

# Limited Site Investigation

**Sherwood Property  
County Road 1 and County Road 20 ½  
And  
Bogott Property  
12748 County Road 1  
Longmont, Weld County, Colorado**

January 12, 2011  
Terracon Project No. 25107093



**Prepared for:**

City of Longmont  
Longmont, Colorado

**Prepared by:**

Terracon Consultants, Inc.  
Wheat Ridge, Colorado

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# Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities



January 12, 2011

Mr. Dan Wolford  
City of Longmont  
7 South Sunset Street  
Longmont, Colorado 80501

Telephone: 303-774-4691  
Facsimile: 303-774-4749  
E-mail: Dan.Wolford@ci.longmont.co.us

RE: Limited Site Investigation  
Sherwood and Bogott Properties  
Longmont, Colorado  
Terracon Project Number 25107093

Dear Mr. Wolford:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Limited Site Investigation report for the above-referenced site. This assessment was performed in accordance with our proposal dated December 6, 2010. Please contact Kevin Taylor at 303-423-3300 should you have any questions regarding this report.

Sincerely,  
**Terracon Consultants, Inc.**

Kevin J. Taylor, P.G.  
Project Manager

Lawrence R. Keefe  
Principal

Copies to: Addressee (2)



Terracon Consultants, Inc., 10625 West I-70 Frontage Road North, Wheat Ridge, Colorado  
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Geotechnical



Environmental



Construction Materials



Facilities

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**LIMITED SITE INVESTIGATION REPORT  
SHERWOOD AND BOGOTT PROPERTIES  
LONGMONT, WELD COUNTY, COLORADO  
PROJECT NO. 25107093**

## **1.0 PROJECT BACKGROUND**

Terracon Consultants, Inc (Terracon) conducted a Phase I Environmental Site Assessment (ESA) for the Sherwood and Bogott properties (Terracon Project Numbers 25107818 and 25107826, respectively). The ESAs that identified eight oil and gas wells (seven wells on the Sherwood Property and one well on the Bogott Property) and three tank batteries (two tank batteries on the Sherwood Property and one tank battery on the Bogott Property). The oil and gas wellhead and tank batteries represent recognized environmental conditions (RECs) for the sites (collectively referred to as the site).

### **1.1 Site Description**

<b>Site Name</b>	Sherwood and Bogott Properties
<b>Site Location/Address</b>	Sherwood Property – Northeast corner of County Road 1 and County Road 20½, Longmont, Colorado Bogott Property – 12748 Weld County Road 1, Longmont, Colorado
<b>General Site Description</b>	Sherwood Property - Approximately 540 acres Bogott Property - Approximately 83 acres

Topographic maps for the Sherwood Property and the Bogott area included as Figure 1 and Figure 2, respectively, of Appendix A.

### **1.2 Standard of Care**

Terracon services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work requested by you, our client, as reflected in our proposal and were not restricted by ASTM E1903-97.

### **1.3 Additional Scope Limitations**

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products,

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or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time for the purposes of addressing environmental concerns outlined in the scope of these services.

## **1.4 Reliance**

The LSI report was prepared for the exclusive use and reliance of City of Longmont. Use or reliance by any other party is prohibited without the written authorization of City of Longmont and Terracon.

## **2.0 LIMITED SITE INVESTIGATION**

The objective of this LSI was to collect information regarding potential environmental impact to the site subsurface soils and groundwater associated with RECs identified in the Terracon's Phase I ESA report.

The LSI scope of services was comprised of four tasks:

1. Utility clearance and preparation of a Health and Safety Plan
2. Advance 13 soil borings to collect subsurface soil and groundwater samples for laboratory analyses
3. Laboratory analysis of soil and groundwater samples
4. Report preparation

### **2.1 Utility Clearance and Health and Safety Plan**

A 48-hour notice-of-intent to advance the LSI borings was filed with the Utility Notification Center of Colorado (UNCC) to delineate the public subsurface utilities at the site. A Health & Safety Plan was prepared for the LSI field work using Level D personal protective equipment.

### **2.2 LSI Borings**

As part of the approved scope of work, 13 borings were advanced at following site oil and gas production facilities:

- Williams Tank Battery - Two borings (B-1 and B-2) were located on the east and north exterior sides of the production tank containment berm
- Williams 18-16 Well Head – One boring (B3) on the north side of the well head
- William 43-18 Well Head – One boring (B4) on the north side of the well head
- Sherwood #1 Well Head – One boring (B5) on the north side of the well head

- Sherwood # 2 Well Head – One boring (B6) on the west side of the well head
- Serafini Gas Unit (G.U.) #1-18 Well Head - One boring (B7) on the west side of the well head
- Serafini G.U. #1-18 and Powell #1 Tank Battery - Two borings (B8 and B9) on the north and east sides of the production tank containment berm
- Powell #1 Well Head – One boring (B10) was located on the north side of well head
- Stamp #2 Tank Battery - Two borings (B11 and B12) on the north and east sides of the production tank containment berm
- Stamp #2 Well Head - One boring (B13) was located on the east side of well head

Boring locations were selected based on access and estimated groundwater flow direction. Borings B1 through B6 were advanced on December 9 and December 10, 2010 by High Plains Drilling (a Terracon company) and ranged from 10.5 feet below ground surface (bgs) (Borings B3 and B6) to 29 feet bgs (boring B1). Soil cores were collected on 5-foot intervals using a split-spoon sampler. Operation and maintenance activities by Top Operating Company delayed access to the Serafini G.U. 1-18, Powell #1, and Stamp #2 locations for approximately one week. Borings B7 through B13 were advanced on December 17, 2010 by High Plains Drilling using a truck-mounted direct push rig equipped with a 4-foot MacroCore<sup>®</sup> continuous sampler and ranged from 11 feet bgs (borings and B11 and B12) to 14.5 feet bgs (boring B10). Terracon's site geologist observed and documented the soils encountered in the borings for type, color, grain size, and other soil characteristics. Boring logs representing the observed and interpolated stratification boundaries of the site soils from the borings completed are presented in Appendix B. If encountered, the geologist noted anomalous soil staining or fill material on the boring logs. Soil samples were collected and observed to document soil lithology, color, moisture content and sensory indications of potential impairment. In addition, the soil samples were field screened with a photo-ionization detector (PID) for the presence of volatile organic vapors. The approximate locations of the LSI borings are depicted on Figure 2 and Figure 3 of Appendix A. The drill augers and soil sampling tools were cleaned between borings with a pressure washer and potable water. Direct push sampling equipment was cleaned between borings with an Alconox<sup>®</sup> and water solution followed by a distilled water rinse.

### 2.2.1 Soil and Groundwater Sampling

#### Soil Samples

Thirteen soil samples (one from each boring) were selected for laboratory analyses based on results of the field screening method described in Section 2.3.3 or indications of potential environmental impact. In the absence of these indicators, soil samples were selected from the capillary fringe zone above the groundwater table.

### Groundwater Samples

Ten groundwater samples were collected for laboratory analysis. Six groundwater grab samples were collected from the center of the hollow-stem auger at borings locations B1 through B6 for laboratory analyses using a single-use polyethylene bailer. Four groundwater grab samples were collected from the open borehole at direct push borings B7 through B10. Boring refusal was encountered in borings B11 and B12 at 7.5 feet bgs, and at 8 feet bgs in boring B13. Groundwater was not observed in the three borings at the time they were advanced. Temporary 1-inch PVC pipe was placed in the borings and groundwater allowed to accumulate in the three borings for approximately 72 hours. Approximately 1 inch of water was observed in borings B11 and B13 after the 72 hour period but was not a sufficient quantity to collect a representative groundwater sample. Boring B12 was dry after approximately 72 hours. Upon completing sampling, the LSI borings were backfilled with the hydrated bentonite chips to generally match pre-existing grade.

### **2.2.2 Soil Profile Description**

In general, soils observed in the borings consisted of fine grain sand, silty sand, and sandy gravel overlying claystone and sandstone bedrock. Gray staining and petroleum odors were observed in soil cores collected from boring B9 (from approximately 4 feet to 7 feet bgs), boring B10 (at 8 feet bgs), and in boring B11 and B13 from approximately 4 feet to 7 feet bgs. Indications of potential environmental impact (chemical odors or staining) were not observed in the remaining LSI borings. Depth to groundwater was measured in the LSI borings ranging from approximately 4 feet bgs (boring B7) to approximately 23.25 feet bgs (boring B1).

### **2.2.3 ATH Field Screening Results**

Terracon's site geologist field screened the soil core samples using the Ambient Temperature Headspace (ATH) method to qualitatively detect volatile organic vapors using a PID field instrument. The ATH soil screening method involved placing a representative sample from each soil core interval into Ziploc® bags, resealing the bags, and allowing the bag contents to equilibrate to the surrounding ambient temperature conditions. A Mini-Rae PID, an instrument capable of measuring volatile vapor concentrations in air in parts per million (ppm), was used to measure the vapor space in each individual sample bag for volatile organic vapors. The soil sample PID field screening measurements ranged from 1 ppm to approximately 836 ppm (boring B13 at approximately 8 feet bgs). The PID readings are indicated on the boring logs included in Appendix B.

## **3.0 SOIL AND GROUNDWATER SAMPLE ANALYSES AND RESULTS**

### **3.1 Soil and Groundwater Analyses**

Soil and groundwater samples were containerized in laboratory-prepared bottles and labeled identifying the sample name, collection date, and the requested laboratory analyses, placed in an ice-filled cooler for delivery to Summit Scientific in Golden, Colorado under chain-of custody



procedures. Thirteen soil samples and 10 groundwater samples were submitted for laboratory analyses. Summit Scientific's analytical reports are presented in Appendix C.

Soil samples were submitted for analyses for benzene, ethylbenzene, toluene and xylenes (BTEX, EPA Method 8260B) and total petroleum hydrocarbons in the gasoline, diesel fuel, and oil ranges (TPH-carbon chain – EPA Method 8015). Two soil samples (B9-6 and B13-8) exhibited TPH concentrations greater than 500 milligrams per kilogram (mg/kg) and were analyzed for poly-nuclear aromatic hydrocarbons (PAHs – EPA Method SIM 8270). Groundwater samples were analyzed for BTEX.

### **3.2 Soil Sample Analytical Results**

The laboratory analytical results are summarized in Table 1 and Table 2 in Appendix A. Terracon compared the TPH, BTEX, and PAH concentrations to those listed in the Colorado Oil and Gas Conservation Commission (COGCC) Rules and Regulations, Series 900 Exploration and Production Waste Management, Table 910-1. According to Rule 900, soil concentrations listed in Table 910-1 were taken from Colorado Department of Public Health and Environment (CDPHE)-Hazardous Waste Management Division, Table 1 - Colorado Soil Evaluation Values (CSEVs - December 2007).

#### **Total Petroleum Hydrocarbons**

As summarized in Table 1, TPH in soil sample B9-6 were reported in the gasoline and diesel fuel ranges at 550 and 270 mg/kg, respectively. The combined TPH concentration in soil sample B9-6 was reported to be 820 mg/kg, which is above the COGCC regulatory concentration for TPH of 500 mg/kg. TPH in soil sample B13-8 was reported in the gasoline, diesel fuel, and oil ranges at 190, 1600, and 180 mg/kg, respectively. The combined TPH concentration in soil sample B13-8 was reported to be 1970 mg/kg, which is above the COGCC soil guidance concentration for TPH of 500 mg/kg. TPH was reported in soil samples B10-4 and B11-6 at 61 and 180.2 mg/kg, respectively, below the COGCC regulatory soil guidance concentration for TPH of 500 mg/kg. TPH was not reported in the LSI soil samples collected from borings B1 through B8.

#### **BTEX and PAHs**

As summarized in Table 1, benzene was reported in soil sample B9-6 at 0.55 mg/kg, above the COGCC regulatory soil standard for benzene of 0.17 mg/kg. Ethylbenzene and total xylenes in soil sample B9-6 were reported below their respective regulatory guidance concentrations. BTEX in the remaining LSI soil samples were reported as either not detected above the laboratory reporting limit or below their respective COGCC regulatory guidance concentrations.

As summarized in Table 2, PAHs in soil samples B9-6 and B13-8 were reported as either below laboratory reporting limits or below their respective COGCC regulatory concentrations.



### **3.3 Groundwater Sample Analytical Results**

The groundwater analytical results are summarized in Table 3 of Appendix A. Groundwater sample analytical results in Table 3 are expressed as micrograms per liter (ug/l).

Reported concentrations of BTEX were compared to the COGCC Rules and Regulations, Series 900 Exploration and Production Waste Management, Table 910-1. According to Rule 900, groundwater concentrations listed in Table 910-1 were taken from CDPHE, Water Quality Control Commission, Regulation 41-The Basic Standards for Groundwater.

As summarized in Table 3, laboratory analysis of groundwater sample B9 reported benzene at 110 ug/l, which is above the COGCC water guidance concentration for benzene of 5 ug/l. Ethylbenzene, and total xylenes were reported in groundwater sample B9 but at concentrations below their respective COGCC regulatory concentrations. BTEX was not reported in the remaining nine LSI groundwater samples collected.

## **4.0 CONCLUSIONS AND RECOMMENDATIONS**

This section summarizes the LSI conclusions and recommendations. The objective of this LSI was to assess potential environmental impact to the site subsurface soils and groundwater associated with RECs identified in Terracon's December 2010 Phase I ESA reports. Boring locations were selected based on identified REC, site conditions, access restrictions, and assumed groundwater flow direction.

This LSI assessed only the presence of contaminants in selected locations which were considered to have been potentially impacted and/or down gradient from known or suspected release areas. This LSI was not intended to provide a comprehensive understanding of the extent of potential contamination impacts associated with historic or present uses or of potential costs which may be incurred if remediation is necessary, or of times required to achieve regulatory closure, if appropriate.

### **4.1 Conclusions**

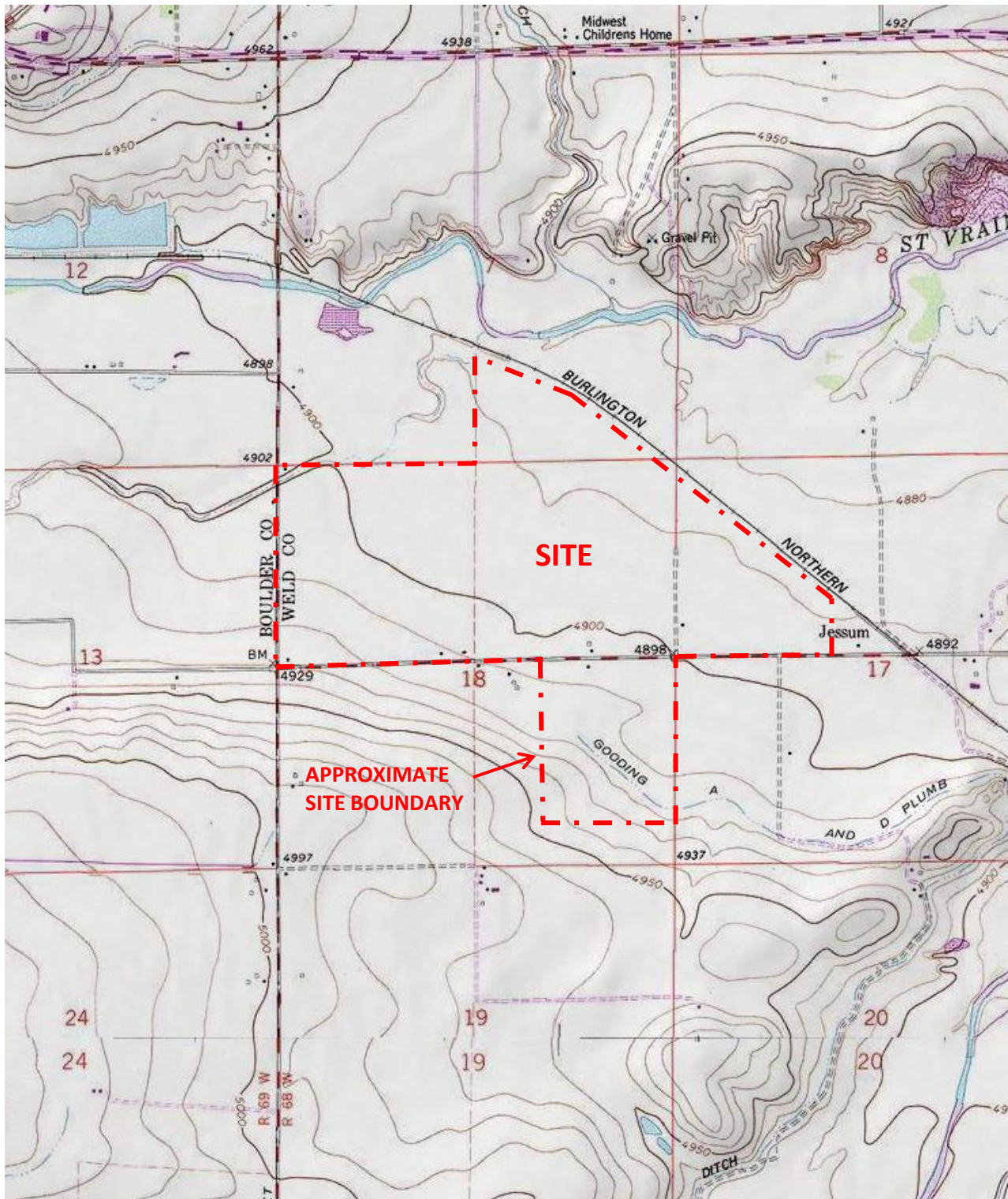
- Thirteen borings were advanced on the site to help assess and evaluate potential environmental soil and groundwater impact
- The LSI borings encountered fine grain sand, silty sand, and sandy gravel over lying claystone and sandstone bedrock
- The LSI borings at depths ranging from approximately 7.5 feet to 29 feet bgs
- Gray staining and petroleum odors were observed in soil cores collected from borings B9, B10, B11, and B13. Indications of potential environmental impact (chemical odors, staining, or elevated PID measurements) were not observed in the remaining LSI borings

- Depth to groundwater was measured in LSI borings ranging from approximately 4 feet bgs (boring B7) to approximately 23.25 feet bgs (boring B1)
- Thirteen soil samples and 10 groundwater samples were collected and submitted for laboratory analyses
- TPH reported in soil sample B9-6 (collected near the Serafini tank battery) and soil sample B13-8 (collected near the Stamp#2 well head) was reported to be above the guidance value of 500 mg/kg established by COGCC. TPH in remaining LSI soil sample was reported either below laboratory reporting limits or below guidance concentrations.
- PAHs in soil samples B9-6 and B13-8 were reported as either below laboratory reporting limits or below their respective guidance concentrations.
- Benzene was reported in soil sample B9-6 above the guidance concentration. BTEX in remaining soil samples were either below laboratory reporting limits or below guidance concentrations
- Benzene was reported in groundwater sample B9 above regulatory guidance concentrations. BTEX in remaining groundwater samples were either below laboratory reporting limits or below regulatory concentrations.

#### **4.2 Recommendations**

Terracon recommends the Client contact the operator for the Serafini and Stamp #2 wells to pursue remedial activities of the petroleum-impacted soil and groundwater above regulatory standards observed near the well heads of the two locations.

**APPENDIX A**  
**FIGURES AND TABLES**



Source: USGS 7.5-Minute Series Topographic Map:  
Longmont, Colorado Quadrangles, Photorevised 1979



**NORTH**

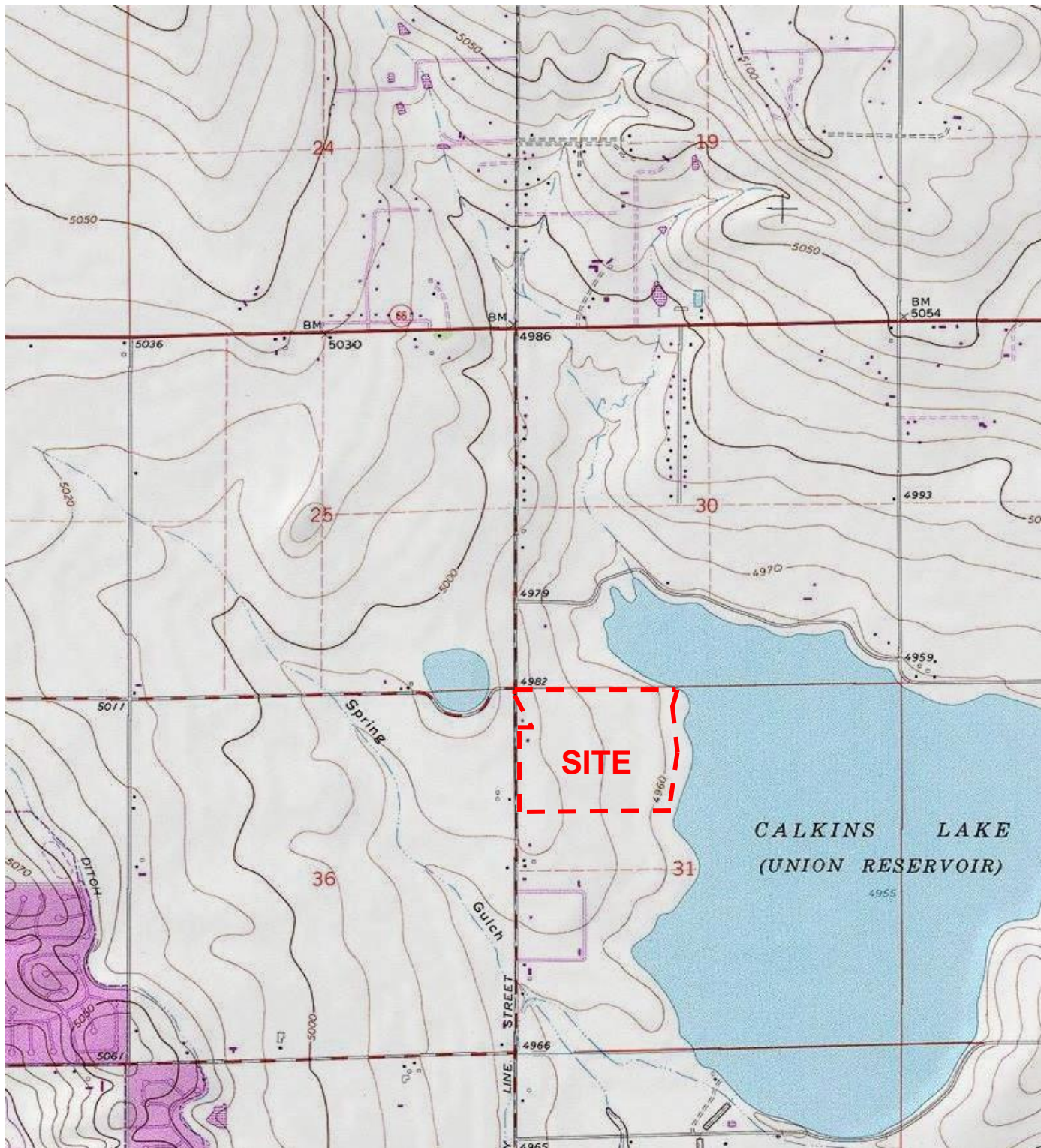
**Figure 1**  
**TOPOGRAPHIC MAP**

**Scale**  
**~2,000 Ft.**

**Terracon**

Limited Site Investigation  
Sherwood Property  
County Rd. 1 and County Rd. 201/2  
Longmont, Colorado  
Project No. 25107093





--- Approximate Site Boundary

Source: USGS 7.5-Minute Series Topographic Map:  
Longmont, Colorado Quadrangles, Revised 1978



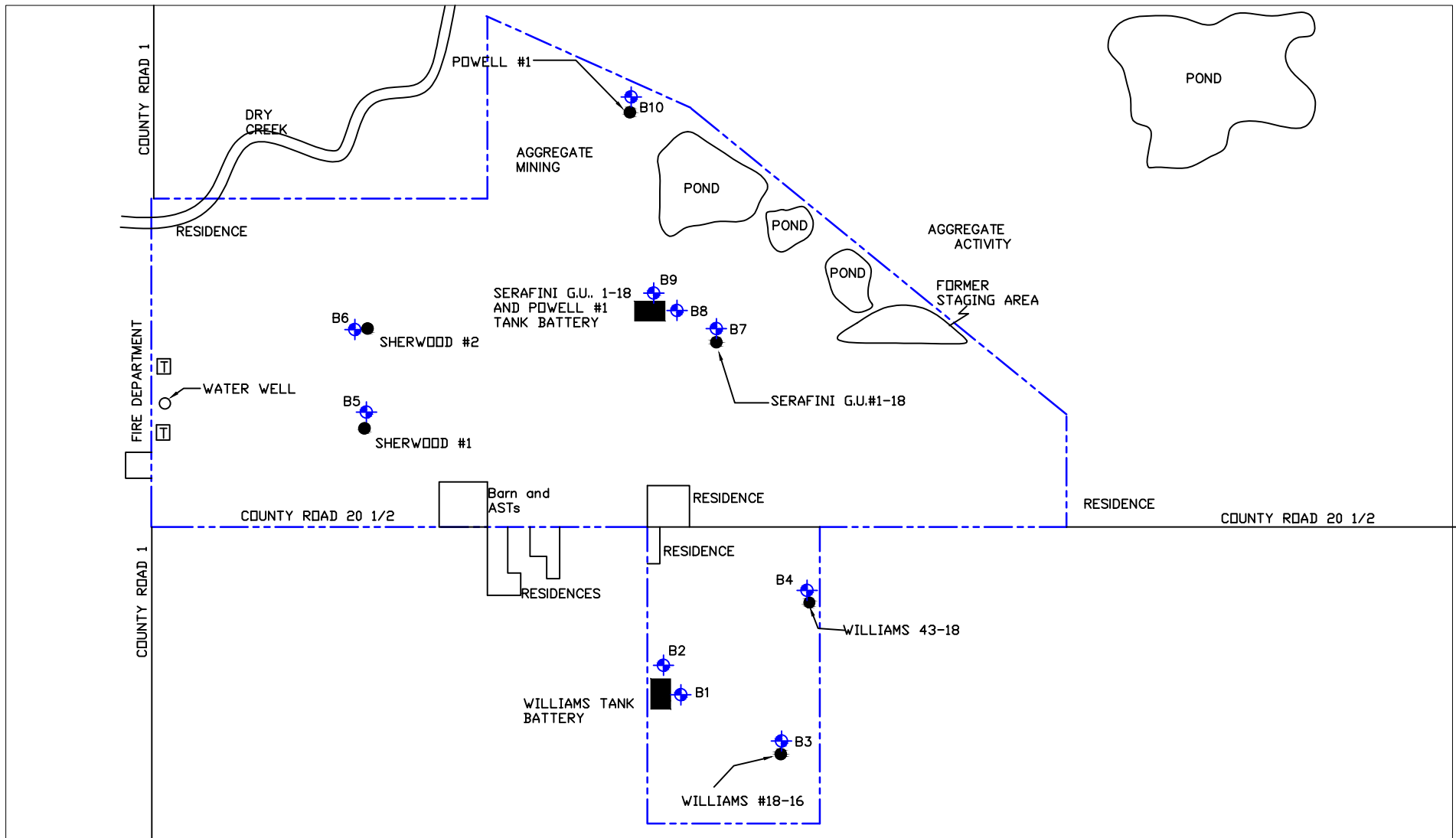
**NORTH**

**Figure 2**  
**TOPOGRAPHIC MAP**

**Scale**  
**~2,000 Ft.**

**Terracon**

**Limited Site Investigation**  
**Bogott Property**  
**12748 County Road 1**  
**Longmont, Colorado**  
**Project No. 25107093**



#### LEGEND

- LSI BORING
- OIL WELL HEAD
- PRODUCTION TANK BERM
- SITE BOUNDARY
- TRANSFORMER



#### LIMITED SIE INVESTIGATION – SITE DIAGRAM SHERWOOD PROPERTY COUNTY ROAD 1 AND COUNTY ROAD 20 1/2 LONGMONT, COLORADO

Project Mngr: KJT  
Designed By: --  
Checked By: LRK  
Approved By: CSP

**Terracon**  
10625 West I-70  
Frontage Road North  
Wheat Ridge, CO 80033

Project No. 25107093  
Scale: NTS  
Date: 12/23/10  
Drawn By: KJT

File Name: 25107093/SHERWOOD FIGURE 3

Figure No. 3



Approximate LSI Boring Location ●

Approximate Site Boundary - - - - -

Source: Bing 2010



Figure 4  
SITE DIAGRAM

Approximately 500 Ft.

**Terracon**

Limited Site Investigation  
Bogott Property  
12748 County Road 1  
Longmont, Colorado  
Project No. 25107093



**TABLE 1**  
**Soil Sample Analytical Summary**  
**TPH and BTEX**  
**Sherwood and Bogott Properties LSI**  
**Terracon Project No. 25107093**

Sample Number	TPH-Carbon Chain				BTEX			
	(mg/kg)				(mg/kg)			
	Gasoline (C6-C10)	Diesel (C10-C28)	Oil (C28-C35)	Total Concentration of Extracted Hydrocarbons (C6-C35)	Benzene	Toluene	Ethylbenzene	Total Xylenes
B1-20	ND				ND			
B2-20	ND				ND			
B3-5	ND				ND			
B4-10	ND				ND			
B5-5	ND				ND			
B6-5	ND				ND			
B7-4	ND				ND			
B8-4	ND				ND			
B9-6	<b>550</b>	270	ND	<b>820</b>	<b>0.55</b>	ND	4.4	1.6
B10-4	ND	61	ND	61	ND			
B11-6	9.2	190	ND	199.2	ND	ND	0.1	0.014
B12-5.5	ND				ND			
B13-8	190	<b>1600</b>	180	<b>1970</b>	0.029	ND	0.49	1.7
COGCC Soil Standards	500 <sup>1</sup>	500 <sup>1</sup>	500 <sup>1</sup>	500 <sup>1</sup>	0.17 <sup>2</sup>	85 <sup>2</sup>	100 <sup>2</sup>	175 <sup>2</sup>

<sup>1</sup> Colorado Oil and Gas Conservation Commission, Series 900 Rules, Exploration and Production Waste Management, Table 910-1, April 2009

<sup>2</sup> Colorado Oil and Gas Conservation Commission, Series 900 Rules, Exploration and Production Waste Management, Table 910-1, Concentrations taken from Colorado Department of Public Health and Environment-Hazardous Waste Management Division, Table 1 - Colorado Soil Evaluation Values (December 2007)

mg/kg - Milligrams per kilogram    **Bold** - Exceeds Colorado Soil Evaluation Values

ND - Not detected above laboratory reporting limit                      NA - Not Analyzed

BTEX - Benzene, toluene, ethylbenzene, total xylenes            TPH - Total Petroleum Hydrocarbon

**TABLE 2**  
**Soil Sample Analytical Summary**  
**PAHs**  
**Sherwood and Bogott Properties LSI**  
**Terracon Project No. 25107093**

Sample Number	PAHs (EPA Method 8270D SIM) (mg/kg)												
	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Pyrene
B9-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0605	ND	0.514	ND
B13-8	0.0193	ND	ND	0.00942	0.0011	ND	0.0523	ND	ND	0.216	ND	0.951	ND
COGCC Soil Standards <sup>1</sup>	1000	1000	0.22	0.22	2.20	0.22	22	0.02	1000	1000	0.22	23	1000

<sup>1</sup>Colorado Oil and Gas Conservation Commission, Series 900 Rules, Exploration and Production Waste Management, Table 910-1, Concentrations taken from Colorado Department of Public Health and Environment-Hazardous Waste Management Division, Table 1 - Colorado Soil Evaluation Values (December 2007)

mg/kg - Milligrams per kilogram    **Bold** - Exceeds Colorado Soil Evaluation Values

ND - Not detected above laboratory reporting limit

PAHs - Poly-nuclear aromatic hydrocarbons

**TABLE 3**  
**Groundwater Sample Analytical Summary**  
**Sherwood and Bogott Properties LSI**  
**Terracon Project No. 25107093**

Sample Number	BTEX (ug/l)			
	Benzene	Toluene	Ethylbenzene	Total Xylenes
B1	ND			
B2	ND			
B3	ND			
B4	ND			
B5	ND			
B6	ND			
B7	ND			
B8	ND			
B9	<b>110</b>	ND	140	3500
B10	ND			
COGCC Groundwater Standards <sup>1</sup>	5	1000	700	10000

<sup>1</sup> Colorado Oil and Gas Conservation Commission, Series 900 Rules,  
Exploration and Production Waste Management, Table 910-1, Concentrations  
taken from Colorado Department of Public Health and Environment,  
Water Quality Control Commission, *Basic Standards for Groundwater*, November 30, 2009  
ug/l - Micrograms per liter    **Bold** -Exceeds Colorado groundwater standard  
ND - Not detected above laboratory reporting limit                      NA - Not Analyzed  
BTEX - Benzene, toluene, ethylbenzene, and total xylenes

**APPENDIX B**  
**BORING LOGS**

Lithologic Boring Log

Soil Boring #	B1	PROJECT #		CLIENT NAME:				
Piezometer #	N/A	25107093		City of Longmont				
Date Started:	12/9/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado				
Date Completed:	12/9/2010	Elevation:		TOC:	NA	MSL:	NA	
Type of Drill:	CME-75	Driller:		Chris H.	Geologist: Kevin Taylor			
Bit Size:	6-Inch Hollow Stem Auger	Helper:		Eric Z.	Proj. Mgr.: Kevin Taylor			
Drilling Company: High Plains Drilling								
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - East side of Williams tank battery	
▽ 23.5 Ft. 12/9/10	4	SS	2,1,1	<1		SM	Sand Light brown, very fine grain, very silty, slightly moist	
	8							
	12	SS	2,3,3,4	<1		SM/ML	Sand/Silt Very light brown, very fine grain, trace clay, slightly moist	
	16							
	20	SS	1,2,3,1	<1		SP	Sand Light red brown, very fine grain, silty, slightly moist	
	24							
	28	SS	4,7,7,8	1	B1-20	SP	Sand Light red brown, very fine grain, silty, slightly moist	
	32							
	36	SS	6,13,11,5				SW	Sand Light brown, very fine-very coarse grain, wet
	40							
	44							
	48							
TOTAL BORING DEPTH - 29 Ft .								

Legend:

Depth to Groundwater

▽  
During Drilling

▼  
After Drilling

Monitor Well Completion:

Cement

Bentonite Chips

Bentonite Seal

Sand Pack

Blank PVC

Screen PVC

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion: N/A

Groundwater at 23.5 ft. 12/9/10

Collect groundwater grab sample through augers w/ bailer 12/9/10

Backfill boring w/ cuttings

Note: All depths are below ground surface

Lithologic Boring Log

Soil Boring #		B2		PROJECT #		CLIENT NAME:		
Piezometer #		N/A		25107093		City of Longmont		
Date Started: 12/9/2010				Location: Sherwood and Bogott Properties, City of Longmont, Colorado				
Date Completed: 12/9/2010				Elevation: TOC: NA MSL: NA				
Type of Drill: CME-75				Driller: Chris H.		Geologist: Kevin Taylor		
Bit Size: 6-Inch Hollow Stem Auger				Helper: Eric Z.		Proj. Mgr.: Kevin Taylor		
Drilling Company: High Plains Drilling								
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - North side of Williams tank battery	
<div>▽</div> <div>22.95 Ft. 12/9/10</div>	4		2,3,2,1	<1		SM	Sand Light brown, very fine grain, very silty, slightly moist	
	8	SS						
	12		2,2,2,2	<1		SM/ML	Sand/Silt Very light brown, very fine grain, trace clay, slightly moist	
	16	SS						
	20		3,2,2,3	<1		SP	Sand Light red brown, very fine grain, silty, slightly moist	
	24	SS						
	28		2,3,5,10	<1	B2-20	SP	Sand Light red brown, very fine grain, silty, slightly moist Gravel at 21 ft.	
	32	SS						
	36		7,8,9,10			SW	Sand Light brown, very fine-very coarse grain, wet	
	40	SS						
	44					CL	Clay Red brown, sandy, very fine grain, wet	
	48							
	TOTAL BORING DEPTH - 26 Ft .							

Legend:		Monitor Well Completion:		Sample Type		Lithology:		Completion: N/A	
Depth to Groundwater								Groundwater at 22.95 ft. 12/9/10	
During Drilling								Collect groundwater grab sample through augers w/ bailer 12/9/10	
After Drilling								Backfill boring w/ cuttings	

Lithologic Boring Log

Soil Boring #	B3	PROJECT #	CLIENT NAME:					
Piezometer #	N/A	25107093	City of Longmont					
Date Started:	12/9/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado				
Date Completed:	12/9/2010	Elevation:		TOC:	NA	MSL:	NA	
Type of Drill:	CME-75	Driller:		Chris H.	Geologist:		Kevin Taylor	
Bit Size:	6-Inch Hollow Stem Auger	Helper:		Eric Z.	Proj. Mgr.:		Kevin Taylor	
Drilling Company: High Plains Drilling								
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - North side of Williams 18-16 well head	
<div>▽</div> <div>8.3 Ft. 12/9/10</div>	2					<div>CL</div>	Clay Medium brown, sandy, moist	
	4							
	6	SS	2,1,1,1	<1	B3-5			
	8							
	10	SS	2,2,3,1	<1				SS
	12						TOTAL BORING DEPTH - 10.5 Ft .	
	14							
	16							
	18							
	20							
	22							
	24							

Legend:

Depth to Groundwater

During Drilling

After Drilling

Monitor Well Completion:

Cement

Bentonite Chips

Bentonite Seal

Sand Pack

Blank PVC

Screen PVC

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion: N/A

Groundwater at 18.3 ft. 12/9/10
















Collect groundwater grab sample through augers w/ bailer 12/9/10

Backfill boring w/ cuttings

Note: All depths are below ground surface



Soil Boring #	B4	PROJECT # 25107093	CLIENT NAME:		
Piezometer #	N/A		City of Longmont		
Date Started:	12/9/2010	Location:	Sherwood and Bogott Properties, City of Longmont, Colorado		
Date Completed:	12/9/2010	Elevation:	TOC:	NA	MSL: NA
Type of Drill:	CME-75	Driller:	Chris H.	Geologist: Kevin Taylor	
Bit Size:	6-Inch Hollow Stem Auger	Helper:	Eric Z.	Proj. Mgr.: Kevin Taylor	

Legend:		Completion: N/A	
<u>Monitor Well Completion:</u>		<u>Sample Type</u>	<u>Lithology:</u>
<u>Depth to Groundwater</u>			
	 Cement	DC - Drill Cuttings	 Concrete
During Drilling	 Bentonite Chips	SS - Split Spoon	 Fill
	 Bentonite Seal	CS - Continuous Sample	 Sand
	 Sand Pack	RS - Ring Sampler	 Gravel
After Drilling	 Blank PVC	 Lab Sample	 Clay
	 Screen PVC	NR - No Recovery	 Claystone
		NS - No Sample	 Sandstone
Note: All depths are below ground surface		PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors	

Lithologic Boring Log

Soil Boring #	B6	PROJECT #		CLIENT NAME:			
Piezometer #	N/A	25107093		City of Longmont			
Date Started:	12/10/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado			
Date Completed:	12/10/2010	Elevation:		TOC:	NA	MSL:	NA
Type of Drill:	CME-75	Driller:		Chris H.	Geologist: Kevin Taylor		
Bit Size:	6-Inch Hollow Stem Auger	Helper:		Eric Z.	Proj. Mgr.: Kevin Taylor		
Drilling Company: High Plains Drilling							
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - North side of Sherwood #1 well head
7.4 Ft. 12/10/10	2		2,3,2,4	<1	B5-5	SM	Sand  Medium brown, very fine grain, very silty, wet at 6 ft.
	4						
	6	SS					
	8						
	10	SS	9,27,27,20			SW	Sand  Red brown, very fine to very coarse grain, w/ gravel wet
	12						
	14						
	16						
	18		TOTAL BORING DEPTH - 11 Ft .				
	20						
	22						
	24						

Legend:

Depth to Groundwater

During Drilling

After Drilling

Monitor Well Completion:

Cement

Bentonite Chips

Bentonite Seal

Sand Pack

Blank PVC

Screen PVC

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion: N/A

Groundwater at 7.4 ft. 12/9/10

Collect groundwater grab sample through augers w/ bailer 12/9/10

Backfill boring w/ cuttings

Note: All depths are below ground surface

Lithologic Boring Log

Soil Boring #	B6	PROJECT #		CLIENT NAME:			
Piezometer #	N/A	25107093		City of Longmont			
Date Started:	12/10/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado			
Date Completed:	12/10/2010	Elevation:		TOC:	NA	MSL:	NA
Type of Drill:	CME-75	Driller:		Chris H.	Geologist: Kevin Taylor		
Bit Size:	6-Inch Hollow Stem Auger	Helper:		Eric Z.	Proj. Mgr.: Kevin Taylor		
Drilling Company: High Plains Drilling							
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - West side of Sherwood #2 well head
<div>▽ 6.5 Ft. 12/10/10</div>	2		4,3,12,13	<1	B6-5	SW	Sand Medium brown, sandy, gravel, moist
	4						
	6	SS					
	8		17,20,50-5"	<1	SS	Sandstone Red brown, fine grain, silty, iron stain, dry	
	10	SS					
	12						
	14		TOTAL BORING DEPTH - 10.5 Ft .				
	16						
	18						
	20						
	22						
	24						

Legend:

Depth to Groundwater

During Drilling

After Drilling

Monitor Well Completion:

Cement

Bentonite Chips

Bentonite Seal

Sand Pack

Blank PVC

Screen PVC

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion: N/A

Groundwater at 18.3 ft. 12/9/10

Collect groundwater grab sample through augers w/ bailer 12/9/10

Backfill boring w/ cuttings

Note: All depths are below ground surface

Lithologic Boring Log

Soil Boring #	B7	PROJECT #		CLIENT NAME:			
Piezometer #	N/A	25107093		City of Longmont			
Date Started:	12/17/2010			Location:			Sherwood and Bogott Properties, City of Longmont, Colorado
Date Completed:	12/17/2010			Elevation:			TOC: NA MSL: NA
Type of Drill:	CME-75			Driller:		Lenny J. Geologist: Kevin Taylor	
Bit Size:	6-Inch Hollow Stem Auger			Helper:		Proj. Mgr.: Kevin Taylor	
Drilling Company: High Plains Drilling							
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - North side of Serafini G.U 1-18 well head
	2	CS		<1	B7-4	SP	Sand Medium brown, very fine grain, silty, moist
	4						
	6	CS				SC	Sand Red brown, fine grain, clayey, wet
	8						
		CS				GW	Gravel Red brown, w/ sand, very fine-very coarse grain, iron stain, wet
	10						TOTAL BORING DEPTH - 9 Ft .
	12						
	14						
	16						
	18						
	20						
	22						
	24						

Legend:

Depth to Groundwater

During Drilling

After Drilling

Monitor Well Completion:

Cement

Bentonite Chips

Bentonite Seal

Sand Pack

Blank PVC

Screen PVC

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion:

Groundwater at 4 ft. 12/17/10

Collect groundwater grab sample through open hole w/ bailer 12/17/10

Backfill boring w/ hydrated bentonite chips

Note: All depths are below ground surface

Lithologic Boring Log

Soil Boring #	B8	PROJECT #		CLIENT NAME:			
Piezometer #	N/A	25107093		City of Longmont			
Date Started:	12/17/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado			
Date Completed:	12/17/2010	Elevation:		TOC:	NA	MSL:	NA
Type of Drill:	Geoprobe 5400	Driller:		Lenny J.	Geologist: Kevin Taylor		
Bit Size:	2-Inch MacroCore®	Helper:		Proj. Mgr.: Kevin Taylor			
Drilling Company: High Plains Drilling							
Temporary 1-inch PVC	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - Northeast side of Serafini tank battery
<div>▽</div> <div>4.8 Ft. 12/17/10</div>	2	CS		<1	<div>B8-4</div>	<div>SP</div>	Sand Medium brown, very fine grain, silty, moist
	4						
	6	CS				<div>SC</div>	Sand Red brown, fine grain, clayey, wet
	8						
				<1	<div>GM</div>	Gravel Red brown, w/ sand, very fine-very coarse grain, iron stain, wet	
	10						TOTAL BORING DEPTH - 8 Ft .
	12						
	14						
	16						
	18						
	20						
	22						
	24						
<div>Legend:</div> <div><div>Depth to Groundwater</div><div>During Drilling</div><div>After Drilling</div></div> <div><div>Monitor Well Completion:</div><div>Cement</div><div>Bentonite Chips</div><div>Bentonite Seal</div><div>Sand Pack</div><div>Blank PVC</div><div>Screen PVC</div></div> <div><div>Sample Type</div><div>DC - Drill Cuttings</div><div>SS - Split Spoon</div><div>CS - Continuous Sample</div><div>RS - Ring Sampler</div><div>Lab Sample</div><div>NR- No Recovery</div><div>NS- No Sample</div><div>PID measurements &lt; 1 ppm recorded as &lt; 1 or non-detected for volatile organic vapors</div></div> <div><div>Lithology:</div><div>Concrete</div><div>Fill</div><div>Sand</div><div>Gravel</div><div>Clay</div><div>Claystone</div><div>Sandstone</div></div> <div><div>Completion:</div><div>Groundwater at 4 ft. 12/17/10</div><div>Collect groundwater grab sample through open hole w/ bailer 12/17/10</div><div>Backfill boring w/ bentonite chips</div></div> <div>Note: All depths are below ground surface</div>							

Lithologic Boring Log

Soil Boring #	B9	PROJECT #		CLIENT NAME:					
Piezometer #	N/A	25107093		City of Longmont					
Date Started:	12/17/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado					
Date Completed:	12/17/2010	Elevation:		TOC:	NA	MSL:	NA		
Type of Drill:	Geoprobe 5400	Driller:		Lenny J.	Geologist: Kevin Taylor				
Bit Size:	2-Inch MacroCore®	Helper:		Proj. Mgr.: Kevin Taylor					
Drilling Company: High Plains Drilling									
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - North side of Serafini tank battery		
▽ 7 ft. 12/17/10	2	CS		<1		SP	Sand Medium brown, very fine grain, gray petroleum stain at 4 ft.		
	4								
	6	CS				703	B9-6	SC	Sand Gray, very fine grain, petroleum odor and stain, moist
	8								
	10						TOTAL BORING DEPTH - 8 Ft .		
	12								
	14								
	16								
	18								
	20								
	22								
	24								
<div>Legend:</div> <div><div>Depth to Groundwater</div><div>▽ During Drilling</div><div>▼ After Drilling</div></div> <div><div>Monitor Well Completion:</div><div><div>Cement</div><div>Bentonite Chips</div><div>Bentonite Seal</div><div>Sand Pack</div><div>Blank PVC</div><div>Screen PVC</div></div></div> <div><div>Sample Type</div><div>DC - Drill Cuttings</div><div>SS - Split Spoon</div><div>CS - Continuous Sample</div><div>RS - Ring Sampler</div><div>Lab Sample</div><div>NR- No Recovery</div><div>NS- No Sample</div><div>PID measurements &lt; 1 ppm recorded as &lt; 1 or non-detected for volatile organic vapors</div></div> <div><div>Lithology:</div><div><div>Concrete</div><div>Fill</div><div>Sand</div><div>Gravel</div><div>Clay</div><div>Claystone</div><div>Sandstone</div></div></div> <div><div>Completion:</div><div>Groundwater at 7 ft. 12/17/10</div><div>Collect groundwater grab sample through open hole w/ bailer 12/17/10</div><div>Backfill boring w/ bentonite chips</div></div>									

Note: All depths are below ground surface

Lithologic Boring Log

Soil Boring #	B10	PROJECT #			CLIENT NAME:		
Piezometer #	N/A	25107093			City of Longmont		
Date Started:		12/17/2010		Location:		Sherwood and Bogott Properties, City of Longmont, Colorado	
Date Completed:		12/17/2010		Elevation:		TOC: NA MSL: NA	
Type of Drill:		Geoprobe 5400		Driller:		Lenny J. Geologist: Kevin Taylor	
Bit Size:		2-Inch MacroCore®		Helper:		Proj. Mgr.: Kevin Taylor	
Drilling Company: High Plains Drilling							
	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Sherwood Property - North side of Powell#1 well head
<div>▽</div> <div>10.85 ft. 12/17/10</div>	2	CS		4	B10-4		Fill Medium gray-dark brown, clayey, slightly moist
	4						
	6	CS		<1			Clay Medium-dark brown, sandy, fine grain, moist
	8						
	10	CS		<1			Gravel Brown gray, w/ sand, very fine-very coarse grain, slight petroleum odor, moist
	12						
	14	CS		<1			Gravel Gray brown, w/ sand very fine-very coarse grain, moist
							Gravel Gray brown, w/ sand, very fine-very coarse grain, wet
	16						TOTAL BORING DEPTH - 14.5 Ft .
	18						
	20						
	22						
	24						

Legend:							
Monitor Well Completion:		Sample Type		Lithology:		Completion:	
Depth to Groundwater		DC - Drill Cuttings				Groundwater at 10.85 ft. 12/17/10	
During Drilling		SS - Split Spoon				Collect groundwater grab sample through open hole w/ bailer 12/17/10	
After Drilling		CS - Continuous Sample				Backfill boring w/ bentonite chips	
		RS - Ring Sampler					
		Lab Sample					
		NR- No Recovery					
		NS- No Sample					
Note: All depths are below ground surface				PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors			



## Lithologic Boring Log

Soil Boring #		B11		PROJECT #		CLIENT NAME:	
Piezometer #		N/A		25107093		City of Longmont	
Date Started: 12/17/2010				Location: Sherwood and Bogott Properties, City of Longmont, Colorado			
Date Completed: 12/17/2010				Elevation: TOC: NA MSL: NA			
Type of Drill: Geoprobe 5400				Driller: Lenny J.		Geologist: Kevin Taylor	
Bit Size: 2-Inch MacroCore®				Helper:		Proj. Mgr.: Kevin Taylor	
Drilling Company: High Plains Drilling							
Temporary 1-inch PVC	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Bogott Property - North side of Stamp #2 tank battery
	2	CS		<1		CL	Clay Medium-light brown, very fine grain, slightly moist
	4						
	6	CS				CLS	Claystone Brown gray, weathered, petroleum odor, gray stain, moist
	CLS					Claystone Olive gray brown, dry-trace moist	
	8						Direct push refusal at 7.5 ft. TOTAL BORING DEPTH - 7.5 Ft .
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	24						

Legend:		Completion: Temporary 1-Inch PVC				
Monitor Well Completion:		Sample Type				
Depth to Groundwater		Lithology:				
During Drilling	Cement	DC - Drill Cuttings	Concrete	Groundwater <1 inch 12/20/10		
After Drilling	Bentonite Chips	SS - Split Spoon	Fill		No groundwater grab sample collected	
	Bentonite Seal	CS - Continuous Sample	Sand			Insufficient groundwater
	Sand Pack	RS - Ring Sampler	Gravel			
Blank PVC	Lab Sample	Clay	Remove PVC pipe and backfill w/ hydrated bentonite chips			
Screen PVC		NR- No Recovery	Claystone			
		NS- No Sample	Sandstone			

Note: All depths are below ground surface

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithologic Boring Log

Soil Boring #	B12	PROJECT #		CLIENT NAME:			
Piezometer #	N/A	25107093		City of Longmont			
Date Started:	12/17/2010	Location:		Sherwood and Bogott Properties, City of Longmont, Colorado			
Date Completed:	12/17/2010	Elevation:		TOC:	NA	MSL:	NA
Type of Drill:	Geoprobe 5400	Driller:		Lenny J.	Geologist: Kevin Taylor		
Bit Size:	2-Inch MacroCore®	Helper:		Proj. Mgr.: Kevin Taylor			
Drilling Company: High Plains Drilling							
Temporary 1-inch PVC	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Bogott Property - East side of Stamp #2 tank battery
	2	CS		<1			Clay Medium-light brown, very fine grain, slightly moist
	4						
	6	CS					Claystone Brown gray, weathered, slightly moist
							Claystone Olive gray brown, dry-trace moist
Dry 12/20/2010	8						Direct push refusal at 7.5 ft. TOTAL BORING DEPTH - 7.5 Ft .
	10						
	12						
	14						
	16						
	18						
	20						
	22						
	24						

Legend:

Monitor Well Completion:

Depth to Groundwater

During Drilling

After Drilling

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion: Temporary 1-Inch PVC


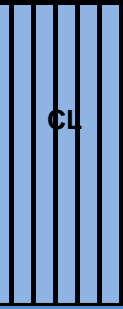

Dry - 12/20/10

Remove PVC pipe and backfill w/ hydrated bentonite chips

Note: All depths are below ground surface

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithologic Boring Log

Soil Boring #	B13	PROJECT #		CLIENT NAME:			
Piezometer #	N/A	25107093		City of Longmont			
Date Started:	12/17/2010		Location: Sherwood and Bogott Properties, City of Longmont, Colorado				
Date Completed:	12/17/2010		Elevation: TOC: NA MSL: NA				
Type of Drill:	Geoprobe 5400		Driller: Lenny J.		Geologist: Kevin Taylor		
Bit Size:	2-Inch MacroCore®		Helper:		Proj. Mgr.: Kevin Taylor		
Drilling Company: High Plains Drilling							
Temporary 1-inch PVC	Depth Feet	Sample Type	Blows per 6 inches	PID in ppm	Laboratory Sample	USCS Lithology	Description: Bogott Property - East side of Stamp #2 well head
	2	CS		387			Clay Medium brown, very fine grain, plastic, slightly moist  Dark gray petroleum staining and odor at 3.5 feet
	4						
	6	CS					Claystone Dark gray-gray, weathering decreasing with depth, petroleum gray stain and odor, slightly moist
	8						
	10			836	B13-8		Direct push refusal at 8 ft. TOTAL BORING DEPTH - 8 Ft .
	12						
	14						
	16						
	18						
	20						
	22						
	24						

Legend:

Depth to Groundwater

During Drilling

After Drilling

Monitor Well Completion:

Cement

Bentonite Chips

Bentonite Seal

Sand Pack

Blank PVC

Screen PVC

Sample Type

DC - Drill Cuttings

SS - Split Spoon

CS - Continuous Sample

RS - Ring Sampler

Lab Sample

NR- No Recovery

NS- No Sample

PID measurements < 1 ppm recorded as < 1 or non-detected for volatile organic vapors

Lithology:

Concrete

Fill

Sand

Gravel

Clay

Claystone

Sandstone

Completion: Temporary 1-Inch PVC

Groundwater <1 inch 12/20/10

No groundwater grab sample collected

Insufficient groundwater

Remove PVC pipe and backfill w/ hydrated bentonite chips

Note: All depths are below ground surface

**APPENDIX C**

**LABORATORY ANALYTICAL REPORTS**

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 17, 2010

Kevin Taylor  
Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge, CO 80033  
RE: Sherwood/Bogott

Enclosed are the results of analyses for samples received by Summit Scientific on 12/10/10 12:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to be 'PS' followed by a long horizontal stroke.

Paul Shrewsbury For Ben Shrewsbury  
President / Laboratory Director



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-20	R012077-01	Soil	12/09/10 13:05	12/10/10 12:00
B1	R012077-02	Water	12/09/10 13:15	12/10/10 12:00
B2-20	R012077-03	Soil	12/09/10 14:15	12/10/10 12:00
B2	R012077-04	Water	12/09/10 14:15	12/10/10 12:00
B3-5	R012077-05	Soil	12/09/10 15:00	12/10/10 12:00
B3	R012077-06	Water	12/09/10 15:00	12/10/10 12:00
B4-10	R012077-07	Soil	12/09/10 15:50	12/10/10 12:00
B4	R012077-08	Water	12/09/10 15:50	12/10/10 12:00
B5-5	R012077-09	Soil	12/10/10 09:45	12/10/10 12:00
B5	R012077-10	Water	12/10/10 09:45	12/10/10 12:00
B6-5	R012077-11	Soil	12/10/10 10:40	12/10/10 12:00
B6	R012077-12	Water	12/10/10 10:40	12/10/10 12:00

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
12/17/10 15:30

Summit Scientific  
741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-277-9531 Fax

12/20/2011

Page 1 of 2

Client: Terracon  
Address: 10625 West I-70 Frontage Road North, Suite 3  
City/State/Zip: Wheat Ridge, CO 80033  
Phone: (303) 423-3300  
Fax: (303) 423-3353  
Project Manager: Kevin Taylor  
E-Mail: ktaylor@terracon.com  
Project Name: Sherwood/Bogott  
Project Number: 25107093

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:	Special Instructions
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil		
B1-20	12/10/10	13:15	1	X		X					
B1	12/10/10	13:15	3	X		X					
B2-20	12/10/10	14:15	1	X		X					
B2	12/10/10	14:15	3	X		X					
B3-5	12/10/10	15:00	1	X		X					
B3	12/10/10	15:00	3	X		X					
B4-10	12/10/10	15:10	1	X		X					
B4	12/10/10	15:10	3	X		X					
B5-5	12/10/10	16:15	1	X		X					
B5	12/10/10	16:15	3	X		X					

Reinquisitioned by: [Signature] Date/Time: 12/10/10 17:00  
Reinquisitioned by: [Signature] Date/Time: 12/10/10 17:00  
Reinquisitioned by: [Signature] Date/Time: 12/10/10 17:00

Received by: [Signature] Date/Time: 12/10/10 17:00  
Received by: [Signature] Date/Time: 12/10/10 17:00  
Received by: [Signature] Date/Time: 12/10/10 17:00

Notes: Please call if TPH > 50 mg/kg

Sample Integrity: Temperature Upon Receipt: 52  
Intact: Yes No

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[Signature]







Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B1-20**  
**R012077-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/09/10 13:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0121003	12/10/10	12/12/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/10 13:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 13:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0121101	12/11/10	12/11/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/09/10 13:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	78.4-125		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B1**  
**R012077-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	0121607	12/16/10	12/17/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/09/10 13:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		102 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	80.8-120		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B2-20**  
**R012077-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/09/10 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0121003	12/10/10	12/12/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/10 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0121101	12/11/10	12/11/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/09/10 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	78.4-125		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B2**  
**R012077-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	0121607	12/16/10	12/17/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/09/10 14:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	80.8-120		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B3-5**  
**R012077-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/09/10 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0121003	12/10/10	12/12/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/10 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0121101	12/11/10	12/11/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/09/10 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	78.4-125		"	"	"	"	

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B3**  
**R012077-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	0121607	12/16/10	12/17/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/09/10 15:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		102 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	80.8-120		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B4-10**  
**R012077-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/09/10 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0121003	12/10/10	12/12/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/10 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0121101	12/11/10	12/11/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/09/10 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	78.4-125		"	"	"	"	

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B4**  
**R012077-08 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/10 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	0121607	12/16/10	12/17/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/09/10 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		94.8 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	80.8-120		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B5-5**  
**R012077-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/10/10 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0121003	12/10/10	12/12/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/10/10 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/10/10 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0121101	12/11/10	12/11/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/10/10 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	78.4-125		"	"	"	"	

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B5**  
**R012077-10 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/10/10 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	0121607	12/16/10	12/17/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/10/10 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	80.8-120		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B6-5**  
**R012077-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/10/10 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0121003	12/10/10	12/12/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/10/10 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/10/10 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0121101	12/11/10	12/11/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/10/10 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	78.4-125		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**B6**  
**R012077-12 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/10/10 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	0121607	12/16/10	12/17/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/10/10 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		100 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	80.8-120		"	"	"	"	

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0121003 - EPA 5030 Soil GC**

**Blank (0121003-BLK1)**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	ND	50	mg/kg
C28-C36 (TEPH-ORO)	ND	50	"

<i>Surrogate: o-Terphenyl</i>	<i>13.5</i>	<i>"</i>	<i>12.5</i>	<i>108</i>	<i>88.8-124</i>
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**LCS (0121003-BS1)**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	529	50	mg/kg	501	106	85-129	11.8
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**LCS (0121003-BS2)**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	538	50	mg/kg	501	107	85-129	11.8
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**LCS Dup (0121003-BSD1)**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	521	50	mg/kg	501	104	85-129	1.59	11.8
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**LCS Dup (0121003-BSD2)**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	548	50	mg/kg	501	109	85-129	1.70	11.8
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**Matrix Spike (0121003-MS1)**

**Source: R012067-01**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	490	50	mg/kg	501	37.9	90.3	77.3-134	8.39
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**Matrix Spike Dup (0121003-MSD1)**

**Source: R012067-01**

Prepared: 12/10/10 Analyzed: 12/11/10

C10-C28 (TEPH-DRO)	516	50	mg/kg	501	37.9	95.4	77.3-134	5.09	8.39
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Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0121101 - EPA 5030 Soil MS**

**Blank (0121101-BLK1)**

Prepared & Analyzed: 12/11/10

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		101	67.4-143			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	78.4-125			

**LCS (0121101-BS1)**

Prepared & Analyzed: 12/11/10

Benzene	0.115	0.0050	mg/kg	0.100		115	61-139		11.1	
Toluene	0.112	0.0050	"	0.100		112	64-132		10.9	
Ethylbenzene	0.119	0.0050	"	0.100		119	68.7-135		20	
m,p-Xylene	0.221	0.010	"	0.200		110	70.4-129		20	
o-Xylene	0.108	0.0050	"	0.100		108	66.9-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0433		"	0.0400		108	67.4-143			
Surrogate: Toluene-d8	0.0402		"	0.0400		101	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	78.4-125			

**LCS Dup (0121101-BSD1)**

Prepared & Analyzed: 12/11/10

Benzene	0.113	0.0050	mg/kg	0.100		113	61-139	1.71	11.1	
Toluene	0.111	0.0050	"	0.100		111	64-132	1.32	10.9	
Ethylbenzene	0.119	0.0050	"	0.100		119	68.7-135	0.0252	20	
m,p-Xylene	0.225	0.010	"	0.200		112	70.4-129	1.70	20	
o-Xylene	0.108	0.0050	"	0.100		108	66.9-126	0.0557	20	
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	67.4-143			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.1	78.4-125			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0121101 - EPA 5030 Soil MS**

Matrix Spike (0121101-MS1)		Source: R012081-01			Prepared & Analyzed: 12/11/10					
Benzene	0.100	0.0050	mg/kg	0.100	ND	100	42.9-137		17.9	
Toluene	0.0966	0.0050	"	0.100	ND	96.6	42.6-130		11.9	
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	39-133		20	
m,p-Xylene	0.189	0.010	"	0.200	ND	94.3	34.7-134		20	
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0469		"	0.0400		117	67.4-143			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	78.4-125			

Matrix Spike Dup (0121101-MSD1)		Source: R012081-01			Prepared & Analyzed: 12/11/10					
Benzene	0.102	0.0050	mg/kg	0.100	ND	102	42.9-137	1.58	17.9	
Toluene	0.0994	0.0050	"	0.100	ND	99.4	42.6-130	2.79	11.9	
Ethylbenzene	0.0995	0.0050	"	0.100	ND	99.5	39-133	1.14	20	
m,p-Xylene	0.187	0.010	"	0.200	ND	93.5	34.7-134	0.879	20	
o-Xylene	0.0920	0.0050	"	0.100	ND	92.0	41.3-126	1.65	20	
Surrogate: 1,2-Dichloroethane-d4	0.0478		"	0.0400		119	67.4-143			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		95.9	78.4-125			

**Batch 0121607 - EPA 5030 Water MS**

Blank (0121607-BLK1)		Prepared & Analyzed: 12/16/10								
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	57.9-139			
Surrogate: Toluene-d8	13.0		"	13.3		97.8	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	80.8-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0121607 - EPA 5030 Water MS**

**LCS (0121607-BS1)**

Prepared & Analyzed: 12/16/10

Benzene	32.0	1.0	ug/l	33.3		95.9	60.1-131		10.9	
Toluene	31.0	1.0	"	33.3		93.1	65.9-127		11.3	
Ethylbenzene	32.3	1.0	"	33.3		97.0	65.1-129		20	
m,p-Xylene	57.3	2.0	"	66.7		85.9	66.8-127		20	
o-Xylene	31.7	1.0	"	33.3		95.1	61.2-120		20	
Surrogate: 1,2-Dichloroethane-d4	15.2		"	13.3		114	57.9-139			
Surrogate: Toluene-d8	13.3		"	13.3		100	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.1	80.8-120			

**LCS Dup (0121607-BSD1)**

Prepared & Analyzed: 12/16/10

Benzene	35.8	1.0	ug/l	33.3		107	60.1-131	11.2	10.9	
Toluene	35.2	1.0	"	33.3		106	65.9-127	12.6	11.3	
Ethylbenzene	34.6	1.0	"	33.3		104	65.1-129	6.84	20	
m,p-Xylene	62.1	2.0	"	66.7		93.1	66.8-127	8.03	20	
o-Xylene	33.7	1.0	"	33.3		101	61.2-120	6.20	20	
Surrogate: 1,2-Dichloroethane-d4	15.3		"	13.3		115	57.9-139			
Surrogate: Toluene-d8	13.8		"	13.3		104	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	80.8-120			

**Matrix Spike (0121607-MS1)**

Source: R012090-01

Prepared & Analyzed: 12/16/10

Benzene	34.7	1.0	ug/l	33.3	ND	104	52.7-130		19.3	
Toluene	33.8	1.0	"	33.3	ND	101	57-127		18.7	
Ethylbenzene	34.0	1.0	"	33.3	ND	102	59.2-127		20	
m,p-Xylene	61.4	2.0	"	66.7	ND	92.1	53.2-132		20	
o-Xylene	32.0	1.0	"	33.3	ND	95.9	56.3-117		20	
Surrogate: 1,2-Dichloroethane-d4	15.4		"	13.3		115	57.9-139			
Surrogate: Toluene-d8	13.3		"	13.3		100	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.8	80.8-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0121607 - EPA 5030 Water MS**

Matrix Spike Dup (0121607-MSD1)	Source: R012090-01			Prepared: 12/16/10 Analyzed: 12/17/10						
Benzene	33.0	1.0	ug/l	33.3	ND	99.0	52.7-130	4.91	19.3	
Toluene	31.8	1.0	"	33.3	ND	95.3	57-127	6.14	18.7	
Ethylbenzene	32.1	1.0	"	33.3	ND	96.2	59.2-127	5.81	20	
m,p-Xylene	59.3	2.0	"	66.7	ND	89.0	53.2-132	3.43	20	
o-Xylene	31.3	1.0	"	33.3	ND	94.0	56.3-117	1.99	20	
Surrogate: 1,2-Dichloroethane-d4	15.4		"	13.3		116	57.9-139			
Surrogate: Toluene-d8	13.9		"	13.3		104	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.6	80.8-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
12/17/10 15:30

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

---

Summit Scientific

A handwritten signature in black ink, appearing to be 'JM' followed by a long horizontal stroke.

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# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 03, 2011

Kevin Taylor  
Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge, CO 80033  
RE: Sherwood/Bogott

Enclosed are the results of analyses for samples received by Summit Scientific on 12/17/10 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' or 'Shrewsbury', written in a cursive style.

Ben Shrewsbury  
President / Laboratory Director





Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
01/03/11 16:01

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B7	R012128-01	Water	12/17/10 09:40	12/17/10 14:00
B7-4	R012128-02	Soil	12/17/10 09:44	12/17/10 14:00
B8	R012128-03	Water	12/17/10 09:55	12/17/10 14:00
B8-4	R012128-04	Soil	12/17/10 09:55	12/17/10 14:00
B9	R012128-05	Water	12/17/10 10:30	12/17/10 14:00
B9-6	R012128-06	Soil	12/17/10 10:30	12/17/10 14:00
B10	R012128-07	Water	12/17/10 11:30	12/17/10 14:00
B10-4	R012128-08	Soil	12/17/10 11:30	12/17/10 14:00
B11-6	R012128-09	Soil	12/17/10 12:05	12/17/10 14:00
B12-5.5	R012128-10	Soil	12/17/10 13:00	12/17/10 14:00
B13-8	R012128-11	Soil	12/17/10 13:30	12/17/10 14:00

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

Summit Scientific

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-277-9531 Fax

Page 1 of 2

Client: Terracon

Address: 10625 West I-70 Frontage Road North, Suite 3

City/State/Zip: Wheat Ridge, CO 80033

Phone: (303) 423-3300

Sample Name: Kevin Taylor

Project Manager: Kevin Taylor

E-Mail: KSTALLER@TERRACON.COM

Project Name: Sherwood/Bogott

Project Number: 25107093

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:	Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #			Other (Specify)
B7	12/10	944	3	X				X					
B7-4		944	1		X			X					
B7		955	13	X				X					
B7-4		955	1	X				X					
B9		1030	3	X				X					
B9-6		1030	1	X				X					
B10		1130	3	X				X					
B10-4		1130	1	X				X					
B11-6		1205	1	X				X					
B12-5.5		1300	1	X				X					

Relinquished by:	Date/Time:	Received by:	Date/Time:
[Signature]	12/10/10 1400	[Signature]	12-27-10
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:

Turn Around Time (Check)	Notes:
<input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hours <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Standard	Call ID TPA > 500mg/Kg

Sample Integrity:
Temperature Upon Receipt: 5.1 Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No

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[Signature]





Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B7**  
**R012128-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 09:40

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	0122106	12/21/10	12/22/10	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: 12/17/10 09:40

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		57.9-139		"	"	"	"	
Surrogate: Toluene-d8		106 %		83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		80.8-120		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B7-4**  
**R012128-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 09:44

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/17/10 09:44

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 09:44

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/17/10 09:44

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		95.4 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	78.4-125		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B8**  
**R012128-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 09:55

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	0122106	12/21/10	12/22/10	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: 12/17/10 09:55

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		110 %		57.9-139		"	"	"	"	
Surrogate: Toluene-d8		97.5 %		83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		80.8-120		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B8-4**  
**R012128-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/17/10 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/17/10 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		95.1 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	78.4-125		"	"	"	"	

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B9**  
**R012128-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>110</b>	1.0	ug/l	1	0122106	12/21/10	12/22/10	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>140</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>3500</b>	100	"	100	"	"	12/22/10	"	

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	57.9-139		"	"	12/22/10	"	
Surrogate: Toluene-d8		103 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	80.8-120		"	"	"	"	

Summit Scientific

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B9-6**  
**R012128-06 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	0122901	12/29/10	12/31/10	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
<b>Fluorene</b>	<b>60.5</b>	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>514</b>	100	"	20	"	"	01/02/11	"	
<b>Phenanthrene</b>	<b>70.4</b>	5.00	"	1	"	"	12/31/10	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		87.0 %	30-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		51.4 %	30-120		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		113 %	30-120		"	"	"	"	
Surrogate: Terphenyl-dl4		86.8 %	30-120		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (TEPH-DRO)</b>	<b>270</b>	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B9-6**  
**R012128-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	88.8-124		0122004	12/20/10	12/21/10	8015 Full Carbon Chain	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.55	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	4.4	0.050	"	10	"	"	12/21/10	"	
Xylenes (total)	1.6	0.0050	"	1	"	"	12/21/10	"	
Gasoline Range Hydrocarbons	550	50	"	100	"	"	12/21/10	"	

Date Sampled: 12/17/10 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.2 %	67.4-143		"	"	12/21/10	"	
Surrogate: Toluene-d8		86.6 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.4 %	78.4-125		"	"	"	"	

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10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B10**  
**R012128-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 11:30

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	0122106	12/21/10	12/22/10	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: 12/17/10 11:30

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		107 %		57.9-139		"	"	"	"	
Surrogate: Toluene-d8		101 %		83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		80.8-120		"	"	"	"	

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10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B10-4**  
**R012128-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	61	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/17/10 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/17/10 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		93.9 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	78.4-125		"	"	"	"	

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B11-6**  
**R012128-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	190	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/17/10 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.10	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.014	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9.2	0.50	"	"	"	"	"	"	

Date Sampled: 12/17/10 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		78.7 %	78.4-125		"	"	"	"	

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10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B12-5.5**  
**R012128-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/17/10 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	88.8-124		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/17/10 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.3 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	78.4-125		"	"	"	"	

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Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B13-8**  
**R012128-11 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: 12/17/10 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Acenaphthene</b>	<b>19.3</b>	5.00	ug/kg	1	0122901	12/29/10	12/31/10	EPA 8270D SIM	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>9.42</b>	5.00	"	"	"	"	"	"	
<b>Benzo (k) fluoranthene</b>	<b>11.0</b>	5.00	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
<b>Chrysene</b>	<b>52.3</b>	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
<b>Fluorene</b>	<b>216</b>	25.0	"	5	"	"	01/02/11	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	1	"	"	12/31/10	"	
<b>Naphthalene</b>	<b>951</b>	250	"	50	"	"	01/02/11	"	
<b>Phenanthrene</b>	<b>399</b>	250	"	"	"	"	"	"	
Pyrene	ND	5.00	"	1	"	"	12/31/10	"	

Date Sampled: 12/17/10 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		64.9 %	30-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		56.6 %	30-120		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		94.1 %	30-120		"	"	"	"	
Surrogate: Terphenyl-dl4		90.7 %	30-120		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (TEPH-DRO)</b>	<b>1600</b>	50	mg/kg	1	0122004	12/20/10	12/21/10	8015 Full Carbon Chain	
<b>C28-C36 (TEPH-ORO)</b>	<b>180</b>	50	"	"	"	"	"	"	

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Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**B13-8**  
**R012128-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/17/10 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		122 %	88.8-124		0122004	12/20/10	12/21/10	8015 Full Carbon Chain	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/17/10 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.029	0.0050	mg/kg	1	0122005	12/20/10	12/21/10	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.49	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.7	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	190	5.0	"	10	"	"	"	"	

Date Sampled: 12/17/10 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		92.4 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.6 %	78.4-125		"	"	"	"	

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10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

## Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch 0122901 - EPA 3550A

##### Blank (0122901-BLK1)

Prepared: 12/29/10 Analyzed: 12/30/10

Acenaphthene	ND	5.00	ug/kg							
Acenaphthylene	ND	5.00	"							
Anthracene	ND	5.00	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (k) fluoranthene	ND	5.00	"							
Benzo (g,h,i) perylene	ND	5.00	"							
Benzo (a) pyrene	ND	5.00	"							
Chrysene	ND	5.00	"							
Dibenz (a,h) anthracene	ND	10.0	"							
Fluoranthene	ND	5.00	"							
Fluorene	ND	5.00	"							
Indeno (1,2,3-cd) pyrene	ND	10.0	"							
Naphthalene	ND	5.00	"							
Phenanthrene	ND	5.00	"							
Pyrene	ND	5.00	"							
Surrogate: Nitrobenzene-d5	6.40		"	33.3	19.2		30-120			
Surrogate: 2-Fluorobiphenyl	9.64		"	33.3	28.9		30-120			
Surrogate: 2,4,6-Tribromophenol	28.3		"	33.3	84.9		30-120			
Surrogate: Terphenyl-d14	25.7		"	33.3	77.1		30-120			

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Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122901 - EPA 3550A**

**LCS (0122901-BS1)**

Prepared: 12/29/10 Analyzed: 12/30/10

Acenaphthene	10.7	5.00	ug/kg	33.3		32.1	30-120		30	
Acenaphthylene	10.9	5.00	"	33.3		32.7	30-120		30	
Anthracene	16.8	5.00	"	33.3		50.5	30-120		30	
Benzo (a) anthracene	26.2	5.00	"	33.3		78.6	30-120		30	
Benzo (b) fluoranthene	27.0	5.00	"	33.3		81.0	30-120		30	
Benzo (k) fluoranthene	24.4	5.00	"	33.3		73.1	30-120		30	
Benzo (g,h,i) perylene	25.7	5.00	"	33.3		77.2	30-120		30	
Benzo (a) pyrene	26.4	5.00	"	33.3		79.2	30-120		30	
Chrysene	23.8	5.00	"	33.3		71.4	30-120		30	
Dibenz (a,h) anthracene	25.3	10.0	"	33.3		75.9	30-120		30	
Fluoranthene	25.5	5.00	"	33.3		76.5	30-120		30	
Fluorene	12.4	5.00	"	33.3		37.2	30-120		30	
Indeno (1,2,3-cd) pyrene	25.9	10.0	"	33.3		77.6	30-120		30	
Naphthalene	10.4	5.00	"	33.3		31.1	30-120		30	
Phenanthrene	19.2	5.00	"	33.3		57.6	30-120		30	
Pyrene	24.7	5.00	"	33.3		74.1	30-120		30	
Surrogate: Nitrobenzene-d5	7.62		"	33.3		22.9	30-120			
Surrogate: 2-Fluorobiphenyl	10.9		"	33.3		32.6	30-120			
Surrogate: 2,4,6-Tribromophenol	28.6		"	33.3		85.9	30-120			
Surrogate: Terphenyl-d14	24.1		"	33.3		72.2	30-120			

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Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122901 - EPA 3550A**

Matrix Spike (0122901-MS1)		Source: R012128-06			Prepared: 12/29/10		Analyzed: 12/31/10			
Acenaphthene	ND	5.00	ug/kg	33.3	ND		30-120		30	QM-05
Acenaphthylene	ND	5.00	"	33.3	3.69	NR	30-120		30	QM-05
Anthracene	40.9	5.00	"	33.3	ND	123	30-120		30	QM-05
Benzo (a) anthracene	86.8	5.00	"	33.3	0.400	259	30-120		30	QM-05
Benzo (b) fluoranthene	123	5.00	"	33.3	ND	368	30-120		30	QM-05
Benzo (k) fluoranthene	87.1	5.00	"	33.3	ND	261	30-120		30	QM-05
Benzo (g,h,i) perylene	112	5.00	"	33.3	ND	336	30-120		30	QM-05
Benzo (a) pyrene	93.5	5.00	"	33.3	ND	281	30-120		30	QM-05
Chrysene	115	5.00	"	33.3	3.31	334	30-120		30	QM-05
Dibenz (a,h) anthracene	36.8	10.0	"	33.3	ND	111	30-120		30	QM-05
Fluoranthene	195	5.00	"	33.3	ND	584	30-120		30	QM-05
Fluorene	ND	5.00	"	33.3	60.5	NR	30-120		30	QM-05
Indeno (1,2,3-cd) pyrene	85.0	10.0	"	33.3	ND	255	30-120		30	QM-05
Naphthalene	ND	5.00	"	33.3	514	NR	30-120		30	QM-05
Phenanthrene	177	5.00	"	33.3	70.4	320	30-120		30	QM-05
Pyrene	259	5.00	"	33.3	2.10	771	30-120		30	QM-05
Surrogate: Nitrobenzene-d5	0.00		"	33.3			30-120			S-06
Surrogate: 2-Fluorobiphenyl	0.00		"	33.3			30-120			S-06
Surrogate: 2,4,6-Tribromophenol	37.6		"	33.3		113	30-120			
Surrogate: Terphenyl-d14	28.3		"	33.3		84.9	30-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122901 - EPA 3550A**

Matrix Spike Dup (0122901-MSD1)		Source: R012128-06			Prepared: 12/29/10		Analyzed: 12/31/10			
Acenaphthene	ND	5.00	ug/kg	33.3	ND		30-120		30	QM-05
Acenaphthylene	ND	5.00	"	33.3	3.69	NR	30-120		30	QM-05
Anthracene	38.6	5.00	"	33.3	ND	116	30-120	5.89	30	QM-05
Benzo (a) anthracene	85.0	5.00	"	33.3	0.400	254	30-120	2.07	30	QM-05
Benzo (b) fluoranthene	101	5.00	"	33.3	ND	302	30-120	19.9	30	QM-05
Benzo (k) fluoranthene	76.8	5.00	"	33.3	ND	230	30-120	12.5	30	QM-05
Benzo (g,h,i) perylene	80.9	5.00	"	33.3	ND	243	30-120	32.1	30	QM-05
Benzo (a) pyrene	84.9	5.00	"	33.3	ND	255	30-120	9.60	30	QM-05
Chrysene	118	5.00	"	33.3	3.31	345	30-120	3.16	30	QM-05
Dibenz (a,h) anthracene	19.2	10.0	"	33.3	ND	57.5	30-120	63.2	30	QM-05
Fluoranthene	153	5.00	"	33.3	ND	458	30-120	24.2	30	QM-05
Fluorene	ND	5.00	"	33.3	60.5	NR	30-120		30	QM-05
Indeno (1,2,3-cd) pyrene	59.5	10.0	"	33.3	ND	178	30-120	35.3	30	QM-05
Naphthalene	ND	5.00	"	33.3	514	NR	30-120		30	QM-05
Phenanthrene	154	5.00	"	33.3	70.4	251	30-120	14.0	30	QM-05
Pyrene	393	5.00	"	33.3	2.10	NR	30-120	41.0	30	QM-05
Surrogate: Nitrobenzene-d5	0.00		"	33.3			30-120			S-06
Surrogate: 2-Fluorobiphenyl	0.00		"	33.3			30-120			S-06
Surrogate: 2,4,6-Tribromophenol	47.7		"	33.3		143	30-120			S-06
Surrogate: Terphenyl-d14	52.1		"	33.3		156	30-120			S-06

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
01/03/11 16:01

**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122004 - EPA 3550A**

**Blank (0122004-BLK1)**

Prepared & Analyzed: 12/20/10

C10-C28 (TEPH-DRO) ND 50 mg/kg

C28-C36 (TEPH-ORO) ND 50 "

Surrogate: o-Terphenyl 13.9 " 12.5 111 88.8-124

**Blank (0122004-BLK2)**

Prepared & Analyzed: 12/20/10

C10-C28 (TEPH-DRO) ND 50 mg/kg

C28-C36 (TEPH-ORO) ND 50 "

Surrogate: o-Terphenyl 14.1 " 12.5 113 88.8-124

**LCS (0122004-BS1)**

Prepared & Analyzed: 12/20/10

C10-C28 (TEPH-DRO) ND 50 mg/kg 85-129 11.8

**LCS (0122004-BS2)**

Prepared & Analyzed: 12/20/10

C10-C28 (TEPH-DRO) 550 50 mg/kg 501 110 85-129 11.8

**LCS Dup (0122004-BSD1)**

Prepared & Analyzed: 12/20/10

C10-C28 (TEPH-DRO) ND 50 mg/kg 85-129 11.8

**LCS Dup (0122004-BSD2)**

Prepared & Analyzed: 12/20/10

C10-C28 (TEPH-DRO) 540 50 mg/kg 501 108 85-129 1.86 11.8

**Matrix Spike (0122004-MS1)**

Source: R012105-01

Prepared: 12/20/10 Analyzed: 12/21/10

C10-C28 (TEPH-DRO) ND 50 mg/kg 40.5 77.3-134 8.39

**Matrix Spike (0122004-MS2)**

Source: R012105-01

Prepared: 12/20/10 Analyzed: 12/21/10

C10-C28 (TEPH-DRO) 544 50 mg/kg 501 40.5 101 77.3-134 8.39

**Matrix Spike Dup (0122004-MSD1)**

Source: R012105-01

Prepared: 12/20/10 Analyzed: 12/21/10

C10-C28 (TEPH-DRO) ND 50 mg/kg 40.5 77.3-134 8.39

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
01/03/11 16:01

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122004 - EPA 3550A**

**Matrix Spike Dup (0122004-MSD2)**

**Source: R012105-01**

Prepared: 12/20/10 Analyzed: 12/21/10

C10-C28 (TEPH-DRO)	526	50	mg/kg	501	40.5	96.9	77.3-134	3.43	8.39
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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122005 - EPA 5030 Soil MS**

**Blank (0122005-BLK1)**

Prepared: 12/20/10 Analyzed: 12/21/10

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0320		"	0.0400		79.9	67.4-143			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400		91.6	78.4-125			

**LCS (0122005-BS1)**

Prepared: 12/20/10 Analyzed: 12/21/10

Benzene	0.0946	0.0050	mg/kg	0.100		94.6	61-139		11.1	
Toluene	0.0904	0.0050	"	0.100		90.4	64-132		10.9	
Ethylbenzene	0.103	0.0050	"	0.100		103	68.7-135		20	
m,p-Xylene	0.188	0.010	"	0.200		94.0	70.4-129		20	
o-Xylene	0.0917	0.0050	"	0.100		91.7	66.9-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0325		"	0.0400		81.3	67.4-143			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.7	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0400		88.7	78.4-125			

**LCS Dup (0122005-BSD1)**

Prepared: 12/20/10 Analyzed: 12/21/10

Benzene	0.100	0.0050	mg/kg	0.100		100	61-139	5.64	11.1	
Toluene	0.0964	0.0050	"	0.100		96.4	64-132	6.46	10.9	
Ethylbenzene	0.110	0.0050	"	0.100		110	68.7-135	5.89	20	
m,p-Xylene	0.198	0.010	"	0.200		98.8	70.4-129	5.01	20	
o-Xylene	0.0961	0.0050	"	0.100		96.1	66.9-126	4.70	20	
Surrogate: 1,2-Dichloroethane-d4	0.0327		"	0.0400		81.8	67.4-143			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.3	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400		89.3	78.4-125			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122005 - EPA 5030 Soil MS**

Matrix Spike (0122005-MS1)		Source: R012141-01			Prepared: 12/20/10		Analyzed: 12/21/10			
Benzene	0.109	0.0050	mg/kg	0.100	ND	109	42.9-137		17.9	
Toluene	0.104	0.0050	"	0.100	ND	104	42.6-130		11.9	
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	39-133		20	
m,p-Xylene	0.205	0.010	"	0.200	ND	103	34.7-134		20	
o-Xylene	0.103	0.0050	"	0.100	ND	103	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0369		"	0.0400		92.3	67.4-143			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.0	78.4-125			

Matrix Spike Dup (0122005-MSD1)		Source: R012141-01			Prepared: 12/20/10		Analyzed: 12/21/10			
Benzene	0.103	0.0050	mg/kg	0.100	ND	103	42.9-137	5.64	17.9	
Toluene	0.0984	0.0050	"	0.100	ND	98.4	42.6-130	5.80	11.9	
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	39-133	5.56	20	
m,p-Xylene	0.195	0.010	"	0.200	ND	97.4	34.7-134	5.16	20	
o-Xylene	0.0968	0.0050	"	0.100	ND	96.8	41.3-126	5.84	20	
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0400		93.0	67.4-143			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0354		"	0.0400		88.6	78.4-125			

**Batch 0122106 - EPA 5030 Water MS**

Blank (0122106-BLK1)					Prepared: 12/21/10		Analyzed: 12/22/10			
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	57.9-139			
Surrogate: Toluene-d8	13.6		"	13.3		102	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	80.8-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122106 - EPA 5030 Water MS**

**Blank (0122106-BLK2)**

Prepared: 12/21/10 Analyzed: 12/22/10

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		101	57.9-139			
Surrogate: Toluene-d8	12.5		"	13.3		93.5	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	80.8-120			

**LCS (0122106-BS1)**

Prepared: 12/21/10 Analyzed: 12/22/10

Benzene	29.6	1.0	ug/l	33.3		88.7	60.1-131		10.9	
Toluene	28.2	1.0	"	33.3		84.8	65.9-127		11.3	
Ethylbenzene	31.4	1.0	"	33.3		94.3	65.1-129		20	
m,p-Xylene	57.1	2.0	"	66.7		85.6	66.8-127		20	
o-Xylene	31.5	1.0	"	33.3		94.5	61.2-120		20	
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	57.9-139			
Surrogate: Toluene-d8	12.6		"	13.3		94.7	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.7	80.8-120			

**LCS (0122106-BS2)**

Prepared: 12/21/10 Analyzed: 12/22/10

Benzene	30.3	1.0	ug/l	33.3		91.0	60.1-131		10.9	
Toluene	29.8	1.0	"	33.3		89.3	65.9-127		11.3	
Ethylbenzene	30.9	1.0	"	33.3		92.8	65.1-129		20	
m,p-Xylene	57.4	2.0	"	66.7		86.1	66.8-127		20	
o-Xylene	30.9	1.0	"	33.3		92.6	61.2-120		20	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	57.9-139			
Surrogate: Toluene-d8	13.2		"	13.3		98.6	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.7	80.8-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122106 - EPA 5030 Water MS**

**LCS Dup (0122106-BSD1)**

Prepared: 12/21/10 Analyzed: 12/22/10

Benzene	28.4	1.0	ug/l	33.3		85.3	60.1-131	3.90	10.9	
Toluene	27.9	1.0	"	33.3		83.7	65.9-127	1.21	11.3	
Ethylbenzene	29.1	1.0	"	33.3		87.2	65.1-129	7.84	20	
m,p-Xylene	53.6	2.0	"	66.7		80.5	66.8-127	6.23	20	
o-Xylene	29.3	1.0	"	33.3		87.8	61.2-120	7.37	20	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	57.9-139			
Surrogate: Toluene-d8	13.0		"	13.3		97.6	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		94.1	80.8-120			

**LCS Dup (0122106-BSD2)**

Prepared: 12/21/10 Analyzed: 12/22/10

Benzene	28.7	1.0	ug/l	33.3		86.2	60.1-131	5.49	10.9	
Toluene	28.5	1.0	"	33.3		85.5	65.9-127	4.39	11.3	
Ethylbenzene	29.8	1.0	"	33.3		89.4	65.1-129	3.72	20	
m,p-Xylene	54.7	2.0	"	66.7		82.1	66.8-127	4.80	20	
o-Xylene	30.3	1.0	"	33.3		91.0	61.2-120	1.73	20	
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		105	57.9-139			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.6	80.8-120			

**Matrix Spike (0122106-MS1)**

Source: R012122-01

Prepared: 12/21/10 Analyzed: 12/22/10

Benzene	30.9	1.0	ug/l	33.3	ND	92.7	52.7-130		19.3	
Toluene	30.3	1.0	"	33.3	ND	91.0	57-127		18.7	
Ethylbenzene	33.0	1.0	"	33.3	ND	98.9	59.2-127		20	
m,p-Xylene	60.1	2.0	"	66.7	ND	90.2	53.2-132		20	
o-Xylene	33.0	1.0	"	33.3	ND	99.2	56.3-117		20	
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3		106	57.9-139			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.1	80.8-120			

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Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

Reported:  
01/03/11 16:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 0122106 - EPA 5030 Water MS**

Matrix Spike (0122106-MS2)		Source: R012122-02			Prepared: 12/21/10		Analyzed: 12/22/10			
Benzene	31.0	1.0	ug/l	33.3	ND	93.0	52.7-130		19.3	
Toluene	31.3	1.0	"	33.3	ND	94.0	57-127		18.7	
Ethylbenzene	32.2	1.0	"	33.3	ND	96.6	59.2-127		20	
m,p-Xylene	60.7	2.0	"	66.7	ND	91.0	53.2-132		20	
o-Xylene	33.7	1.0	"	33.3	ND	101	56.3-117		20	
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		103	57.9-139			
Surrogate: Toluene-d8	13.3		"	13.3		99.6	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	80.8-120			

Matrix Spike Dup (0122106-MSD1)		Source: R012122-01			Prepared: 12/21/10		Analyzed: 12/22/10			
Benzene	32.3	1.0	ug/l	33.3	ND	96.9	52.7-130	4.37	19.3	
Toluene	30.9	1.0	"	33.3	ND	92.7	57-127	1.86	18.7	
Ethylbenzene	33.6	1.0	"	33.3	ND	101	59.2-127	1.89	20	
m,p-Xylene	63.3	2.0	"	66.7	ND	94.9	53.2-132	5.11	20	
o-Xylene	33.5	1.0	"	33.3	ND	101	56.3-117	1.44	20	
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	57.9-139			
Surrogate: Toluene-d8	13.3		"	13.3		100	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.8	80.8-120			

Matrix Spike Dup (0122106-MSD2)		Source: R012122-02			Prepared: 12/21/10		Analyzed: 12/22/10			
Benzene	33.9	1.0	ug/l	33.3	ND	102	52.7-130	8.97	19.3	
Toluene	33.6	1.0	"	33.3	ND	101	57-127	6.87	18.7	
Ethylbenzene	32.8	1.0	"	33.3	ND	98.3	59.2-127	1.72	20	
m,p-Xylene	60.8	2.0	"	66.7	ND	91.2	53.2-132	0.263	20	
o-Xylene	33.4	1.0	"	33.3	ND	100	56.3-117	1.13	20	
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	57.9-139			
Surrogate: Toluene-d8	13.7		"	13.3		103	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3	80.8-120			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Terracon - Wheat Ridge  
10625 West I-70 Frontage Road, Suite 3  
Wheat Ridge CO, 80033

Project: Sherwood/Bogott  
Project Number: 25107093  
Project Manager: Kevin Taylor

**Reported:**  
01/03/11 16:01

### Notes and Definitions

S-06      The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.

QM-05    The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET      Analyte DETECTED

ND      Analyte NOT DETECTED at or above the reporting limit

NR      Not Reported

dry      Sample results reported on a dry weight basis

RPD      Relative Percent Difference