inc.

*"When Quality Counts"*

# Analytical Report

**WorkOrder:** 1410373 A

**Report Created for:** Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

**Project Contact:** Peter Cusack
**Project P.O.:**
**Project Name:** #770619001; The Oaks

**Project Received:** 10/09/2014

Analytical Report reviewed & approved for release on 10/24/2014 by:

*Question about your data?*

*Click here to email McCampbell*



Angela Rydelius,
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***

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# Glossary of Terms & Qualifier Definitions

**Client:** Treadwell & Rollo
**Project:** #770619001; The Oaks
**WorkOrder:** 1410373

## Glossary Abbreviation

| | |
|---|---|
| 95% Interval | 95% Confident Interval |
| DF | Dilution Factor |
| DUP | Duplicate |
| EDL | Estimated Detection Limit |
| ITEF | International Toxicity Equivalence Factor |
| LCS | Laboratory Control Sample |
| MB | Method Blank |
| MB % Rec | % Recovery of Surrogate in Method Blank, if applicable |
| MDL | Method Detection Limit |
| ML | Minimum Level of Quantitation |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| ND | Not detected at or above the indicated MDL or RL |
| NR | Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content. |
| PF | Prep Factor |
| RD | Relative Difference |
| RL | Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.) |
| RPD | Relative Percent Deviation |
| RRT | Relative Retention Time |
| SPK Val | Spike Value |
| SPKRef Val | Spike Reference Value |
| TEQ | Toxicity Equivalence |

## Analytical Qualifiers

| | |
|---|---|
| e2 | diesel range compounds are significant; no recognizable pattern |
| e7 | oil range compounds are significant |

## Quality Control Qualifiers

| | |
|---|---|
| F1 | MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch. |
| F2 | LCS recovery for this compound is outside of acceptance limits. |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | CA Title 22 |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6020 |
| **Date Prepared:** | 10/20/14 | **Unit:** | mg/L |

## Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-8.0** | **1410373-014A** | **Soil/WET** | **10/03/2014** | **ICP-MS2** | **96731** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | ND | 0.10 | 1 | 10/23/2014 14:11 |

Analyst(s): DVH

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | CA Title 22 |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6010B |
| **Date Prepared:** | 10/20/14 | **Unit:** | mg/L |

## Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-2.5** | **1410373-001A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | **0.11** | 0.050 | 1 | 10/23/2014 17:03 |

Analyst(s): DVH

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-5.5** | **1410373-002A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | **0.22** | 0.050 | 1 | 10/23/2014 17:06 |

Analyst(s): DVH

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-10.5** | **1410373-004A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | ND | 0.050 | 1 | 10/23/2014 17:08 |

Analyst(s): DVH

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-1-17.5** | **1410373-006A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | ND | 0.050 | 1 | 10/23/2014 17:15 |

Analyst(s): DVH

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Project:** | #770619001; The Oaks | **Extraction Method:** | CA Title 22 |
| **Date Received:** | 10/9/14 21:28 | **Analytical Method:** | SW6010B |
| **Date Prepared:** | 10/20/14 | **Unit:** | mg/L |

## Metals

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-3.0** | **1410373-007A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | **0.057** | 0.050 | 1 | 10/23/2014 17:18 |

Analyst(s): DVH

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-5.0** | **1410373-008A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | ND | 0.050 | 1 | 10/24/2014 10:02 |

Analyst(s): AG

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-2-10.5** | **1410373-009A** | **Soil/WET** | **10/02/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | ND | 0.050 | 1 | 10/23/2014 17:20 |

Analyst(s): DVH

| Client ID | Lab ID | Matrix/ExtType | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **B-3-3.0** | **1410373-012A** | **Soil/WET** | **10/03/2014** | **ICP-JY** | **96811** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Chromium | **0.064** | 0.050 | 1 | 10/23/2014 17:22 |

Analyst(s): DVH

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/20/14 | **BatchID:** | 96731 |
| **Date Analyzed:** | 10/23/14 | **Extraction Method:** | CA Title 22 |
| **Instrument:** | ICP-MS2 | **Analytical Method:** | SW6020 |
| **Matrix:** | Soil | **Unit:** | mg/L |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96731<br>1410373-014AMS/MSD |

## QC Summary Report for SW6020

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Chromium | ND | 9.52 | 0.10 | 10 | - | 95 | 75-125 |

| Analyte | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 8.86 | 8.81 | 10 | ND | 89 | 88 | 75-125 | 0.566 | 20 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Treadwell & Rollo | **WorkOrder:** | 1410373 |
| **Date Prepared:** | 10/22/14 | **BatchID:** | 96811 |
| **Date Analyzed:** | 10/23/14 | **Extraction Method:** | CA Title 22 |
| **Instrument:** | ICP-JY | **Analytical Method:** | SW6010B |
| **Matrix:** | Soil | **Unit:** | mg/L |
| **Project:** | #770619001; The Oaks | **Sample ID:** | MB/LCS-96811 |

## QC Summary Report for SW6010B

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Chromium | ND | 0.992 | 0.050 | 1 | - | 99 | 75-125 |

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Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1410373 A** **ClientCode: TWRF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Peter Cusack
Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111
(415) 955-5244 FAX: (415) 955-9041

Email: pcusack@langan.com
cc/3rd Party:
PO:
ProjectNo: #770619001; The Oaks

**Bill to:**
Accounts Payable
Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111
Langan_InvoiceCapture@concursolut

**Requested TAT:** 5 days
***Date Received:*** **10/09/2014**
***Date Add-On:*** **10/20/2014**
***Date Printed:*** **10/21/2014**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1410373-001 | B-1-2.5 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-002 | B-1-5.5 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-004 | B-1-10.5 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-006 | B-1-17.5 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-007 | B-2-3.0 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-008 | B-2-5.0 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-009 | B-2-10.5 | Soil | 10/2/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-012 | B-3-3.0 | Soil | 10/3/2014 | ☐ | A | | | | | | | | | | | |
| 1410373-014 | B-3-8.0 | Soil | 10/3/2014 | ☐ | A | | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | STLCMETALMS_S | 2 | | 3 | | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Ana Venegas**

**Add-On Prepared By: Maria Venegas**

**Comments:** SEND HARD COPY/ Always notify the PM when TAT is not going to bet met! JEL 9-9-14. STLC Cr added 10/20/14 STAT.

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

McCampbell Analytical, Inc.
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO
**Project:** #770619001; The Oaks
**Comments:** SEND HARD COPY/ Always notify the PM when TAT is not going to bet met! JEL 9-9-14. STLC Cr added 10/20/14 STAT.

**QC Level:** LEVEL 2
**Client Contact:** Peter Cusack
**Contact's Email:** pcusack@langan.com

**Work Order:** 1410373
**Date Received:** 10/9/2014
**Date Add-On:** 10/20/2014

| Lab ID | Client ID | Matrix | Test Name | Number of Containers | Bottle & Preservative | Collection Date & Time | TAT | Sediment Content | Hold | SubOut |
|---|---|---|---|---|---|---|---|---|---|---|
| 1410373-001A | B-1-2.5 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-002A | B-1-5.5 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-004A | B-1-10.5 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-006A | B-1-17.5 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-007A | B-2-3.0 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-008A | B-2-5.0 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Plastic Baggie, Medium | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-009A | B-2-10.5 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/2/2014 | 5 days* | | ☐ | |
| 1410373-012A | B-3-3.0 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/3/2014 | 5 days* | | ☐ | |
| 1410373-014A | B-3-8.0 | Soil | SW6020 (Metals) (STLC) <Chromium> | 1 | Big Stainless Tube | 10/3/2014 | 5 days* | | ☐ | |

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

**Bottle Legend:**

Big Stainless Tube =
Plastic Baggie, Medium = Medium Plastic Baggie

1410373

**Treadwell&Rollo**
Environmental and Geotechnical Consultant

# CHAIN OF CUSTODY RECORD

Page 1 of 2

[X] 555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
[ ] 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
[ ] 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: The Oaks
Job Number: 770619001
Project Manager\Contact: P. Cusack
Samplers: M. Lattin
Recorder (Signature Required):

Turnaround Time: Standard

| Field Sample Identification No. | Date | Time | Lab Sample No. | Matrix: Soil | Matrix: Water | Matrix: Other | No. Containers & Preservative: HCL | $H_2SO_4$ | $HNO_3$ | Ice | Other | Analysis Requested: TPHg d.mo | VOCs | SVOCs | Pesticides/PCBs | GAM 17 Metals | LUFT 5 Metals | STLC Cr | Silica gel clean-up | Hold | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-1-2.5 | 10/02/14 | | | X | | | | | | | X | X | | | X | X | | X | | | |
| B-1-5.5 | | | | | | | | | | | | X | X | X | | | X | X | | | |
| B-1-8.5 | | | | | | | | | | | | | | | | | | | | X | |
| B-1-10.5 | | | | | | | | | | | | X | | | | X | | X | | | |
| B-1-16.5 | | | | | | | | | | | | | | | | | | | | | |
| B-1-17.5 | | | | | | | | | | | | X | | | | | X | X | | | |
| B-2-3.0 | | | | | | | | | | | | X | | | X | | X | X | | | |
| B-2-5.0 | | | | | | | | | | | | X | X | X | | | X | X | | | |
| B-2-10.5 | | | | | | | | | | | | X | | | | X | | X | | | |
| B-2-15.5 | | | | | | | | | | | | X | | | | | X | | | | |
| B-2-20.5 | | | | | | | | | | | | | | | | | | | | X | |
| B-3-3.0 | 10/03/14 | | | | | | | | | | | X | | | X | X | | X | | | |
| B-3-5.5 | | | | | | | | | | | | X | | | | | X | | | | |
| B-3-8.0 | | | | | | | | | | | | X | | | X | X | | X | | | |

MP

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| Mukta Patil | 10/08/14 | 1350 | [signature] | 10/8/14 | 1350 |
| [signature] | 10/8/14 | 1645 | [signature] | 10/8/14 | 1645 |
| | | | Received by Lab: (Signature) | | |

Sent to Laboratory (Name): McCampbell
Laboratory Comments/Notes: added 10/20/14 STAT

Method of Shipment: [✓] Lab courier [ ] Fed Ex [ ] Airborne [ ] UPS [ ] Hand Carried [ ] Private Courier (Co. Name)

White Copy - Original  Yellow Copy - Laboratory  Pink Copy - Field  COC Number: 006225

ICE 1.6
GOOD CONDITION ____ APPROPRIATE
HEAD SPACE ABSENT ____ CONTAINERS ____
DECHLORINATED IN LAB ____ PRESERVED IN LAB ____
VOAS | O & G | METALS | OTHER