

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<sup>1</sup> 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.

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<sup>1</sup> "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**

Langan Project: 770619001  
 January 2015

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)

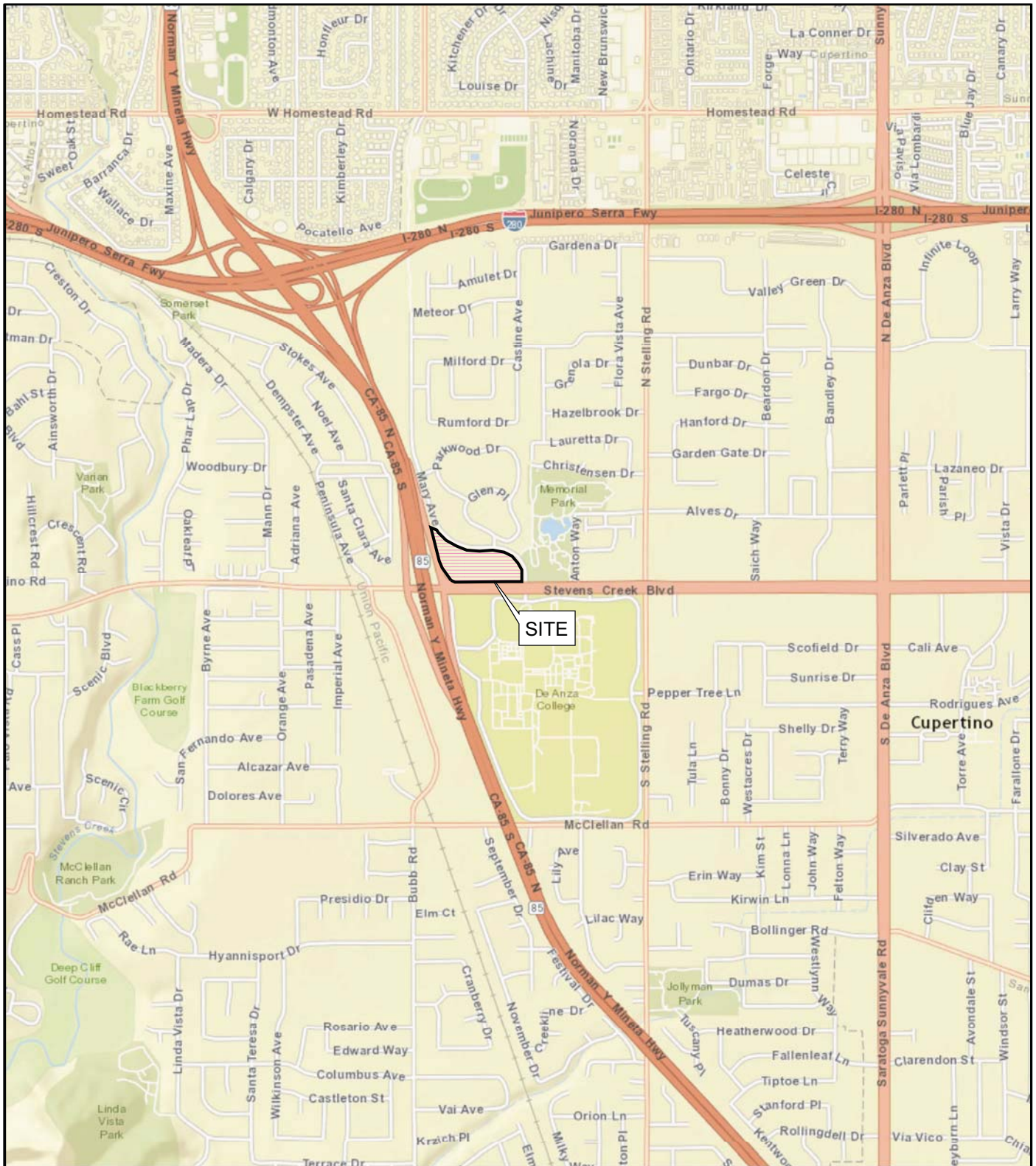
-- Not analyzed or criteria not established

**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																				
TTLIC	(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)		--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--

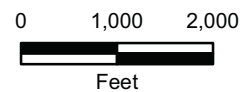
Notes:  
 mg/kg - milligrams per kilograms  
 mg/L - milligrams per liter  
 < 0.5 - Analyte was not detected above the laboratory reporting limit (0.5 mg/kg)  
 -- Not analyzed or criteria not established  
 TTLIC - California Total Threshold Limit Concentration - State hazardous waste criterion  
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

## **FIGURES**



**NOTES:**

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 10/09/14



Project No. 770619001

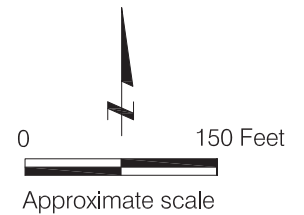
Figure 1

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**EXPLANATION**

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



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

**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)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES			SPT N-Value <sup>1</sup>	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
	Sampler Type	Sample	Blows/ 6"									
Ground Surface Elevation: 290.5 feet <sup>2</sup>												
1	BULK	⊗			CL	1.5 inches asphalt concrete (AC)						
2	S&H	■	24		CL	2 inches aggregate base (AB)						
3	S&H	■	36	46	CL	SANDY CLAY with GRAVEL (CL) red-brown, dry, fine gravel up to 3/4 inch in diameter						
4	BULK	⊗			CL	SANDY CLAY with GRAVEL (CL) 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	S&H	■	31		CL							
6	S&H	■	49	61	CL	increase in clay content						
7	S&H	■	38		CL							
8	S&H	■	29	77	CL	SANDY CLAY (CL) brown, hard, dry, fine-grained sand						
9	S&H	■	60	10"	CL							
10	S&H	■	50/4"		SP-SC	SAND with CLAY and GRAVEL (SP-SC) 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					3.7	109
11	S&H	■	12	63/9"	SP-SC							
12	S&H	■	40		SP-SC	increase in gravel content and angularity						
13	S&H	■	21		SP-SC							
14	S&H	■	14	73	SP-SC							
15	SPT	●	26		SP-SC							
16	S&H	■	40		SP-SC							
17	S&H	■	21	47	SP	SAND (SP) brown, very dense, dry, fine-grained, trace fine angular gravel						
18	S&H	■	14		SP							
19	S&H	■	21	46	SP							
20	S&H	■	34	49/6"	CL	CLAY with GRAVEL (CL) brown, hard, dry, fine- to coarse angular gravel up to 1 inch in diameter, some fine- to coarse-grained sand						
21	S&H	■	70/6"		CL	increase in gravel size; up to 2.5 inches in diameter to fragmented cobbles						
22	S&H	■	6		CL							
23	S&H	■	47	46/6"	CL	decrease in gravel size up to 1 inch in diameter						
24	S&H	■	65/6"		CL	SAND with GRAVEL (SP) 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
25	S&H	■	6		CL							
26	S&H	■	6		CL							
27	S&H	■	6		CL							
28	S&H	■	6		CL							
29	S&H	■	6		CL							
30	S&H	■	6		CL							

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

**LANGAN TREADWELL ROLLO**

Project No.: 770619001

Figure: A-1a

PROJECT:

**THE OAKS**  
Cupertino, California

**Log of Boring B-1**

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

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

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

<sup>1</sup> 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.  
<sup>2</sup> 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



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)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES			SPT N-Value <sup>1</sup>	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
	Sampler Type	Sample	Blows/ 6"									
						Ground Surface Elevation: 296.0 feet <sup>2</sup>						
1						2 inches asphalt concrete (AC)						
						4 inches aggregate base (AB)						
2	BULK				SP-SC	SAND with CLAY and GRAVEL (SP-SC)						
3	S&H		19	51	SP-SC	brown, very dense, dry, fine- to coarse-grained sand, fine- to coarse gravel up to 1 inch in diameter, trace cobbles						
4	S&H		29	35/2"		decrease in gravel content						
5	BULK		44		CL	SANDY CLAY (CL)						
6	SPT		50/2"	54		brown, hard, dry, fine- to coarse-grained sand, trace fine gravel						
7			10		SP-SC	SAND with CLAY and GRAVEL (SP-SC)						
8	SPT		20	46		brown, dense, dry, fine- to coarse-grained sand, fine gravel						
9			25		SP	SAND with GRAVEL (SP)						
10			12	56		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				3.0	115	
11	S&H		30		SP	dense, increase in gravel content, subrounded to subangular gravel						
12			36	34						3.6	111	
13			44		CL	SANDY CLAY with GRAVEL (CL)						
14			20	38		brown, hard, moist, fine- to coarse-grained sand, fine angular and fragmented gravel up to 1/2 inch in diameter						
15	S&H		28		GP-GC	GRAVEL with CLAY and SAND (SP-SC)						
16			20	17		brown, dense, moist, fine gravel up 1/3 inch diameter, fine- to coarse sand						
17			8		CL	SANDY CLAY (CL)						
18	S&H		12	17		brown, very stiff, moist, fine-grained sand						
19			8		ML	SANDY SILT (ML)						
20			12			brown, very stiff, moist				20.7	94	
21			12									
22												
23												
24												
25												
26												
27												
28												
29												
30												

**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**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value <sup>1</sup>			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	17	SC	SANDY SILT (ML) (continued) CLAYEY SAND (SC) brown, medium dense, moist, fine- to coarse-grained sand, some fine gravel up to 1/4 inch in diameter				13.5	110	
32			10									
33					SP	SAND with GRAVEL (SP) brown, medium dense, moist, fine- to coarse-grained sand, fine angular gravel up to 1/2 inch in diameter						
34												
35			13	26	SM	SILTY SAND (SM) brown, medium dense, moist, some fine subrounded gravel						
36	S&H		19									
37			18									
38					SP	SAND with GRAVEL (SP) brown, dense, moist, fine- to coarse-grained sand, fine- to coarse subrounded gravel up to 1 1/2 inches in diameter						
39												
40			21	41	SP	SAND (SP) brown, medium dense, moist, fine- to coarse-grained sand, some fine rounded gravel up to 3/4 inch in diameter						
41	S&H		28									
42			31									
43					SP	SAND (SP) brown, medium dense, moist, fine- to coarse-grained sand, some fine rounded gravel up to 3/4 inch in diameter						
44												
45			15	29	SP	SAND (SP) brown, medium dense, moist, fine- to coarse-grained sand, some fine rounded gravel up to 3/4 inch in diameter				4.2	109	
46	S&H		20									
47			22									
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.

<sup>1</sup> 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.  
<sup>2</sup> 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)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES			SPT N-Value <sup>1</sup>	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
	Sampler Type	Sample	Blows/ 6"									
Ground Surface Elevation: 300.5 feet <sup>2</sup>												
1						2 inches asphalt concrete (AC)						
						4 inches aggregate base (AB)						
2	BULK				CL	SANDY CLAY (CL)						
3	S&H		26	51		red-brown, hard, dry, fine-grained sand						
			27			LL = 23, PI = 9, see Figure B-1						
			46			trace fine gravel up to 3/4 inch in diameter						
4	BULK					SAND with CLAY and GRAVEL (SP-SC)						
5	S&H		19	41		brown, dense, dry, fine- to coarse-grained sand,						
			25			fine- to coarse subangular to angular gravel up to						
			33			1 3/4 inch in diameter					6.9	105
7												
8	S&H		20	48	SP-SC							
			34									
			35									
9												
10												
11	S&H		18	44		dark brown, coarse gravel and fragmented						
			26			cobbles up to 3 inches in diameter					5.6	109
			34									
12												
13												
14						SAND with SILT and GRAVEL (SP-SM)						
15						brown, very dense, dry, fine- to coarse-grained						
16	S&H		29	61		subrounded to angular gravel up to 2 3/4 inches in						
			44			diameter, fine- to coarse-grained sand						
			43			Sieve Analysis, see Figure B-2				8.7	3.8	
17					SP-SM							
18												
19												
20												
21	S&H		28	42/6"		increase in sand content						
			60/6"									
22	SPT		17	35	SM	SILTY SAND (SM)						
			15			brown, dense, dry						
			14									
23												
24						SAND with GRAVEL (SP)						
25						brown, very dense, moist, fine- to coarse sand,						
26	S&H		29	64		fine- to coarse subrounded gravel up to 2 inches						
			44			in diameter, with interbedded thin lenses of silt						
			48		SP							
27												
28												
29												
30												

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

**LANGAN TREADWELL ROLLO**









Project No.: 770619001

Figure: A-3a

PROJECT:

**THE OAKS**  
Cupertino, California

**Log of Boring B-3**

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value <sup>1</sup>			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	67	SP	SAND with GRAVEL (SP) (continued) rounded to subrounded fine gravel up to 1/2 inch in diameter				9.1	108	
32			62									
33			34									
34												
35	SPT		5	25	CL	SANDY CLAY (CL) brown, very stiff, moist						
36			9									
37			12									
38												
39												
40	SPT		11	76	SP	SAND with GRAVEL (SP) brown, very dense, moist, fine- to coarse-grained sand, fine- to coarse subangular gravel up to 1 inch in diameter						
41			23									
42			40									
43												
44												
45	SPT		4	20	CL	SANDY CLAY (CL) brown, very stiff, moist  LL = 28, PI = 11, see Figure B-1						
46			6									
47			11									
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

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

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

<sup>1</sup>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.  
<sup>2</sup>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

## UNIFIED SOIL CLASSIFICATION SYSTEM

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

### SAMPLE DESIGNATIONS/SYMBOLS

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 coarse fine	3" to No. 4	76.2 to 4.76
	3" to 3/4" 3/4" to No. 4	76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200	4.76 to 0.075
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40	2.00 to 0.420
	No. 40 to No. 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

- 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

- Unstabilized groundwater level
- Stabilized groundwater level

### SAMPLER TYPE

- |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li><b>C</b> Core barrel</li> <li><b>CA</b> California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter</li> <li><b>D&amp;M</b> Dames &amp; Moore piston sampler using 2.5-inch outside diameter, thin-walled tube</li> <li><b>O</b> Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube</li> </ul> | <ul style="list-style-type: none"> <li><b>PT</b> Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube</li> <li><b>S&amp;H</b> Sprague &amp; Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter</li> <li><b>SPT</b> Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter</li> <li><b>ST</b> Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure</li> </ul> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**THE OAKS**  
Cupertino, California

### CLASSIFICATION CHART

**LANGAN TREADWELL ROLLO**

Date 10/09/14	Project No. 770619001	Figure A-4
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**APPENDIX B**  
**CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY**  
**REPORTS**



# McC Campbell 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  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

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





## Glossary of Terms & Qualifier Definitions

**Client:** 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.





## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**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	Date Analyzed
Decachlorobiphenyl	106	70-130	10/11/2014 02:25

Analyst(s): CK

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**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	Date Analyzed
Decachlorobiphenyl	120	70-130	10/10/2014 23:55

Analyst(s): CK

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**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	Date Analyzed
Decachlorobiphenyl	115	70-130	10/11/2014 03:03

Analyst(s): CK



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

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

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5.0	1410373-008A	Soil	10/02/2014	GC10	96312
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

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

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-15.5	1410373-016A	Soil	10/03/2014	GC38	96312
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

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

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

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

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

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5.0	1410373-008A	Soil	10/02/2014	GC17	96402
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

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

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-15.5	1410373-016A	Soil	10/03/2014	GC17	96361
<b>Analytes</b>	<b>Result</b>		<b>RL</b>	<b>DF</b>	<b>Date Analyzed</b>
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

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
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

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/10/14-10/13/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

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

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

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	118	70-130		10/10/2014 23:48

**Analyst(s):** DB



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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	<b>4.8</b>	0.50	1	10/11/2014 00:01
Barium	<b>90</b>	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	<b>81</b>	0.50	1	10/11/2014 00:01
Cobalt	<b>15</b>	0.50	1	10/11/2014 00:01
Copper	<b>36</b>	0.50	1	10/11/2014 00:01
Lead	<b>6.1</b>	0.50	1	10/11/2014 00:01
Mercury	<b>0.066</b>	0.050	1	10/11/2014 00:01
Molybdenum	<b>0.88</b>	0.50	1	10/11/2014 00:01
Nickel	<b>89</b>	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	<b>68</b>	0.50	1	10/11/2014 00:01
Zinc	<b>54</b>	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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	106	70-130		10/11/2014 00:33

Analyst(s): DB





## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	108	70-130		10/13/2014 22:29

Analyst(s): DB



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	105	70-130		10/13/2014 22:41

**Analyst(s):** DB



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	108	70-130		10/10/2014 22:46

**Analyst(s):** DB



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-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	Date Analyzed
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	Date Analyzed
2-Fluorotoluene	116	70-130	10/10/2014 21:45

Analyst(s): IA



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-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

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

Analyst(s): IA

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-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	Date Analyzed
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	Date Analyzed
2-Fluorotoluene	109	70-130	10/11/2014 07:40

Analyst(s): IA



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-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

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

Analyst(s): IA



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-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

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

Analyst(s): IA

(Cont.)





## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

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

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-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

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

Analyst(s): IA



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### LUFT 5 Metals

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

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	10/10/2014 23:54
Chromium	<b>69</b>	0.50	1	10/10/2014 23:54
Lead	<b>17</b>	0.50	1	10/10/2014 23:54
Nickel	<b>60</b>	0.50	1	10/10/2014 23:54
Zinc	<b>62</b>	5.0	1	10/10/2014 23:54
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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>B-1-17.5</b>	<b>1410373-006A</b>	<b>Soil/TOTAL</b>	<b>10/02/2014</b>	<b>ICP-MS1</b>	<b>96316</b>

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	10/11/2014 00:20
Chromium	<b>56</b>	0.50	1	10/11/2014 00:20
Lead	<b>6.8</b>	0.50	1	10/11/2014 00:20
Nickel	<b>68</b>	0.50	1	10/11/2014 00:20
Zinc	<b>66</b>	5.0	1	10/11/2014 00:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
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>B-2-3.0</b>	<b>1410373-007A</b>	<b>Soil/TOTAL</b>	<b>10/02/2014</b>	<b>ICP-MS1</b>	<b>96316</b>

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	10/11/2014 00:27
Chromium	<b>65</b>	0.50	1	10/11/2014 00:27
Lead	<b>6.8</b>	0.50	1	10/11/2014 00:27
Nickel	<b>62</b>	0.50	1	10/11/2014 00:27
Zinc	<b>59</b>	5.0	1	10/11/2014 00:27
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	109	70-130		10/11/2014 00:27

Analyst(s): DB

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14-10/14/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**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	Date Analyzed
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	Date Analyzed
C9	105	70-130	e7,e2	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	Date Analyzed
C9	105	70-130	10/15/2014 00:14

Analyst(s): TK

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14-10/14/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons

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

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
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

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	95	70-130	10/11/2014 14:10

Analyst(s): TK

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

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
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

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	114	70-130	10/11/2014 20:08

Analyst(s): TK

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

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

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Analytical Comments</u>	<u>Date Analyzed</u>
C9	116	70-130	e7,e2	10/11/2014 01:29

Analyst(s): MAM

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14-10/14/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**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	Date Analyzed
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	Date Analyzed
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	Date Analyzed
C9	108	70-130	10/16/2014 06:47

Analyst(s): TK

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/9/14-10/14/14

**WorkOrder:** 1410373  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**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	Date Analyzed
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	Date Analyzed
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	Date Analyzed
C9	89	70-130	10/11/2014 19:00

Analyst(s): TK



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14  
**Instrument:** GC23  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96298  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg  
**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	-	-	-	-
<b>Surrogate Recovery</b>							
Decachlorobiphenyl	0.0624	0.0614		0.050	125	123	70-130





# Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/11/14  
**Instrument:** GC16  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96312  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96312  
 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	-	-	-	-

(Cont.)



# Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/11/14  
**Instrument:** GC16  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96312  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96312  
 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

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/11/14  
**Instrument:** GC16  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96312  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96312  
 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
<b>Surrogate Recovery</b>									
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

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/10/14  
**Date Analyzed:** 10/10/14 - 10/14/14  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96361  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96361  
 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	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/10/14  
**Date Analyzed:** 10/10/14 - 10/14/14  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96361  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96361  
 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

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/10/14  
**Date Analyzed:** 10/10/14 - 10/14/14  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96361  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96361  
 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	

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/13/14  
**Date Analyzed:** 10/13/14  
**Instrument:** GC17  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96402  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96402  
 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	-	-	-	-

(Cont.)



# Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/13/14  
**Date Analyzed:** 10/13/14  
**Instrument:** GC17  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96402  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96402  
 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

(Cont.)





## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/13/14  
**Date Analyzed:** 10/13/14  
**Instrument:** GC17  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96402  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96402  
 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	



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96308  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96308  
 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
<b>Surrogate Recovery</b>							
Tb 350.917	578	559		500	116	112	70-130

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96308  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96308  
 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
<b>Surrogate Recovery</b>									
Tb 350.917	551	530	500		110	106	70-130	4.00	20



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96316  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96316  
 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
<b>Surrogate Recovery</b>							
Tb 350.917	630	527		500	126	105	70-130

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96316  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96316  
 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
<b>Surrogate Recovery</b>									
Tb 350.917	575	524	500		115	105	70-130	9.22	20



# Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14  
**Instrument:** GC7  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96311  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96311  
 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
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.632	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  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/11/14 - 10/16/14  
**Instrument:** GC11A, GC9a  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96310  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**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
<b>Surrogate Recovery</b>							
C9	28.6	28.8		25	115	115	70-130



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/9/14  
**Date Analyzed:** 10/10/14 - 10/13/14  
**Instrument:** GC11A, GC6A  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96315  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96315  
 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
<b>Surrogate Recovery</b>							
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
<b>Surrogate Recovery</b>									
C9	29.2	29.3	25		117	117	70-130	0	30





## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/11/14  
**Date Analyzed:** 10/12/14 - 10/14/14  
**Instrument:** GC11A, GC2B  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96383  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**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
<b>Surrogate Recovery</b>							
C9	29.4	27.6		25	117	110	70-130



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/13/14  
**Date Analyzed:** 10/14/14  
**Instrument:** GC6B  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96403  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-96403  
 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
<b>Surrogate Recovery</b>							
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	
<b>Surrogate Recovery</b>									
C9	NR	NR	0		NR	NR	-	NR	



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1410373

ClientCode: TWRF

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUS   
  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@concursoft.com

**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	<input type="checkbox"/>	A			A	A							
1410373-002	B-1-5.5	Soil	10/2/2014	<input type="checkbox"/>		A	A		A	A						
1410373-004	B-1-10.5	Soil	10/2/2014	<input type="checkbox"/>				A	A							
1410373-006	B-1-17.5	Soil	10/2/2014	<input type="checkbox"/>					A	A						
1410373-007	B-2-3.0	Soil	10/2/2014	<input type="checkbox"/>	A				A	A						
1410373-008	B-2-5.0	Soil	10/2/2014	<input type="checkbox"/>		A	A		A	A						
1410373-009	B-2-10.5	Soil	10/2/2014	<input type="checkbox"/>				A	A							
1410373-010	B-2-15.5	Soil	10/2/2014	<input type="checkbox"/>					A	A						
1410373-012	B-3-3.0	Soil	10/3/2014	<input type="checkbox"/>	A			A	A							
1410373-013	B-3-5.5	Soil	10/3/2014	<input type="checkbox"/>					A	A						
1410373-014	B-3-8.0	Soil	10/3/2014	<input type="checkbox"/>				A	A							
1410373-016	B-3-15.5	Soil	10/3/2014	<input type="checkbox"/>		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 SamplIDs: 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.



## 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	
1410373-001A	B-1-2.5	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
1410373-002A	B-1-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
			SW8270C (SVOCs)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
1410373-003A	B-1-8.5	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014			<input checked="" type="checkbox"/>	
1410373-004A	B-1-10.5	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
1410373-005A	B-1-16.5	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014			<input checked="" type="checkbox"/>	
1410373-006A	B-1-17.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
1410373-007A	B-2-3.0	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>				5 days	<input type="checkbox"/>
1410373-008A	B-2-5.0	Soil	Multi-Range TPH(g,d,mo)	1	Plastic Baggie, Medium	<input type="checkbox"/>	10/2/2014	5 days		<input type="checkbox"/>	

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

**Bottle Legend:**

Big Stainless Tube =

Plastic Baggie, Medium = Medium Plastic Baggie



## 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		
1410373-008A	B-2-5.0	Soil	SW6020 (LUFT)	1	Plastic Baggie, Medium	<input type="checkbox"/>	10/2/2014	5 days			<input type="checkbox"/>		
			SW8270C (SVOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1410373-009A	B-2-10.5	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days			<input type="checkbox"/>		
			SW6020 (CAM 17)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1410373-010A	B-2-15.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014	5 days			<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1410373-011A	B-2-20.5	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/2/2014				<input checked="" type="checkbox"/>		
1410373-012A	B-3-3.0	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014	5 days			<input type="checkbox"/>		
			SW6020 (CAM 17)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1410373-013A	B-3-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014	5 days			<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1410373-014A	B-3-8.0	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014	5 days			<input type="checkbox"/>		
			SW6020 (CAM 17)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1410373-015A	B-3-10.5	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014				<input checked="" type="checkbox"/>		
1410373-016A	B-3-15.5	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014	5 days			<input type="checkbox"/>		

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

**Bottle Legend:**

Big Stainless Tube =

Plastic Baggie, Medium = Medium Plastic Baggie



## 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	<input type="checkbox"/>	10/3/2014	5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1410373-017A	B-3-20	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014			<input checked="" type="checkbox"/>	
1410373-018A	B-1-5@8'	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014			<input checked="" type="checkbox"/>	
1410373-019A	B-1-10@17'	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014			<input checked="" type="checkbox"/>	
1410373-020A	B-1-12@20.5'	Soil		1	Big Stainless Tube	<input type="checkbox"/>	10/3/2014			<input checked="" type="checkbox"/>	
1410373-021A	B-2-4@7.5'	Soil		1	Plastic Baggie, Medium	<input type="checkbox"/>	10/3/2014			<input checked="" type="checkbox"/>	

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

**Bottle Legend:**

Big Stainless Tube =

Plastic Baggie, Medium = Medium Plastic Baggie

1410373

Treadwell & Rollo

CHAIN OF CUSTODY RECORD

Environmental and Geotechnical Consultant

- 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: 990619001  
 Project Manager/Contact: P. Lussack  
 Samplers: M. Lathan  
 Recorder (Signature Required): \_\_\_\_\_

Turnaround  
Time  
Standard

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix							No. Containers & Preservative							Analysis Requested		Silica gel clean-up	Hold	Remarks						
				Soil	Water	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	Other																	
B-1-2.5	10/02/14			X																								
B-1-5.5																												
B-1-8.5																												
B-1-10.5																												
B-1-16.5																												
B-1-17.5																												
B-2-3.0																												
B-2-5.0																												
B-2-10.5																												
B-2-15.5																												
B-2-20.5																												
B-3-3.0	10/03/14																											
B-3-5.5																												
B-3-8.0																												

M.P.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>10/08/14</u>	Time <u>1350</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>10/8/14</u>	Time <u>1350</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>10/8/14</u>	Time <u>1645</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>10/8/14</u>	Time <u>1645</u>
Relinquished by: (Signature)	Date	Time	Received by Lab. (Signature)	Date	Time

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

KE: 1.10  
 GOOD CONDITION \_\_\_\_\_ APPROPRIATE  
 HEAD SPACE ABSENT \_\_\_\_\_ CONTAINERS  
 DECHLORINATED IN LAB \_\_\_\_\_ PRESERVED IN LAB \_\_\_\_\_  
 VOAS 10 & GI METALS 10 - 4EP

**CHAIN OF CUSTODY RECORD**

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			No. Containers & Preservative					Analysis Requested		Silica gel clean-up	Hold	Remarks		
				Soil	Water	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	Other	TP+Hg+Ni	VOL				SVOL	Pesticides/PCBs
B-3-10.5	10/03/14			X														
B-3-15.5	↓																	
B-3- <del>10.5</del> 20	↓																	
*B-1-5@8'																		
*B-1-10@17'																		
*B-1-12@20.5'																		
*B-2-4@7.5'																		
Relinquished by: (Signature)			Date	Time	Received by: (Signature)			Date	Time									
Relinquished by: (Signature)			Date	Time	Received by: (Signature)			Date	Time									
Relinquished by: (Signature)			Date	Time	Received by Lab: (Signature)			Date	Time									
Sent to Laboratory (Name):					Method of Shipment													
Laboratory Comments/Notes:					<input type="checkbox"/> Lab courier <input type="checkbox"/> Fed Ex <input type="checkbox"/> Airborne <input type="checkbox"/> UPS <input type="checkbox"/> Hand Carried <input type="checkbox"/> 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.Y.





### 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 No: **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:



# McC Campbell 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  
McC Campbell](#)

Angela Rydelius,  
Laboratory Manager

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





## Glossary of Terms & Qualifier Definitions

**Client:** 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.



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/20/14

**WorkOrder:** 1410373  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**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



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/20/14

**WorkOrder:** 1410373  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6010B  
**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.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Project:** #770619001; The Oaks  
**Date Received:** 10/9/14 21:28  
**Date Prepared:** 10/20/14

**WorkOrder:** 1410373  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6010B  
**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



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/20/14  
**Date Analyzed:** 10/23/14  
**Instrument:** ICP-MS2  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96731  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L  
**Sample ID:** MB/LCS-96731  
 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



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 10/22/14  
**Date Analyzed:** 10/23/14  
**Instrument:** ICP-JY  
**Matrix:** Soil  
**Project:** #770619001; The Oaks

**WorkOrder:** 1410373  
**BatchID:** 96811  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6010B  
**Unit:** mg/L  
**Sample ID:** MB/LCS-96811

---

### QC Summary Report for SW6010B

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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

---





1534 Willow Pass Rd  
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@conkursolut

**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	<input type="checkbox"/>	A												
1410373-002	B-1-5.5	Soil	10/2/2014	<input type="checkbox"/>	A												
1410373-004	B-1-10.5	Soil	10/2/2014	<input type="checkbox"/>	A												
1410373-006	B-1-17.5	Soil	10/2/2014	<input type="checkbox"/>	A												
1410373-007	B-2-3.0	Soil	10/2/2014	<input type="checkbox"/>	A												
1410373-008	B-2-5.0	Soil	10/2/2014	<input type="checkbox"/>	A												
1410373-009	B-2-10.5	Soil	10/2/2014	<input type="checkbox"/>	A												
1410373-012	B-3-3.0	Soil	10/3/2014	<input type="checkbox"/>	A												
1410373-014	B-3-8.0	Soil	10/3/2014	<input type="checkbox"/>	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.



## 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. STLC Cr added 10/20/14 STAT.

**Contact's Email:** [pcusack@langan.com](mailto:pcusack@langan.com)

**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*		<input type="checkbox"/>	
1410373-002A	B-1-5.5	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/2/2014	5 days*		<input type="checkbox"/>	
1410373-004A	B-1-10.5	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/2/2014	5 days*		<input type="checkbox"/>	
1410373-006A	B-1-17.5	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/2/2014	5 days*		<input type="checkbox"/>	
1410373-007A	B-2-3.0	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/2/2014	5 days*		<input type="checkbox"/>	
1410373-008A	B-2-5.0	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Plastic Baggie, Medium	10/2/2014	5 days*		<input type="checkbox"/>	
1410373-009A	B-2-10.5	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/2/2014	5 days*		<input type="checkbox"/>	
1410373-012A	B-3-3.0	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/3/2014	5 days*		<input type="checkbox"/>	
1410373-014A	B-3-8.0	Soil	SW6020 (Metals) (STLC) <Chromium>	1	Big Stainless Tube	10/3/2014	5 days*		<input type="checkbox"/>	

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

**Bottle Legend:**

Big Stainless Tube =

Plastic Baggie, Medium = Medium Plastic Baggie

1410373

# Treadwell & Rollo

Environmental and Geotechnical Consultant

## CHAIN OF CUSTODY RECORD

Page 1 of 2

- 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. Curack  
 Samplers: M. Lathan  
 Recorder (Signature Required): \_\_\_\_\_

Turnaround Time  
Standard

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix			No. Containers & Preservative					Analysis Requested										Remarks				
				Soil	Water	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	Other	THg.d.m.c	VOCS	SVOCs	pesticides/PCBs	GM17 Metals	LOIS Metals	STC/Cr	Silica gel clean-up	Hold						
B-1- <del>2</del> 2.5	10/02/14			X									X					X								
B-1- <del>6</del> 5.5													X	X				X								
B-1- <del>8</del> 5																										
B-1- <del>10</del> 10.5													X					X								
B-1- <del>16</del> 16.5													X					X								
B-1- <del>17</del> 17.5													X					X								
B-2- <del>3</del> 3.0													X					X								
B-2- <del>5</del> 5.0													X	X				X								
B-2- <del>10</del> 10.5													X					X								
B-2- <del>15</del> 15.5													X					X								
B-2- <del>20</del> 20.5																										X
B-3- <del>3</del> 3.0	10/03/14												X					X								
B-3- <del>5</del> 5.5													X					X								
B-3- <del>8</del> 8.0													X					X								

MP

Relinquished by: (Signature) [Signature] Date 10/08/14 Time 1350 Received by: (Signature) [Signature] Date 10/8/14 Time 1350  
 Relinquished by: (Signature) [Signature] Date 10/8/14 Time 1645 Received by: (Signature) [Signature] Date 10/8/14 Time 1645  
 Relinquished by: (Signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received by Lab: (Signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

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

KCE 1.0  
 GOOD CONDITION \_\_\_\_\_ APPROPRIATE  
 HEAD SPACE ABSENT \_\_\_\_\_ CONTAINERS  
 DECHLORINATED IN LAB \_\_\_\_\_ PRESERVED IN LAB  
VOAS 10 & GI METALS 10-46P

