



June 11, 2013

Mr. Alex Fischer
West Environmental Supervisor
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado

**RE: Environmental Site Assessment Activities
Peakview Operating Company, LLC
Voloshin-Morton 1(-8)
API: 05-081-06189
Moffat County, Colorado**

Dear Mr. Fischer:

LT Environmental, Inc. (LTE), under the direction of Peakview Operating Company, LLC (Peakview), conducted environmental assessment and sampling activities at the Voloshin-Morton 1(-8) (Site). The Site is located in Moffat County, Colorado ¼ mile west of County Road 33 along Colorado State Highway 394. The legal site description is the northeast quarter of the southeast quarter of section 8, township 6 north, range 90 west of the 6th principal meridian. The Site Location Map is provided as Figure 1.

Site Investigation Activities

LTE advanced 21 soil borings at the Site on May 22 through May 23, 2013. The soil borings were advanced using a track-mounted, direct-push drill rig owned and operated by Alpine Remediation of Golden, Colorado. Soil borings SB01 through SB05, SB08, SB09, SB13, and SB16 through SB20 were completed as groundwater monitoring wells. A site map with soil boring and monitoring well locations is provided as Figure 2.

The soil borings were logged by an LTE field scientist and the soil was characterized by visual inspection of the soil samples. Additionally, soil samples were screened in the field using a photoionization detector (PID). The total depths of the soil borings ranged from approximately 10 feet below ground surface (bgs) to approximately 15 feet bgs in, where a defining layer of sandstone was encountered. The soil boring logs/well completion diagrams are included as Attachment 1.

Soil identified at the Site was predominantly a dense silty and fine sandy clay. Each boring was terminated in a dense, sandstone layer assumed to be acting as a confining unit.



Soil samples were collected from each boring. Soil samples with the highest PID reading and/or at the soil groundwater interface were submitted to ESC Lab Sciences (ESC) of Mount Juliet, Tennessee for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX); and total petroleum hydrocarbons (TPH). In addition to BTEX and TPH, soil samples collected from borings SB09 and SB15 were submitted for analysis of Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 metals, electrical conductivity (EC), pH, sodium adsorption ratio (SAR), and polycyclic aromatic hydrocarbons (PAHs).

Groundwater Monitoring Well Installation

Soil borings SB01 through SB05, SB08, SB09, SB13, and SB16 through SB20 were completed as groundwater monitoring wells. The monitoring wells were constructed of 1-inch diameter polyvinyl chloride (PVC) casing extending from the surface to the terminus of each boring. The lower section of each well consists of 0.010-inch factory slotted PVC well screen. Silica sand was placed from the bottom of each well to one foot above the screen to act as a filter pack for the monitoring well. Bentonite crumbles were placed from the top of the silica sand to approximately one foot bgs in each soil boring and hydrated to provide a seal against possible surface contamination and precipitation infiltration. A flush mount encased in concrete was installed on each monitoring well to protect the wellheads from vehicle traffic on the Site. Following installation, the monitoring wells were surveyed by LTE personnel. Each well was measures on the north side of the top of the casing. Well completion diagrams are provided as Attachment 1.

Groundwater Sampling

Groundwater samples from monitoring wells were collected on May 24, 2013. Monitoring well MW01 was not sampled due to fact that the well casing was filled with sediment. During the next site visit, LTE plans an attempt to clean out and develop the well. Prior to well developing and sampling each monitoring well, depth to static groundwater was measured and recorded for calculating well-specific purge volumes. The depth to static groundwater level at the Site ranged from 3.78 feet below top of casing (btoc) in MW19 to 5.42 feet btoc in MW04. During well development, all monitoring wells were purged dry except MW02. During development and purging activities, approximately 0.25 inches of free product was observed in MW18. Although product was observed, a sample was collected to obtain initial data. Groundwater samples were not collected until acceptable recovery occurred in the wells. Field parameters were collected during the developing and purging of each well. Field parameters and static water levels are summarized in Table 2. Following well development and purging, samples were collected and submitted to ESC for analysis of BTEX. Additionally, the sample collected from MW18 was submitted for total dissolved solids (TDS), chlorides, and sulfates. The monitoring wells were surveyed in order to determine general flow direction of groundwater beneath the site.

Soil Sample Laboratory Analytical Results

Laboratory analytical results indicate a benzene concentration of 11 milligrams per kilogram (mg/kg) in soil boring SB18 at a depth of 0 to 5 feet bgs, exceeding the applicable COGCC Table 910-1 standard (0.17 mg/kg). Concentrations of TPH were detected in soil boring SB09 at



0 to 5 feet bgs (1,580 mg/kg) and SB18 from 0 to 5 feet bgs (1,200 mg/kg) exceeding the applicable COGCC Table 190-1 standard of 500 mg/kg. Concentrations of arsenic were detected in SB09 at 0 to 5 feet bgs (7.8 mg/kg) and SB15 from 5 to 10 feet bgs (2.2 mg/kg) exceeding the applicable COGCC Table 910-1 standard of 0.39 mg/kg. All other analytes were either within COGCC Table 910-1 standards or below laboratory detection limits. Soil sample laboratory analytical data is summarized in Table 1.

Groundwater Sample Laboratory Analytical Results

Laboratory analytical results indicate benzene concentrations of 460 micrograms per liter ($\mu\text{g/l}$) (MW02), 2,200 $\mu\text{g/l}$ (MW09), 8.9 $\mu\text{g/l}$ (MW13), and 5,700 $\mu\text{g/l}$ (MW18), exceeding the applicable COGCC Table 910-1 standard of 5 $\mu\text{g/l}$. Toluene and total xylenes were detected in MW18 at concentrations 5,800 $\mu\text{g/l}$ and 2,400 $\mu\text{g/l}$, respectively. Both of these concentrations exceed their applicable COGCC Table 910-1 standard. All other analytes were either within COGCC Table 910-1 standards or below laboratory detection limits. Groundwater laboratory analytical data is summarized in Table 3.

Summary

On May 23 and 24 2013, LTE advanced 21 soil borings at the Voloshin Morton 1(-8) well pad. Thirteen of the soil borings were converted to monitoring wells. Hydrocarbons were observed during site investigation and monitoring well installation activities at the Site. A confining layer appears to exist approximately 10 feet bgs throughout the site that consists of a dense sandstone layer. Depth to static groundwater ranged from 3.78 feet btoc in MW19 to 5.42 feet btoc in MW04. Based on depth to water and survey results, groundwater flow at the Site appears to be generally to the north. A Groundwater Elevation Map is provided as Figure 3.

Limitations

No investigation is infallible. Some uncertainty will always exist concerning the presence or absence of potential contaminants at a particular property, irrespective of the rigor of the investigation. Accordingly, LTE does not warrant that contaminants, other than those identified in this report, do not exist at the subject property or may not exist there in the future.

LTE believes that it has performed the services summarized in this report in a manner consistent with the level of care and skill ordinarily exercised by members of the environmental profession practicing at the same time and under similar conditions in the area of the project.



LTE appreciates the opportunity to provide environmental services to Peakview. Please call us at 970-285-9985 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink, appearing to read "Chris McKisson".

Chris McKisson
Environmental Scientist

A handwritten signature in blue ink, appearing to read "Rob Fishburn".

Rob Fishburn, P.G.
Western Slope Office Manager/ Senior
Hydrogeologist

Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Groundwater Elevation Map
Table 1 – Soil Analytical Results
Table 2 – Groundwater Field Parameters
Table 3- Groundwater Analytical Results
Attachment 1 – Well Completion Diagrams
Attachment 2 – Laboratory Analytical Report

FIGURES



IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- ⊗ SOIL BORING/MONITORING WELL
- SOIL BORING

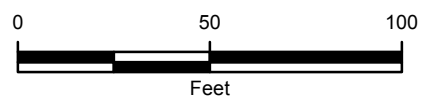


FIGURE 2
SITE MAP
VOLOSHIN MORTON 1-8
MOFFAT COUNTY, COLORADO

PEAKVIEW OPERATING COMPANY



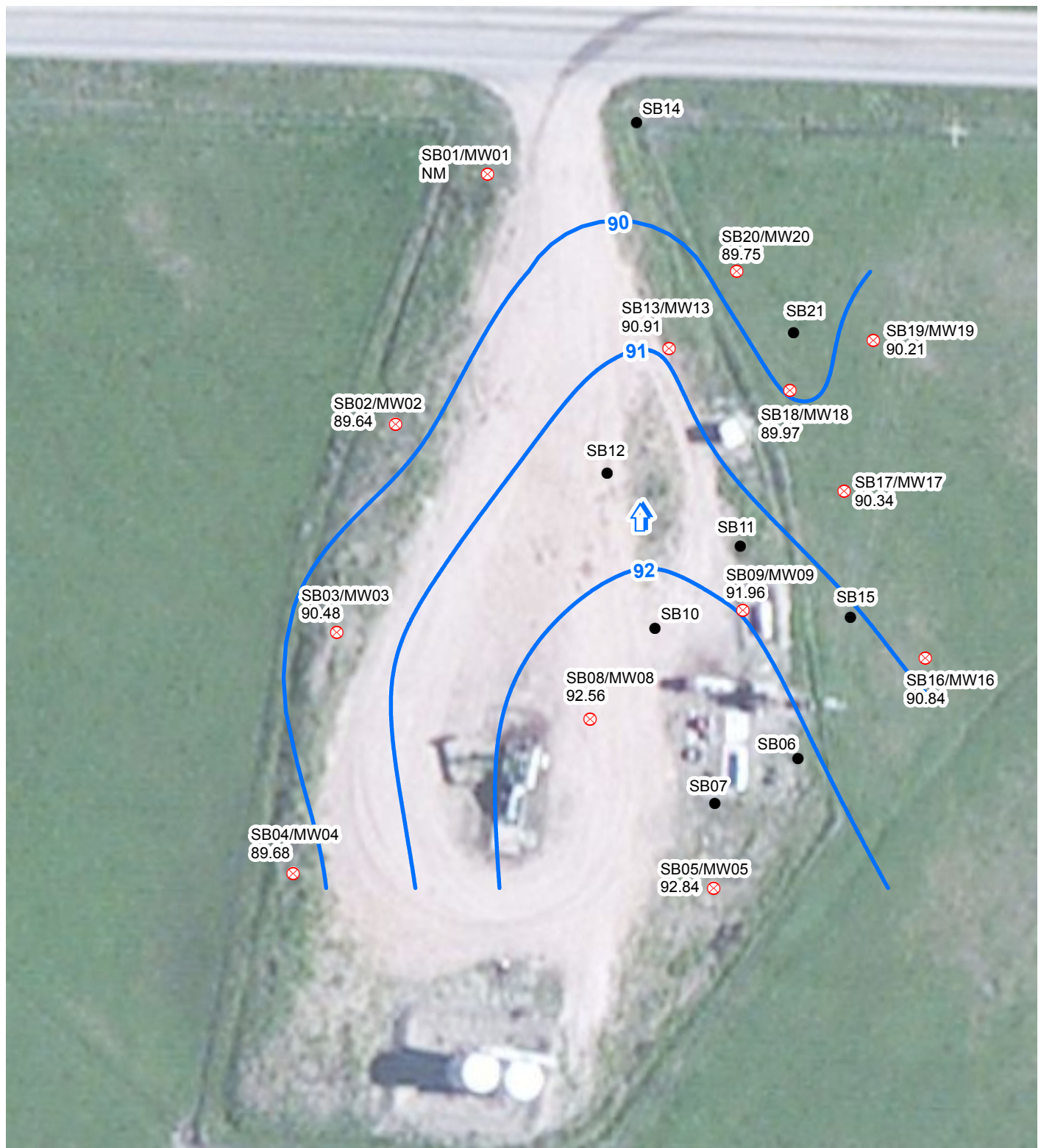


IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- ⊗ SOIL BORING/MONITORING WELL
- SOIL BORING
- ↑ ESTIMATED GROUNDWATER FLOW DIRECTION
- RELATIVE GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 1 FOOT
GRADIENT = 0.015 FT/FT

NM: NOT MEASURED

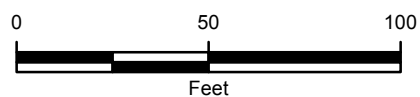


FIGURE 3
RELATIVE GROUNDWATER ELEVATION MAP
 MAY 24, 2013
 VOLOSHIN MORTON 1-8
 MOFFAT COUNTY, COLORADO
 PEAKVIEW OPERATING COMPANY



TABLES

TABLE 1
VOLOSHIN MORTON 1-8
SOIL ANALYTICAL RESULTS
PEAKVIEW OPERATING COMPANY, LLC

Sample ID	Date	Depth ft	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Total Xylenes mg/kg	TPH - GRO mg/kg	TPH - DRO mg/kg	TPH mg/kg	Arsenic mg/kg
SB01	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB02	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB03	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB04	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB05	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB06	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB07	5/22/2013	5-10	<0.0025	<0.25	0.35	0.28	47	190	237	NA
SB08	5/22/2013	5-10	0.014	0.040	0.021	0.22	38	68	106	NA
SB09	5/22/2013	0-5	0.058	<0.25	0.31	2.0	180	1,400	1,580	7.8
SB10	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	4.8	4.8	NA
SB11	5/22/2013	5-10	0.043	0.039	0.17	0.089	25	<4.0	25	NA
SB12	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB13	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB14	5/22/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB15	5/23/2013	5-10	0.035	0.028	0.033	0.15	100	30	130	2.2
SB16	5/23/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB17	5/23/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB18	5/23/2013	0-5	11	26	6.6	36	1,200	<4.0	1,200	NA
SB19	5/23/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB20	5/23/2013	5-10	<0.0025	<0.025	<0.0025	<0.0075	<0.50	<4.0	<4.50	NA
SB21	5/23/2013	5-10	0.014	<0.025	<0.0025	0.092	27	<4.0	27	NA
COGCC CONCENTRATION LEVELS			0.17	85	100	175			500	0.39

Notes:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

mg/kg - milligrams per kilogram

NA - not analyzed

NS - not sampled

SU - standard unit

ft - feet

NM - not measured



TABLE 2
VOLOSHIN MORTON 1-8
GROUNWATER FIELD PARAMETERS
PEAKVIEW OPERATING COMPANY, LLC

Sample ID	Date	TD ft btoc	DTW ft btoc	DTP ft btoc	Temperature °C	Conductivity μS/cm	TDS g/l	pH
MW01	5/24/2013	NM	NM	NM	NM	NM	NM	NM
MW02	5/24/2013	9.63	4.76	NA	10.89	1,544	1.350	8.05
MW03	5/24/2013	9.75	5.02	NA	11.00	627	0.533	7.50
MW04	5/24/2013	9.74	5.42	NA	9.92	1,758	1.592	7.42
MW05	5/24/2013	9.50	3.90	NA	10.72	1,379	1.229	7.93
MW08	5/24/2013	9.66	4.32	NA	NM	NM	NM	NM
MW09	5/24/2013	7.61	4.30	NA	NM	NM	NM	NM
MW13	5/24/2013	9.75	4.66	NA	12.67	1,649	1.384	7.89
MW16	5/24/2013	9.43	4.06	NA	12.30	3,371	2.868	8.92
MW17	5/24/2013	9.39	3.91	NA	10.49	1,711	1.538	7.90
MW18	5/24/2013	9.38	3.93	NA	10.92	1,652	1.445	8.06
MW19	5/24/2013	9.20	3.78	NA	10.35	1,507	1.355	7.72
MW20	5/24/2013	9.70	3.82	3.57*	9.56	1,161	1.066	7.94

Notes:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

g/l - grams per liter

μS/cm - microsiemens per centimeter

NA - not analyzed

NS - not sampled

SU - standard unit

ft - feet

btoc - below top of casing

NM - not measured

TD - total depth

DTW - depth to water

DTP - depth to product

* - DTP is estimated based on visual observation



TABLE 3
VOLOSHIN MORTON 1-8
GROUNDWATER ANALYTICAL RESULTS
PEAKVIEW OPERATING COMPANY, LLC

Sample ID	Date	Benzene µg/l	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l
MW01	5/24/2013	NS	NS	NS	NS
MW02	5/24/2013	460	<5.0	<0.50	2.7
MW03	5/24/2013	<0.50	<5.0	<0.50	<1.5
MW04	5/24/2013	<0.50	<5.0	<0.50	<1.5
MW05	5/24/2013	<0.50	<5.0	<0.50	<1.5
MW08	5/24/2013	<0.50	<5.0	1.1	4.1
MW09	5/24/2013	2,200	310	390	540
MW13	5/24/2013	8.9	<5.0	<0.50	1.8
MW16	5/24/2013	<0.50	<5.0	<0.50	<1.5
MW17	5/24/2013	<0.50	<5.0	<0.50	<1.5
MW18	5/24/2013	5,700	5,800	470	2,400
MW19	5/24/2013	0.72	<5.0	<0.50	<1.5
MW20	5/24/2013	<0.50	<5.0	<0.50	<1.5
COGCC CONCENTRATION LEVELS	X	5	560	700	1,400

Notes:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

µg/l - micrograms per liter

NA - not analyzed

NS - not sampled

SU - standard unit



ATTACHMENT 1
WELL COMPLETION DIAGRAMS





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LT Environmental, Inc.
820 Megan Ave Unit B
Rifle, Colorado 81650

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB01 / MW01** Project: **Voloshin Morton 1-8**

Date: **5.22.13** Project Number: **047313001**

Logged By: **Chris McKisson** Drilled By: **Alpine**

Elevation: Detector **PID** Drilling Method: **Direct Push** Sampling Method: **5' Continuous**

Gravel Pack: **Silica Sand** Seal: **Bentonite Crumbles** Grout: **Concrete**

Casing Type: **PVC** Diameter: **1"** Length: **5'** Hole Diameter: **2.25** Depth to Liquid:

Screen Type: **PVC** Slot: Diameter: **1"** Length: **10'** Total Depth: **15'** Depth to Water: **~5'**

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Overburden, sandy silty gravel brown, dry, no odor	Concrete
				1				
				2				
	slight	0.4	0820	3	0'-5'		gray/brown, silty clay, dense, high plasticity, no odor	Bentonite
				4				
				5		CH ML	Groundwater encountered ~5'	
				6				
	wet	0.3	0830	7	5'-10'			
				8				
				9				
				10				sand
				11				
				12		SW	light brown, gravelly sand, no odor	
				13	10'-15'			
	wet	0.2		14				
				15			TD=15'	
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB02/MW02	Project:	Voloshin Morton 1-8
Date:	5-22-13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Gravel Pack:	Silica Sand	Seal:	Bentonite Crumbles
Casing Type:	PVC	Hole Diameter:	2.25
Screen Type:	PVC	Total Depth:	10'
Slot:	0.010	Depth to Liquid:	
Diameter:	1"	Depth to Water:	~6'
Length:	5'		

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, sandy gravel, light brown dry, no odor	Concrete
	moist	0.3		1				
				2	0-5		Gray/brown, silty and fine sandy clay, dense, high plasticity, fat clay, moist to wet, no odor.	Bentonite
				3				
				4				
				5		CH ML		
				6			• GW encountered ~5'-6' bgs	
	wet	0.1		7	5-10			Sand
				8				
				9				
				10			TD=10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB03/MW03	Project:	Voloshin Morton 1-8								
Date:	5/22/13	Project Number:	047313001								
Logged By:	Chris McKisson	Drilled By:	Alpine								
Drilling Method:	Direct Push	Sampling Method:	5' Continuous								
Gravel Pack:	Silica Sand	Seal:	Bentonite Crumbles	Grout:	Concrete						
Casing Type:	PVC	Diameter:	1"	Length:	5'	Hole Diameter:	2.25	Depth to Liquid:			
Screen Type:	PVC	Slot:	0.010	Diameter:	1"	Length:	5'	Total Depth:	10'	Depth to Water:	~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, sandy gravel, light brown dry, no odor	Concrete
				1				
				2				
	Moist	0.9		3	0-5			Bentonite
				4				
				5		CH		
				6		ML		
				7			Gray/brown, silty and fine sandy clay, fat clay, dense, high plasticity, moist to wet, no odor	
				8			GW encountered ~5' bgs	
	Wet	0.2		9	5-10			Sand
				10			TD = 10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB04/MW04** Project: **Voloshin Morton 1-8**
Date: **5/22/13** Project Number: **047313001**
Logged By: **Chris McKisson** Drilled By: **Alpine**

Elevation: _____ Detector: **PID** Drilling Method: **Direct Push** Sampling Method: **5' Continuous**

Gravel Pack: **Silica Sand** Seal: **Bentonite Crumbles** Grout: **Concrete**

Casing Type: **PVC** Diameter: **1"** Length: **5'** Hole Diameter: **2.25** Depth to Liquid: _____

Screen Type: **PVC** Slot: **0.010** Diameter: **1"** Length: **5'** Total Depth: **10'** Depth to Water: **~5'**

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, sandy gravel, light brown dry. no odor	Concrete
				1				
				2				
	moist	0.0		3	1-5		Gray/brown, silty and fine sandy fat clay, dense, high plasticity, moist to wet, no odor	Bentonite
				4				
				5		CH		
				6		ML		
				7			GW encountered ~5' bgs.	
	wet	0.1		8	5-10			Sand
				9				
				10			TD = 10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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LT Environmental, Inc.
820 Megan Ave Unit B
Rifle, Colorado 81650

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB05/MW05** Project: **Voloshin Morton 1-8**
Date: **5/22/13** Project Number: **047313001**
Logged By: **Chris McKisson** Drilled By: **Alpine**

Elevation: _____ Detector: **PID** Drilling Method: **Direct Push** Sampling Method: **5' Continuous**
Gravel Pack: **Silica Sand** Seal: **Bentonite Chumblers** Grout: **Concrete**
Casing Type: **PVC** Diameter: **1"** Length: **5'** Hole Diameter: **2.25** Depth to Liquid: _____
Screen Type: **PVC** Slot: **0.010** Diameter: **1"** Length: **5'** Total Depth: **10'** Depth to Water: **~5'**

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, sandy gravel, light brown, dry, no odor	Concrete
				1				
				2				
	moist	0.8	1010	3	1-5			Bentonite
				4				
				5				
	wet	0.1	1020	6	5-10	CH ML	Gray/brown, silty and fine sandy fat clay, dense, high plasticity, moist to wet, no odor	
				7			GW encountered ~5' bgs	Sand
				8				
				9				
				10			TD = 10' bgs	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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Rifle, Colorado 81650

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB06	Project:	Voloshin Morton 1-8
Date:	5/22/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Seal:		Grout:	
Casing Type:		Diameter:	Length:
Screen Type:		Diameter:	Length:
		Hole Diameter:	Depth to Liquid:
		2.25	
		Total Depth:	Depth to Water:
		10'	~4.5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, sandy gravel, light brown, slightly moist, no odor	
				1				
				2		1-5		
				3				
				4				
				5		CH ml	Gray/brown, silty and fine sandy fat clay, dense, high plasticity, moist to wet, no odor	
				6				
				7		5-10	GW encountered ~4.5' bgs	
				8				
				9				
				10			TD = 10'	
				11			Backfilled with bentonite crumbles	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB07	Project:	Voloshin Morton 1-8
Date:	5/22/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Seal:		Grout:	
Casing Type:		Hole Diameter:	2.25
Screen Type:		Total Depth:	10'
		Depth to Liquid:	
		Depth to Water:	~5'

Elevation:	Detector	PID
Gravel Pack:		
Casing Type:		
Screen Type:	Slot:	

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
		76.8	1115	0		SM	Fill, sandy gravel, light brown, dry, no odor	
				1				
				2	1-5			
				3				
				4		CL	Gray, sandy clay with fine sands, odor, moist to wet.	
				5		ML		
		38.1		6			GW encountered ~5' bgs	
				7	5-10			
				8				
				9				
				10			TD=10' bgs	
				11			Backfilled with bentonite crumbles	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

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N

P15

SB08
MW08

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB08/MW08	Project:	Voloshin Morton 1-8
Date:	5/22/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Gravel Pack:	Silica Sand	Seal:	Bentonite Crumbles
Casing Type:	PVC	Hole Diameter:	2.25
Screen Type:	PVC	Total Depth:	10'
Slot:	0.010	Depth to Liquid:	
Diameter:	1"	Length:	5'
Diameter:	1"	Length:	5'
Depth to Water:			~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0			Gray/brown, gravelly sand, Fill, slight moisture/dry, no odor	Concrete
				1		SM		
				2				
	moist	13.8		3	2-5			Bentonite
				4			Gray, silty clay, plasticity (med)	
				5		CL	moist to wet, odor	
				6		ML		
	wet	38.7		7	5-10			Sand
				8				
				9				
				10				
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

Free Tank



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB09 / MW09** Project: **Voloshin Morton 1-8**
 Date: **5/22/13** Project Number: **047313001**
 Logged By: **Chris McKisson** Drilled By: **Alpine**
 Drilling Method: **Direct Push** Sampling Method: **5' Continuous**

Elevation: **P/S** Detector: **PID** Seal: **Bentonite Crumbles** Grout: **Cement**
 Gravel Pack: **Silica Sand** Diameter: **1"** Length: **3'** Hole Diameter: **2.25** Depth to Liquid:
 Casing Type: **PVC** Screen Type: **PVC** Slot: **0.010** Diameter: **1"** Length: **5'** Total Depth: **10' 8"** Depth to Water: **~3.5'**

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0			Fill, sandy gravel, light brown/gray, slightly moist, odor	Concrete
				1		SM		Bentonite
				2				
				3				
				4	2-5		Gray, sandy clay, med. to high plasticity, fat clay, odor, wet	
				5				
				6		CH ML		
				7			GW encountered ~ 3.5' bgs	
				8	5-10			Sand
				9				
				10				
				11			Probed to ~10' bgs. Backfilled ~ 2' of borehole with sand and set well @ ~8' bgs.	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

Wet 860

Wet 138



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB10	Project:	Voloshin Morton 1-8								
Date:	5/22/13	Project Number:	047313001								
Logged By:	Chris McKisson	Drilled By:	Alpine								
Drilling Method:	Direct Push	Sampling Method:	5' Continuous								
Seal:		Grout:									
Casing Type:		Diameter:		Length:		Hole Diameter:	2.25	Depth to Liquid:			
Screen Type:		Slot:		Diameter:		Length:		Total Depth:	10'	Depth to Water:	~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0			Fill, sandy gravel, light brown dry, no odor	
				1		SM		
				2				
	moist	11.8		3	2-5		Gray/brown, silty ^{fat} clay with fine sands, dense, high plasticity, moist to wet, odor,	
				4				
				5				
				6		CH ML		
				7			GW encountered ~5' bgs	
	wet	13.2		8	5-10			
				9				
				10			TD=10'	
				11			Backfilled with bentonite crumbles to grade	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB11	Project:	Voloshin Morton 1-8
Date:	5/22/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Seal:		Grout:	
Casing Type:		Diameter:	Length:
Screen Type:		Diameter:	Length:
		Hole Diameter:	Depth to Liquid:
		Total Depth:	Depth to Water:

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, gravelly sand, light brown, dry, no odor	
				1				
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
				10				
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB12	Project: Voloshin Morton 1-8	
Date: 5/22/13	Project Number: 047313001	
Logged By: Chris McKisson	Drilled By: Alpine	
Drilling Method: Direct Push	Sampling Method: 5' Continuous	
Seal: _____	Grout: _____	
Casing Type: _____	Hole Diameter: 2.25	Depth to Liquid: _____
Screen Type: _____	Diameter: _____	Depth to Water: ~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Gray/brown, fill, gravelly sand dry, no odor	
				1				
				2				
	slight	0.0		3	0-5	CL	brown/black, silty clay, "organic" odor, moist, med plasticity	
				4				
				5				
				6				
				7		CH	brown, silty clay with fine sands, fat clay, dense, wet, no odor	
	wet	0.2		8	5-10	ML		
				9			GW ~ 5' bgs	
				10				
				11			Backfilled with bentonite	
				12			Crumbles to grade.	
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB13	Project:	Voloshin Morton 1-8
Date:	5/22/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Elevation:		Grout:	
Gravel Pack:		Hole Diameter:	2.25
Casing Type:		Depth to Liquid:	
Screen Type:		Total Depth:	10'
Slot:		Depth to Water:	~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		SM	Fill, brown, gravelly sand, dry no odor	
				1				
				2				
	moist	0.7	1420	3	0-5		brown, silty clay, fat clay, dense, moist to wet, no odor	
				4				
				5		CH ML		
				6				
	Wet	0.7	1425	7	5-6		GW ~ 5' bgs	
				8				
				9				
				10			TD = 10'	
				11			Boring backfilled with bentonite crumbles to grade.	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB14	Project:	Voloshin Morton 1-8
Date:	5/22/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Seal:		Grout:	
Casing Type:		Diameter:	Length:
Screen Type:		Diameter:	Length:
		Hole Diameter:	2.25
		Total Depth:	10'
		Depth to Liquid:	
		Depth to Water:	~4'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	Sandy organic soil, brown, moist no odor	
				1				
				2				
	moist	1.2		3	G-5		Brown, silty sandy fat clay, high plasticity, dense, moist to wet, no odor	
				4				
				5		CH ML		
				6				
				7	5-16		GW ~5' bgs	
	wet	0.2		8				
				9				
				10			TD=10'	
				11			Backfilled borehole with bentonite crumble to grade	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB15	Project: Voloshin Morton 1-8
Date: 5/23/13	Project Number: 047313001
Logged By: Chris McKisson	Drilled By: Alpine
Drilling Method: Direct Push	Sampling Method: 5' Continuous
Seal: _____	Grout: _____
Casing Type: _____	Diameter: _____ Length: _____
Screen Type: _____ Slot: _____	Diameter: _____ Length: _____
	Hole Diameter: 2.25
	Total Depth: 10'
	Depth to Liquid: _____
	Depth to Water: ~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		0#	Sandy organic soil, brown, moist no odor	
				1				
				2		0-5		
	moist	0.0	0835	3		CH/ML	Brown, silty sandy fat clay, dense, high plasticity, moist no odor	
				4				
				5				
				6				
				7		5-16		
	wet	940	0840	8		CH/ML	Black/brown, silty sandy fat clay, dense, high plasticity, wet odor	
				9				
				10			TD = 10'	
				11			Backfilled boring with bentonite crumbles to grade	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

Frac Tank

SB09
SB15
SB16
MW16



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB16 / MW16	Project: Voloshin Morton 1-8
Date: 5/23/13	Project Number: 047313001
Logged By: Chris McKisson	Drilled By: Alpine

Elevation:	Detector: PID	Drilling Method: Direct Push	Sampling Method: 5' Continuous
Gravel Pack: Silica Sand	Seal: Bentonite Crumbles	Grout: Concrete	
Casing Type: PRC	Diameter: 1" Length: 5'	Hole Diameter: 2.25	Depth to Liquid: ---
Screen Type: PRC	Slot: 0.010 Diameter: 1" Length: 5'	Total Depth: 10'	Depth to Water: ~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	Sandy organic soil, brown, moist no odor	
				1				
				2				
	Moist	0.5	0850	3	0-5		Brown/gray, silty sandy fat clay, moist to wet, dense, high plasticity, no odor	
				4		CH/ML		
				5				
				6				
	wet	0.4	0900	7	5-10		GW ~ 5' bgs	
				8				
				9				
				10			TD = 10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

Concrete

Bentonite

Sand



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB17/MW17 Project: Voloshin Morton 1-8
Date: 5/23/13 Project Number: 047313001
Logged By: Chris McKisson Drilled By: Alpine

Elevation: _____ Detector: PID Drilling Method: Direct Push Sampling Method: 5' Continuous

Gravel Pack: Silica Sand Seal: Bentonite Crumbles Grout: Concrete

Casing Type: PVC Diameter: 1" Length: 5' Hole Diameter: 2.25 Depth to Liquid: _____

Screen Type: PVC Slot: 0.010 Diameter: 1" Length: 5' Total Depth: 10' Depth to Water: ~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	Sandy organic soil, brown, moist no odor	Concrete
				1				
				2				Bentonite
				3				
				4				
				5		CH ML	Brown, silty sandy fat clay, moist to wet, dense, high plasticity, no odor	
				6				
				7				
				8			GW ~5' bgs	Sand
				9				
				10			TD = 10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

MW13

Fract Tank

SB18
• MW18

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB18/MW18 Project: Voloshin Morton 1-8
Date: 5/23/13 Project Number: 047313001
Logged By: Chris McKisson Drilled By: Alpine

Elevation: Detector: PID Drilling Method: Direct Push Sampling Method: 5' Continuous

Gravel Pack: Silica Sand Seal: Bentonite Crumbles Grout: Concrete

Casing Type: PVC Diameter: 1" Length: 5' Hole Diameter: 2.25' Depth to Liquid: ~5'

Screen Type: PVC Slot: 0.010 Diameter: 1" Length: 5' Total Depth: 10' Depth to Water: ~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	Sandy organic soil, brown, moist no odor	Concrete
				1				
				2				
	moist	1,038	0935	3	0-5		Brown, silty sandy fat clay, dense, high plasticity, moist to wet, odor	Bentonite
				4		CH ML		
				5				
				6				
				7				
	wet	109	0940	8	5-10		GW ~ 5' bgs	Sand
				9				
				10			TD=10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

MW13

Frac Tank

SB19
MW19

↑ N

MW18



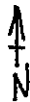
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB19/MW19	Project:	Voloshin Morton 1-8
Date:	5/23/13	Project Number:	047313001
Logged By:	Chris McKisson	Drilled By:	Alpine
Drilling Method:	Direct Push	Sampling Method:	5' Continuous
Gravel Pack:	Silica Sand	Seal:	Bentonite Crumbles
Casing Type:	PVC	Hole Diameter:	2.25
Screen Type:	PVC	Slot:	0.010
		Diameter:	1"
		Length:	5'
		Total Depth:	10'
		Depth to Liquid:	
		Depth to Water:	~5'

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	Sandy organic soil, brown, moist no odor	
				1				
				2				
	moist	0.8	1006	3	05			
				4				
				5		CH ML	Brown, silty sandy fat clay, dense, high plasticity, moist to wet, no odor.	
				6				
	Wet	0.4	1005	7	5-10			
				8				
				9				
				10			GW ~5' bgs.	
				11			TD=10'	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

SB20
MW20



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MW13

MW19

MW18

Free Tank

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB20/MW20		Project:	Voloshin Morton 1-8	
Date:	5/23/13		Project Number:	047313001	
Logged By:	Chris McKisson		Drilled By:	Alpine	
Drilling Method:	Direct Push		Sampling Method:	5' Continuous	
Gravel Pack:	Silica Sand		Seal:	Bentonite Crumbles	
Casing Type:	PVC		Hole Diameter:	2.25	
Screen Type:	PVC		Total Depth:	10'	
Detector:	PID		Depth to Liquid:		
Slot:	0.010		Depth to Water:	~5'	

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	sandy organic soil, brown, moist no odor	Concrete
				1				
				2				
	moist	0.1	1020	3	0-5			Bentonite
				4				
				5		CH ML	Brown, silty sandy fat clay, dense, high plasticity, moist to wet, no odor	
				6				
	wet	0.0	1030	7				Sand
				8	5-18		GW ~ 5' bgs	
				9				
				10			TD=10'	
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: **SB21** Project: **Voloshin Morton 1-8**
Date: **5/23/13** Project Number: **047313001**
Logged By: **Chris McKisson** Drilled By: **Alpine**

Elevation: _____ Detector: **PID** Drilling Method: **Direct Push** Sampling Method: **5' Continuous**
Gravel Pack: _____ Seal: _____ Grout: _____

Casing Type: _____ Diameter: _____ Length: _____ Hole Diameter: **2.25** Depth to Liquid: _____

Screen Type: _____ Slot: _____ Diameter: _____ Length: _____ Total Depth: **10'** Depth to Water: **~5'**

Penetration Resistance	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
				0		OH	Sandy organic soil, brown, moist no odor	
				1				
				2				
	moist	1.8	1045	3	0-5			
				4		CH		
				5		ML	Brown, silty sandy fat clay, dense, high plasticity, moist to wet, no odor	
				6				
				7				
	wet	27.1	1050	8	5-10		GW ~ 5' bgs	
				9				
				10				
				11			Backfilled borehole with bentonite Crumbles.	
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				

ATTACHMENT 2
LABORATORY ANALYTICAL REPORT





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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

Report Summary

Thursday June 06, 2013

Report Number: L637757


Samples Received: 05/24/13

Client Project: 047813001

Description: Voloshin Mortin 1(-8)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB01 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 08:30

ESC Sample # : L637757-01

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	64.9		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB02 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 09:00

ESC Sample # : L637757-02

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	71.2		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB03 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 09:35

ESC Sample # : L637757-03

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	73.3		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB04 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 10:00

ESC Sample # : L637757-04

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	73.6		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB05 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 10:20

ESC Sample # : L637757-05

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	67.1		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB06 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 11:00

ESC Sample # : L637757-06

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	77.0		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB08 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 12:08

ESC Sample # : L637757-07

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.014	0.0025	mg/kg	8021/8015	05/29/13	5
Toluene	0.040	0.025	mg/kg	8021/8015	05/29/13	5
Ethylbenzene	0.021	0.0025	mg/kg	8021/8015	05/29/13	5
Total Xylene	0.22	0.0075	mg/kg	8021/8015	05/29/13	5
TPH (GC/FID) Low Fraction	38.	0.50	mg/kg	GRO	05/29/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	87.8		% Rec.	8021/8015	05/29/13	5
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	05/29/13	5
TPH (GC/FID) High Fraction	68.	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	77.5		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB09 0-5FT
Collected By : Chris McKisson
Collection Date : 05/22/13 12:30

ESC Sample # : L637757-08

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	20.	mg/kg	3060A/7196A	05/31/13	10
Chromium, Trivalent	14.	0.50	mg/kg	Calc.	06/02/13	1
ORP	240		mV	2580 B-2011	06/03/13	1
pH	8.2		su	9045D	05/30/13	1
Sodium Adsorption Ratio	2.8			Calc.	05/28/13	1
Specific Conductance	800		umhos/cm	9050AMod	06/03/13	1
Mercury	0.021	0.020	mg/kg	7471	05/25/13	1
Arsenic	7.8	1.0	mg/kg	6010B	06/02/13	1
Barium	110	0.25	mg/kg	6010B	06/02/13	1
Cadmium	BDL	0.25	mg/kg	6010B	06/02/13	1
Chromium	14.	0.50	mg/kg	6010B	06/02/13	1
Copper	18.	1.0	mg/kg	6010B	06/02/13	1
Lead	12.	0.25	mg/kg	6010B	06/02/13	1
Nickel	12.	1.0	mg/kg	6010B	06/02/13	1
Selenium	2.2	1.0	mg/kg	6010B	06/02/13	1
Silver	BDL	0.50	mg/kg	6010B	06/02/13	1
Zinc	54.	1.5	mg/kg	6010B	06/02/13	1
Benzene	0.058	0.025	mg/kg	8021/8015	05/31/13	50
Toluene	BDL	0.25	mg/kg	8021/8015	05/31/13	50
Ethylbenzene	0.31	0.025	mg/kg	8021/8015	05/31/13	50
Total Xylene	2.0	0.075	mg/kg	8021/8015	05/31/13	50
TPH (GC/FID) Low Fraction	180	5.0	mg/kg	GRO	05/31/13	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	8021/8015	05/31/13	50
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	05/31/13	50
TPH (GC/FID) High Fraction	1400	80.	mg/kg	3546/DRO	06/03/13	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	06/03/13	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.044	0.0060	mg/kg	8270C-SIM	05/31/13	1
Acenaphthene	0.059	0.0060	mg/kg	8270C-SIM	05/31/13	1
Acenaphthylene	0.018	0.0060	mg/kg	8270C-SIM	05/31/13	1
Benzo(a)anthracene	0.013	0.0060	mg/kg	8270C-SIM	05/31/13	1
Benzo(a)pyrene	0.012	0.0060	mg/kg	8270C-SIM	05/31/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L637757-08 (PH) - 8.2@22.4c



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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)

Sample ID : SB09 0-5FT

Collected By : Chris McKisson
Collection Date : 05/22/13 12:30

ESC Sample # : L637757-08

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/31/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/31/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/31/13	1
Chrysene	0.018	0.0060	mg/kg	8270C-SIM	05/31/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/31/13	1
Fluoranthene	0.0072	0.0060	mg/kg	8270C-SIM	05/31/13	1
Fluorene	0.22	0.0060	mg/kg	8270C-SIM	05/31/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/31/13	1
Naphthalene	0.78	0.020	mg/kg	8270C-SIM	05/31/13	1
Phenanthrene	0.28	0.0060	mg/kg	8270C-SIM	05/31/13	1
Pyrene	0.024	0.0060	mg/kg	8270C-SIM	05/31/13	1
1-Methylnaphthalene	1.6	0.020	mg/kg	8270C-SIM	05/31/13	1
2-Methylnaphthalene	2.0	0.020	mg/kg	8270C-SIM	05/31/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	05/31/13	1
Surrogate Recovery						
Nitrobenzene-d5	42.2		% Rec.	8270C-SIM	05/31/13	1
2-Fluorobiphenyl	88.0		% Rec.	8270C-SIM	05/31/13	1
p-Terphenyl-d14	100.		% Rec.	8270C-SIM	05/31/13	1

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Det. Limit - Practical Quantitation Limit(PQL)

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L637757-08 (PH) - 8.2@22.4c



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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB10 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 13:05

ESC Sample # : L637757-09

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	4.8	4.0	mg/kg	3546/DRO	06/03/13	1
Surrogate recovery(%)						
o-Terphenyl	75.1		% Rec.	3546/DRO	06/03/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB11 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 13:35

ESC Sample # : L637757-10

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.043	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	0.039	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	0.17	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	0.089	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	25.	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.8		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	78.8		% Rec.	3546/DRO	05/31/13	1

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB12 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 13:55

ESC Sample # : L637757-11

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	86.1		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB13 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 14:25

ESC Sample # : L637757-12

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	82.0		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/06/13 08:15 Printed: 06/06/13 08:17



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB14 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 14:55

ESC Sample # : L637757-13

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/26/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/26/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/26/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/26/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/26/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	83.6		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L637757-07	WG663344	SAMP	TPH (GC/FID) Low Fraction	R2688300	J6J3
L637757-08	WG663707	SAMP	Nitrobenzene-d5	R2690222	J2
	WG663760	SAMP	Chromium, Hexavalent	R2690940	O
	WG663554	SAMP	o-Terphenyl	R2691966	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
06/06/13 at 08:17:18

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L637757-01 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-02 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-03 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-04 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-05 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-06 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-07 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-08 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-09 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-10 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-11 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-12 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15
Sample: L637757-13 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:15



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Quality Assurance Report
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Est. 1970

June 06, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG663187	05/25/13 18:39
Benzene	< .0005	mg/kg			WG663268	05/25/13 23:36
Ethylbenzene	< .0005	mg/kg			WG663268	05/25/13 23:36
Toluene	< .005	mg/kg			WG663268	05/25/13 23:36
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG663268	05/25/13 23:36
Total Xylene	< .0015	mg/kg			WG663268	05/25/13 23:36
a,a,a-Trifluorotoluene(FID)		% Rec.	101.5	59-128	WG663268	05/25/13 23:36
a,a,a-Trifluorotoluene(PID)		% Rec.	108.5	54-144	WG663268	05/25/13 23:36
Benzene	< .0005	mg/kg			WG663344	05/29/13 22:49
Ethylbenzene	< .0005	mg/kg			WG663344	05/29/13 22:49
Toluene	< .005	mg/kg			WG663344	05/29/13 22:49
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG663344	05/29/13 22:49
Total Xylene	< .0015	mg/kg			WG663344	05/29/13 22:49
a,a,a-Trifluorotoluene(FID)		% Rec.	92.77	59-128	WG663344	05/29/13 22:49
a,a,a-Trifluorotoluene(PID)		% Rec.	98.69	54-144	WG663344	05/29/13 22:49
Chromium,Hexavalent	< 2	mg/kg			WG663760	05/31/13 15:10
Benzene	< .0005	mg/kg			WG663842	05/31/13 15:58
Ethylbenzene	< .0005	mg/kg			WG663842	05/31/13 15:58
Toluene	< .005	mg/kg			WG663842	05/31/13 15:58
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG663842	05/31/13 15:58
Total Xylene	< .0015	mg/kg			WG663842	05/31/13 15:58
a,a,a-Trifluorotoluene(FID)		% Rec.	94.43	59-128	WG663842	05/31/13 15:58
a,a,a-Trifluorotoluene(PID)		% Rec.	100.4	54-144	WG663842	05/31/13 15:58
TPH (GC/FID) High Fraction	< 4	mg/kg			WG663554	05/31/13 19:46
o-Terphenyl		% Rec.	72.30	50-150	WG663554	05/31/13 19:46
Specific Conductance	0.920	umhos/cm			WG664318	06/03/13 15:10
Arsenic	< 1	mg/kg			WG663853	06/02/13 14:32
Barium	< .25	mg/kg			WG663853	06/02/13 14:32
Cadmium	< .25	mg/kg			WG663853	06/02/13 14:32
Chromium	< .5	mg/kg			WG663853	06/02/13 14:32
Copper	< 1	mg/kg			WG663853	06/02/13 14:32
Lead	< .25	mg/kg			WG663853	06/02/13 14:32
Nickel	< 1	mg/kg			WG663853	06/02/13 14:32
Selenium	< 1	mg/kg			WG663853	06/02/13 14:32
Silver	< .5	mg/kg			WG663853	06/02/13 14:32
Zinc	< 1.5	mg/kg			WG663853	06/02/13 14:32

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Mercury	mg/kg	0	0.00231	11.2	20	L637506-05	WG663187
pH	su	7.30	7.20	0.830	1	L637362-01	WG663761
pH	su	7.60	7.60	0.394	1	L637964-24	WG663761

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

June 06, 2013

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Chromium,Hexavalent	mg/kg	0	0.840	NA	20	20	L638038-12	WG663760
Chromium,Hexavalent	mg/kg	0	0	0	20	20	L638038-13	WG663760
ORP	mV	240.	240.	0.416	20	20	L637757-08	WG664317
ORP	mV	270.	270.	1.49	20	20	L638038-08	WG664317
Specific Conductance	umhos/cm	800.	800.	0.623	20	20	L637757-08	WG664318
Specific Conductance	umhos/cm	150.	150.	3.09	20	20	L638554-02	WG664318
Arsenic	mg/kg	7.80	7.80	0	20	20	L637804-07	WG663853
Barium	mg/kg	32.0	31.0	3.17	20	20	L637804-07	WG663853
Cadmium	mg/kg	0	0	0	20	20	L637804-07	WG663853
Chromium	mg/kg	8.30	8.40	1.20	20	20	L637804-07	WG663853
Copper	mg/kg	20.0	20.0	0	20	20	L637804-07	WG663853
Lead	mg/kg	23.0	36.0	44.1*	20	20	L637804-07	WG663853
Nickel	mg/kg	9.90	9.90	0	20	20	L637804-07	WG663853
Selenium	mg/kg	1.00	0	NA	20	20	L637804-07	WG663853
Silver	mg/kg	0	0	0	20	20	L637804-07	WG663853
Zinc	mg/kg	55.0	51.0	7.55	20	20	L637804-07	WG663853

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Mercury	mg/kg	12.4	15.6	126.	71.6-128	WG663187
Benzene	mg/kg	.05	0.0512	102.	76-113	WG663268
Ethylbenzene	mg/kg	.05	0.0535	107.	78-115	WG663268
Toluene	mg/kg	.05	0.0525	105.	76-114	WG663268
Total Xylene	mg/kg	.15	0.164	109.	81-118	WG663268
a,a,a-Trifluorotoluene(PID)				107.6	54-144	WG663268
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.34	97.1	67-135	WG663268
a,a,a-Trifluorotoluene(FID)				104.4	59-128	WG663268
Benzene	mg/kg	.05	0.0432	86.5	76-113	WG663344
Ethylbenzene	mg/kg	.05	0.0463	92.6	78-115	WG663344
Toluene	mg/kg	.05	0.0453	90.7	76-114	WG663344
Total Xylene	mg/kg	.15	0.144	96.0	81-118	WG663344
a,a,a-Trifluorotoluene(PID)				98.14	54-144	WG663344
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.43	98.7	67-135	WG663344
a,a,a-Trifluorotoluene(FID)				96.40	59-128	WG663344
pH	su	5.79	5.80	100.	98.3-101.7	WG663761
Chromium,Hexavalent	mg/kg	146	123.	84.2	80-120	WG663760
Benzene	mg/kg	.05	0.0463	92.7	76-113	WG663842
Ethylbenzene	mg/kg	.05	0.0486	97.3	78-115	WG663842
Toluene	mg/kg	.05	0.0481	96.3	76-114	WG663842
Total Xylene	mg/kg	.15	0.150	100.	81-118	WG663842
a,a,a-Trifluorotoluene(PID)				100.0	54-144	WG663842
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.46	99.3	67-135	WG663842

* Performance of this Analyte is outside of established criteria.

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June 06, 2013

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
a,a,a-Trifluorotoluene(FID)				100.1	59-128	
TPH (GC/FID) High Fraction	mg/kg	60	41.6	69.3	50-150	WG663554
o-Terphenyl				69.90	50-150	WG663554
ORP	mV	228	230.	101.	95.6-104.	WG664317
Specific Conductance	umhos/cm	878	900.	103.	85-115	WG664318
Arsenic	mg/kg	237	246.	104.	83.1-117	WG663853
Barium	mg/kg	252	255.	101.	84.1-116	WG663853
Cadmium	mg/kg	191	191.	100.	83.2-117	WG663853
Chromium	mg/kg	128	132.	103.	81.3-118	WG663853
Copper	mg/kg	123	129.	105.	83.7-116	WG663853
Lead	mg/kg	103	105.	102.	83.1-117	WG663853
Nickel	mg/kg	118	114.	96.6	82-118	WG663853
Selenium	mg/kg	110	122.	111.	78.7-122	WG663853
Silver	mg/kg	47.3	43.6	92.2	66.2-134	WG663853
Zinc	mg/kg	183	182.	99.5	82-118	WG663853

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0520	0.0512	104.	76-113	1.57	20	WG663268
Ethylbenzene	mg/kg	0.0546	0.0535	109.	78-115	1.94	20	WG663268
Toluene	mg/kg	0.0533	0.0525	106.	76-114	1.52	20	WG663268
Total Xylene	mg/kg	0.167	0.164	112.	81-118	1.96	20	WG663268
a,a,a-Trifluorotoluene(PID)				107.5	54-144			WG663268
TPH (GC/FID) Low Fraction	mg/kg	5.44	5.34	99.0	67-135	1.76	20	WG663268
a,a,a-Trifluorotoluene(FID)				104.2	59-128			WG663268
Benzene	mg/kg	0.0440	0.0432	88.0	76-113	1.82	20	WG663344
Ethylbenzene	mg/kg	0.0466	0.0463	93.0	78-115	0.640	20	WG663344
Toluene	mg/kg	0.0453	0.0453	91.0	76-114	0.0400	20	WG663344
Total Xylene	mg/kg	0.144	0.144	96.0	81-118	0.100	20	WG663344
a,a,a-Trifluorotoluene(PID)				97.85	54-144			WG663344
TPH (GC/FID) Low Fraction	mg/kg	5.29	5.43	96.0	67-135	2.59	20	WG663344
a,a,a-Trifluorotoluene(FID)				96.17	59-128			WG663344
pH	su	5.80	5.80	100.	98.3-101.7	0	20	WG663761
Chromium, Hexavalent	mg/kg	124.	123.	85.0	80-120	0.810	20	WG663760
Benzene	mg/kg	0.0487	0.0463	97.0	76-113	5.00	20	WG663842
Ethylbenzene	mg/kg	0.0506	0.0486	101.	78-115	4.03	20	WG663842
Toluene	mg/kg	0.0499	0.0481	100.	76-114	3.55	20	WG663842
Total Xylene	mg/kg	0.156	0.150	104.	81-118	3.91	20	WG663842
a,a,a-Trifluorotoluene(PID)				100.2	54-144			WG663842
TPH (GC/FID) Low Fraction	mg/kg	5.25	5.46	95.0	67-135	4.04	20	WG663842
a,a,a-Trifluorotoluene(FID)				97.49	59-128			WG663842
TPH (GC/FID) High Fraction	mg/kg	41.1	41.6	68.0	50-150	1.31	20	WG663554

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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
o-Terphenyl				66.90	50-150			
ORP	mV	220.	230.	96.0	95.6-104.	4.44	20	WG664317
Specific Conductance	umhos/	880.	900.	100.	85-115	2.25	20	WG664318
Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Mercury	mg/kg	0.277	0.00231	.25	110.	80-120	L637506-05	WG663187
Benzene	mg/kg	0.242	0.000373	.05	96.6	32-137	L637757-01	WG663268
Ethylbenzene	mg/kg	0.250	0.000414	.05	99.8	10-150	L637757-01	WG663268
Toluene	mg/kg	0.250	0.00136	.05	99.4	20-142	L637757-01	WG663268
Total Xylene	mg/kg	0.773	0.00239	.15	103.	16-141	L637757-01	WG663268
a,a,a-Trifluorotoluene(PID)					106.8	54-144		WG663268
TPH (GC/FID) Low Fraction	mg/kg	22.4	0	5.5	81.3	55-109	L637757-01	WG663268
a,a,a-Trifluorotoluene(FID)					101.6	59-128		WG663268
Benzene	mg/kg	0.210	0.0135	.05	78.6	32-137	L637757-07	WG663344
Ethylbenzene	mg/kg	0.219	0.0214	.05	79.1	10-150	L637757-07	WG663344
Toluene	mg/kg	0.223	0.0400	.05	73.2	20-142	L637757-07	WG663344
Total Xylene	mg/kg	0.726	0.225	.15	66.8	16-141	L637757-07	WG663344
a,a,a-Trifluorotoluene(PID)					95.09	54-144		WG663344
TPH (GC/FID) Low Fraction	mg/kg	33.4	38.2	5.5	0*	55-109	L637757-07	WG663344
a,a,a-Trifluorotoluene(FID)					92.26	59-128		WG663344
Chromium,Hexavalent	mg/kg	19.6	0	20	98.0	75-125	L638038-01	WG663760
Benzene	mg/kg	2.30	0.0109	.05	92.3	32-137	L638208-08	WG663842
Ethylbenzene	mg/kg	2.56	0.644	.05	77.3	10-150	L638208-08	WG663842
Toluene	mg/kg	2.42	0.0148	.05	97.0	20-142	L638208-08	WG663842
Total Xylene	mg/kg	8.05	0.514	.15	102.	16-141	L638208-08	WG663842
a,a,a-Trifluorotoluene(PID)					98.50	54-144		WG663842
TPH (GC/FID) Low Fraction	mg/kg	329.	92.8	5.5	86.9	55-109	L638208-08	WG663842
a,a,a-Trifluorotoluene(FID)					97.49	59-128		WG663842
TPH (GC/FID) High Fraction	mg/kg	43.8	1.36	60	70.7	50-150	L637757-03	WG663554
o-Terphenyl					68.00	50-150		WG663554
Arsenic	mg/kg	54.4	7.80	50	93.2	75-125	L637804-07	WG663853
Barium	mg/kg	81.2	31.0	50	100.	75-125	L637804-07	WG663853
Cadmium	mg/kg	44.4	0	50	88.8	75-125	L637804-07	WG663853
Chromium	mg/kg	54.2	8.40	50	91.6	75-125	L637804-07	WG663853
Copper	mg/kg	69.3	20.0	50	98.6	75-125	L637804-07	WG663853
Lead	mg/kg	78.2	36.0	50	84.4	75-125	L637804-07	WG663853
Nickel	mg/kg	53.0	9.90	50	86.2	75-125	L637804-07	WG663853
Selenium	mg/kg	46.8	0	50	93.6	75-125	L637804-07	WG663853
Silver	mg/kg	44.4	0	50	88.8	75-125	L637804-07	WG663853
Zinc	mg/kg	104.	51.0	50	106.	75-125	L637804-07	WG663853

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Rob Fishburn
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Quality Assurance Report
Level II

L637757

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Tax I.D. 62-0814289

Est. 1970

June 06, 2013

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.246	0.277	97.4	80-120	11.9	20	L637506-05	WG663187
Benzene	mg/kg	0.221	0.242	88.1	32-137	9.23	39	L637757-01	WG663268
Ethylbenzene	mg/kg	0.222	0.250	88.8	10-150	11.6	44	L637757-01	WG663268
Toluene	mg/kg	0.223	0.250	88.8	20-142	11.2	42	L637757-01	WG663268
Total Xylene	mg/kg	0.683	0.773	90.7	16-141	12.3	46	L637757-01	WG663268
a,a,a-Trifluorotoluene(PID)				106.7	54-144				WG663268
TPH (GC/FID) Low Fraction	mg/kg	24.4	22.4	88.6	55-109	8.52	20	L637757-01	WG663268
a,a,a-Trifluorotoluene(FID)				102.1	59-128				WG663268
Benzene	mg/kg	0.209	0.210	78.4	32-137	0.290	39	L637757-07	WG663344
Ethylbenzene	mg/kg	0.231	0.219	83.7	10-150	5.07	44	L637757-07	WG663344
Toluene	mg/kg	0.226	0.223	74.5	20-142	1.44	42	L637757-07	WG663344
Total Xylene	mg/kg	0.838	0.726	81.6	16-141	14.2	46	L637757-07	WG663344
a,a,a-Trifluorotoluene(PID)				96.95	54-144				WG663344
TPH (GC/FID) Low Fraction	mg/kg	44.2	33.4	21.8*	55-109	27.9*	20	L637757-07	WG663344
a,a,a-Trifluorotoluene(FID)				93.25	59-128				WG663344
Chromium,Hexavalent	mg/kg	20.4	19.6	102.	75-125	4.00	20	L638038-01	WG663760
Benzene	mg/kg	2.42	2.30	97.3	32-137	5.26	39	L638208-08	WG663842
Ethylbenzene	mg/kg	2.70	2.56	82.9	10-150	5.30	44	L638208-08	WG663842
Toluene	mg/kg	2.53	2.42	102.	20-142	4.60	42	L638208-08	WG663842
Total Xylene	mg/kg	8.48	8.05	107.	16-141	5.22	46	L638208-08	WG663842
a,a,a-Trifluorotoluene(PID)				99.62	54-144				WG663842
TPH (GC/FID) Low Fraction	mg/kg	334.	329.	88.6	55-109	1.36	20	L638208-08	WG663842
a,a,a-Trifluorotoluene(FID)				97.55	59-128				WG663842
TPH (GC/FID) High Fraction	mg/kg	43.4	43.8	70.0	50-150	0.850	20	L637757-03	WG663554
o-Terphenyl				66.60	50-150				WG663554
Arsenic	mg/kg	54.8	54.4	94.0	75-125	0.733	20	L637804-07	WG663853
Barium	mg/kg	77.0	81.2	92.0	75-125	5.31	20	L637804-07	WG663853
Cadmium	mg/kg	44.5	44.4	89.0	75-125	0.225	20	L637804-07	WG663853
Chromium	mg/kg	54.8	54.2	92.8	75-125	1.10	20	L637804-07	WG663853
Copper	mg/kg	70.2	69.3	100.	75-125	1.29	20	L637804-07	WG663853
Lead	mg/kg	65.7	78.2	59.4*	75-125	17.4	20	L637804-07	WG663853
Nickel	mg/kg	53.1	53.0	86.4	75-125	0.189	20	L637804-07	WG663853
Selenium	mg/kg	46.8	46.8	93.6	75-125	0	20	L637804-07	WG663853
Silver	mg/kg	42.3	44.4	84.6	75-125	4.84	20	L637804-07	WG663853
Zinc	mg/kg	105.	104.	108.	75-125	0.957	20	L637804-07	WG663853

Serial Dilution

Batch number /Run number / Sample number cross reference

WG663187: R2684181: L637757-08

WG663268: R2684241: L637757-01 02 03 04 05 06 09 10 11 12 13

WG663411: R2685840: L637757-08

WG663344: R2688300: L637757-07

* Performance of this Analyte is outside of established criteria.

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WG663761: R2689420: L637757-08
WG663707: R2690222: L637757-08
WG663760: R2690940: L637757-08
WG663842: R2691520: L637757-08
WG663554: R2691921 R2691966: L637757-01 02 03 04 05 06 07 10 11 12 13 08 09
WG664317: R2692363: L637757-08
WG664318: R2692780: L637757-08
WG663853: R2694404: L637757-08

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

Report Summary

Monday June 03, 2013

Report Number: L637761


Samples Received: 05/24/13

Client Project: 047813001

Description: Voloshin Mortin 1(-8)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 03, 2013

Date Received : May 24, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB07 5-10FT
Collected By : Chris McKisson
Collection Date : 05/22/13 11:25

ESC Sample # : L637761-01

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.025	mg/kg	8021/8015	05/26/13	50
Toluene	BDL	0.25	mg/kg	8021/8015	05/26/13	50
Ethylbenzene	0.35	0.025	mg/kg	8021/8015	05/26/13	50
Total Xylene	0.28	0.075	mg/kg	8021/8015	05/26/13	50
TPH (GC/FID) Low Fraction	47.	5.0	mg/kg	GRO	05/26/13	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	05/26/13	50
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	05/26/13	50
TPH (GC/FID) High Fraction	190	4.0	mg/kg	3546/DRO	05/31/13	1
Surrogate recovery(%)						
o-Terphenyl	76.8		% Rec.	3546/DRO	05/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/03/13 14:27 Printed: 06/03/13 14:27

Summary of Remarks For Samples Printed
06/03/13 at 14:27:56

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L637761-01 Account: LTENVRCO Received: 05/24/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/03/13 14:27



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LT Environmental- Rifle, CO
Rob Fishburn
820 Megan Ave, Unit B

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Quality Assurance Report
Level II

L637761

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June 03, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG663268	05/25/13 23:36
Ethylbenzene	< .0005	mg/kg			WG663268	05/25/13 23:36
Toluene	< .005	mg/kg			WG663268	05/25/13 23:36
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG663268	05/25/13 23:36
Total Xylene	< .0015	mg/kg			WG663268	05/25/13 23:36
a,a,a-Trifluorotoluene(FID)		% Rec.	101.5	59-128	WG663268	05/25/13 23:36
a,a,a-Trifluorotoluene(PID)		% Rec.	108.5	54-144	WG663268	05/25/13 23:36
TPH (GC/FID) High Fraction	< 4	mg/kg			WG663554	05/31/13 19:46
o-Terphenyl		% Rec.	72.30	50-150	WG663554	05/31/13 19:46

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0512	102.	76-113	WG663268
Ethylbenzene	mg/kg	.05	0.0535	107.	78-115	WG663268
Toluene	mg/kg	.05	0.0525	105.	76-114	WG663268
Total Xylene	mg/kg	.15	0.164	109.	81-118	WG663268
a,a,a-Trifluorotoluene(PID)				107.6	54-144	WG663268
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.34	97.1	67-135	WG663268
a,a,a-Trifluorotoluene(FID)				104.4	59-128	WG663268
TPH (GC/FID) High Fraction	mg/kg	60	41.6	69.3	50-150	WG663554
o-Terphenyl				69.90	50-150	WG663554

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0520	0.0512	104.	76-113	1.57	20	WG663268
Ethylbenzene	mg/kg	0.0546	0.0535	109.	78-115	1.94	20	WG663268
Toluene	mg/kg	0.0533	0.0525	106.	76-114	1.52	20	WG663268
Total Xylene	mg/kg	0.167	0.164	112.	81-118	1.96	20	WG663268
a,a,a-Trifluorotoluene(PID)				107.5	54-144			WG663268
TPH (GC/FID) Low Fraction	mg/kg	5.44	5.34	99.0	67-135	1.76	20	WG663268
a,a,a-Trifluorotoluene(FID)				104.2	59-128			WG663268
TPH (GC/FID) High Fraction	mg/kg	41.1	41.6	68.0	50-150	1.31	20	WG663554
o-Terphenyl				66.90	50-150			WG663554

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.242	0.000373	.05	96.6	32-137	L637757-01	WG663268
Ethylbenzene	mg/kg	0.250	0.000414	.05	99.8	10-150	L637757-01	WG663268
Toluene	mg/kg	0.250	0.00136	.05	99.4	20-142	L637757-01	WG663268
Total Xylene	mg/kg	0.773	0.00239	.15	103.	16-141	L637757-01	WG663268
a,a,a-Trifluorotoluene(PID)					106.8	54-144		WG663268
TPH (GC/FID) Low Fraction	mg/kg	22.4	0	5.5	81.3	55-109	L637757-01	WG663268
a,a,a-Trifluorotoluene(FID)					101.6	59-128		WG663268
TPH (GC/FID) High Fraction	mg/kg	43.8	1.36	60	70.7	50-150	L637757-03	WG663554
o-Terphenyl					68.00	50-150		WG663554

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Rob Fishburn
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June 03, 2013

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.221	0.242	88.1	32-137	9.23	39	L637757-01	WG663268
Ethylbenzene	mg/kg	0.222	0.250	88.8	10-150	11.6	44	L637757-01	WG663268
Toluene	mg/kg	0.223	0.250	88.8	20-142	11.2	42	L637757-01	WG663268
Total Xylene	mg/kg	0.683	0.773	90.7	16-141	12.3	46	L637757-01	WG663268
a,a,a-Trifluorotoluene(PID)				106.7	54-144				WG663268
TPH (GC/FID) Low Fraction	mg/kg	24.4	22.4	88.6	55-109	8.52	20	L637757-01	WG663268
a,a,a-Trifluorotoluene(FID)				102.1	59-128				WG663268
TPH (GC/FID) High Fraction	mg/kg	43.4	43.8	70.0	50-150	0.850	20	L637757-03	WG663554
o-Terphenyl				66.60	50-150				WG663554

Batch number /Run number / Sample number cross reference

WG663268: R2684241: L637761-01

WG663554: R2691921: L637761-01

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Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
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Report Summary

Thursday June 06, 2013

Report Number: L637918


Samples Received: 05/25/13

Client Project: 047813001

Description: Voloshin Mortin 1(-8)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 15 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 08:40

ESC Sample # : L637918-01

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	50.	mg/kg	3060A/7196A	05/31/13	25
Chromium, Trivalent	4.0	0.50	mg/kg	Calc.	06/01/13	1
ORP	210		mV	2580 B-2011	06/03/13	1
pH	8.5		su	9045D	06/03/13	1
Sodium Adsorption Ratio	8.6			Calc.	06/04/13	1
Specific Conductance	440		umhos/cm	9050AMod	06/03/13	1
Mercury	0.031	0.020	mg/kg	7471	05/27/13	1
Arsenic	2.2	1.0	mg/kg	6010B	06/01/13	1
Barium	48.	0.25	mg/kg	6010B	06/01/13	1
Cadmium	BDL	0.25	mg/kg	6010B	06/01/13	1
Chromium	4.0	0.50	mg/kg	6010B	06/01/13	1
Copper	4.1	1.0	mg/kg	6010B	06/01/13	1
Lead	4.0	0.25	mg/kg	6010B	06/01/13	1
Nickel	4.6	1.0	mg/kg	6010B	06/01/13	1
Selenium	BDL	1.0	mg/kg	6010B	06/01/13	1
Silver	BDL	0.50	mg/kg	6010B	06/01/13	1
Zinc	17.	1.5	mg/kg	6010B	06/01/13	1
Benzene	0.035	0.0025	mg/kg	8021/8015	05/30/13	5
Toluene	0.028	0.025	mg/kg	8021/8015	05/30/13	5
Ethylbenzene	0.033	0.0025	mg/kg	8021/8015	05/30/13	5
Total Xylene	0.15	0.0075	mg/kg	8021/8015	05/30/13	5
TPH (GC/FID) Low Fraction	30.	0.50	mg/kg	GRO	05/30/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	87.1		% Rec.	8021/8015	05/30/13	5
a,a,a-Trifluorotoluene(PID)	97.9		% Rec.	8021/8015	05/30/13	5
TPH (GC/FID) High Fraction	100	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	98.0		% Rec.	3546/DRO	05/29/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.010	0.0060	mg/kg	8270C-SIM	06/02/13	1
Acenaphthene	0.0094	0.0060	mg/kg	8270C-SIM	06/02/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L637918-01 (PH) - 8.5@21.3c



12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 15 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 08:40

ESC Sample # : L637918-01

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Fluorene	0.037	0.0060	mg/kg	8270C-SIM	06/02/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
Naphthalene	0.052	0.020	mg/kg	8270C-SIM	06/02/13	1
Phenanthrene	0.044	0.0060	mg/kg	8270C-SIM	06/02/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/02/13	1
1-Methylnaphthalene	0.17	0.020	mg/kg	8270C-SIM	06/02/13	1
2-Methylnaphthalene	0.13	0.020	mg/kg	8270C-SIM	06/02/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	06/02/13	1
Surrogate Recovery						
Nitrobenzene-d5	84.0		% Rec.	8270C-SIM	06/02/13	1
2-Fluorobiphenyl	83.9		% Rec.	8270C-SIM	06/02/13	1
p-Terphenyl-d14	103.		% Rec.	8270C-SIM	06/02/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L637918-01 (PH) - 8.5@21.3c



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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 16 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 09:00

ESC Sample # : L637918-02

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/30/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/30/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/30/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.3		% Rec.	8021/8015	05/30/13	5
a,a,a-Trifluorotoluene(PID)	98.1		% Rec.	8021/8015	05/30/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	106.		% Rec.	3546/DRO	05/29/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 17 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 09:25

ESC Sample # : L637918-03

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/30/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/30/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/30/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.5		% Rec.	8021/8015	05/30/13	5
a,a,a-Trifluorotoluene(PID)	98.1		% Rec.	8021/8015	05/30/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	101.		% Rec.	3546/DRO	05/29/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 18 0-5
Collected By : Chris McKisson
Collection Date : 05/23/13 09:35

ESC Sample # : L637918-04

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	11.	0.12	mg/kg	8021/8015	05/30/13	250
Toluene	26.	1.2	mg/kg	8021/8015	05/30/13	250
Ethylbenzene	6.6	0.12	mg/kg	8021/8015	05/30/13	250
Total Xylene	36.	0.38	mg/kg	8021/8015	05/30/13	250
TPH (GC/FID) Low Fraction	1200	25.	mg/kg	GRO	05/30/13	250
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	85.2		% Rec.	8021/8015	05/30/13	250
a,a,a-Trifluorotoluene(PID)	97.8		% Rec.	8021/8015	05/30/13	250
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	100.		% Rec.	3546/DRO	05/29/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 19 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 10:05

ESC Sample # : L637918-05

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/30/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/30/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/30/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.6		% Rec.	8021/8015	05/30/13	5
a,a,a-Trifluorotoluene(PID)	98.4		% Rec.	8021/8015	05/30/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	90.2		% Rec.	3546/DRO	05/29/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 20 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 10:30

ESC Sample # : L637918-06

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/30/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/30/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/30/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.3		% Rec.	8021/8015	05/30/13	5
a,a,a-Trifluorotoluene(PID)	98.0		% Rec.	8021/8015	05/30/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	114.		% Rec.	3546/DRO	05/29/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 06, 2013

Date Received : May 25, 2013
Description : Voloshin Mortin 1(-8)
Sample ID : SB 21 5-10
Collected By : Chris McKisson
Collection Date : 05/23/13 10:50

ESC Sample # : L637918-07

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.014	0.0025	mg/kg	8021/8015	05/30/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/30/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/30/13	5
Total Xylene	0.092	0.0075	mg/kg	8021/8015	05/30/13	5
TPH (GC/FID) Low Fraction	27.	0.50	mg/kg	GRO	05/30/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	85.7		% Rec.	8021/8015	05/30/13	5
a,a,a-Trifluorotoluene(PID)	94.0		% Rec.	8021/8015	05/30/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/13	1
Surrogate recovery(%)						
o-Terphenyl	95.8		% Rec.	3546/DRO	05/29/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/06/13 08:16 Printed: 06/06/13 08:17

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L637918-01	WG663760	SAMP	Chromium, Hexavalent	R2690940	0

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
06/06/13 at 08:17:31

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L637918-01 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16
Sample: L637918-02 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16
Sample: L637918-03 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16
Sample: L637918-04 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16
Sample: L637918-05 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16
Sample: L637918-06 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16
Sample: L637918-07 Account: LTENVRCO Received: 05/25/13 09:00 Due Date: 06/03/13 00:00 RPT Date: 06/06/13 08:16



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LT Environmental- Rifle, CO
Rob Fishburn
820 Megan Ave, Unit B

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Quality Assurance Report
Level II

L637918

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Est. 1970

June 06, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG663327	05/27/13 14:36
Benzene	< .0005	mg/kg			WG663344	05/29/13 22:49
Ethylbenzene	< .0005	mg/kg			WG663344	05/29/13 22:49
Toluene	< .005	mg/kg			WG663344	05/29/13 22:49
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG663344	05/29/13 22:49
Total Xylene	< .0015	mg/kg			WG663344	05/29/13 22:49
a,a,a-Trifluorotoluene(FID)		% Rec.	92.77	59-128	WG663344	05/29/13 22:49
a,a,a-Trifluorotoluene(PID)		% Rec.	98.69	54-144	WG663344	05/29/13 22:49
TPH (GC/FID) High Fraction	< 4	mg/kg			WG663652	05/29/13 17:45
o-Terphenyl		% Rec.	96.10	50-150	WG663652	05/29/13 17:45
TPH (GC/FID) High Fraction	< 4	mg/kg			WG663651	05/29/13 18:10
o-Terphenyl		% Rec.	92.00	50-150	WG663651	05/29/13 18:10
Chromium, Hexavalent	< 2	mg/kg			WG663760	05/31/13 15:10
1-Methylnaphthalene	< .02	mg/kg			WG663901	06/02/13 11:38
2-Chloronaphthalene	< .02	mg/kg			WG663901	06/02/13 11:38
2-Methylnaphthalene	< .02	mg/kg			WG663901	06/02/13 11:38
Acenaphthene	< .006	mg/kg			WG663901	06/02/13 11:38
Acenaphthylene	< .006	mg/kg			WG663901	06/02/13 11:38
Anthracene	< .006	mg/kg			WG663901	06/02/13 11:38
Benzo(a)anthracene	< .006	mg/kg			WG663901	06/02/13 11:38
Benzo(a)pyrene	< .006	mg/kg			WG663901	06/02/13 11:38
Benzo(b)fluoranthene	< .006	mg/kg			WG663901	06/02/13 11:38
Benzo(g,h,i)perylene	< .006	mg/kg			WG663901	06/02/13 11:38
Benzo(k)fluoranthene	< .006	mg/kg			WG663901	06/02/13 11:38
Chrysene	< .006	mg/kg			WG663901	06/02/13 11:38
Dibenz(a,h)anthracene	< .006	mg/kg			WG663901	06/02/13 11:38
Fluoranthene	< .006	mg/kg			WG663901	06/02/13 11:38
Fluorene	< .006	mg/kg			WG663901	06/02/13 11:38
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG663901	06/02/13 11:38
Naphthalene	< .02	mg/kg			WG663901	06/02/13 11:38
Phenanthrene	< .006	mg/kg			WG663901	06/02/13 11:38
Pyrene	< .006	mg/kg			WG663901	06/02/13 11:38
2-Fluorobiphenyl		% Rec.	94.00	70-130	WG663901	06/02/13 11:38
Nitrobenzene-d5		% Rec.	86.60	70-130	WG663901	06/02/13 11:38
p-Terphenyl-d14		% Rec.	99.10	70-130	WG663901	06/02/13 11:38
Specific Conductance	0.920	umhos/cm			WG664318	06/03/13 15:10
Arsenic	< 1	mg/kg			WG663856	06/01/13 12:39
Barium	< .25	mg/kg			WG663856	06/01/13 12:39
Cadmium	< .25	mg/kg			WG663856	06/01/13 12:39
Chromium	< .5	mg/kg			WG663856	06/01/13 12:39
Copper	< 1	mg/kg			WG663856	06/01/13 12:39
Lead	< .25	mg/kg			WG663856	06/01/13 12:39
Nickel	< 1	mg/kg			WG663856	06/01/13 12:39
Selenium	< 1	mg/kg			WG663856	06/01/13 12:39
Silver	< .5	mg/kg			WG663856	06/01/13 12:39

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

June 06, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Zinc	< 1.5	mg/kg			WG663856	06/01/13 12:39

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0.0690	0.0655	5.39	20	L637840-01	WG663327
Chromium,Hexavalent	mg/kg	0	0.840	NA	20	L638038-12	WG663760
Chromium,Hexavalent	mg/kg	0	0	0	20	L638038-13	WG663760
ORP	mV	240.	240.	0.416	20	L637757-08	WG664317
ORP	mV	270.	270.	1.49	20	L638038-08	WG664317
pH	su	8.60	8.50	0.820	1	L637918-01	WG664310
pH	su	9.00	9.00	0.222	1	L638452-05	WG664310
Specific Conductance	umhos/cm	800.	800.	0.623	20	L637757-08	WG664318
Specific Conductance	umhos/cm	150.	150.	3.09	20	L638554-02	WG664318
Arsenic	mg/kg	2.40	2.20	8.70	20	L637964-02	WG663856
Barium	mg/kg	61.0	60.0	1.65	20	L637964-02	WG663856
Cadmium	mg/kg	0	0	0	20	L637964-02	WG663856
Chromium	mg/kg	12.0	12.0	0	20	L637964-02	WG663856
Copper	mg/kg	6.90	6.98	1.15	20	L637964-02	WG663856
Lead	mg/kg	6.90	7.20	4.26	20	L637964-02	WG663856
Nickel	mg/kg	10.0	10.7	6.76	20	L637964-02	WG663856
Selenium	mg/kg	1.80	1.50	18.2	20	L637964-02	WG663856
Silver	mg/kg	0	0	0	20	L637964-02	WG663856
Zinc	mg/kg	26.0	26.0	0	20	L637964-02	WG663856

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Mercury	mg/kg	12.4	15.7	126.	71.6-128	WG663327
Benzene	mg/kg	.05	0.0432	86.5	76-113	WG663344
Ethylbenzene	mg/kg	.05	0.0463	92.6	78-115	WG663344
Toluene	mg/kg	.05	0.0453	90.7	76-114	WG663344
Total Xylene	mg/kg	.15	0.144	96.0	81-118	WG663344
a,a,a-Trifluorotoluene(PID)				98.14	54-144	WG663344
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.43	98.7	67-135	WG663344
a,a,a-Trifluorotoluene(FID)				96.40	59-128	WG663344
TPH (GC/FID) High Fraction	mg/kg	60	51.8	86.3	50-150	WG663652
o-Terphenyl				95.60	50-150	WG663652
TPH (GC/FID) High Fraction	mg/kg	60	48.6	80.9	50-150	WG663651
o-Terphenyl				90.60	50-150	WG663651
Chromium,Hexavalent	mg/kg	146	123.	84.2	80-120	WG663760

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Tax I.D. 62-0814289

Est. 1970

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1-Methylnaphthalene	mg/kg	.08	0.0724	90.5	70-130	WG663901
2-Chloronaphthalene	mg/kg	.08	0.0671	83.8	70-130	WG663901
2-Methylnaphthalene	mg/kg	.08	0.0746	93.2	70-130	WG663901
Acenaphthene	mg/kg	.08	0.0711	88.9	70-130	WG663901
Acenaphthylene	mg/kg	.08	0.0696	87.0	70-130	WG663901
Anthracene	mg/kg	.08	0.0770	96.3	70-130	WG663901
Benzo(a)anthracene	mg/kg	.08	0.0741	92.6	70-130	WG663901
Benzo(a)pyrene	mg/kg	.08	0.0725	90.6	70-130	WG663901
Benzo(b)fluoranthene	mg/kg	.08	0.0678	84.7	70-130	WG663901
Benzo(g,h,i)perylene	mg/kg	.08	0.0740	92.5	70-130	WG663901
Benzo(k)fluoranthene	mg/kg	.08	0.0749	93.7	70-130	WG663901
Chrysene	mg/kg	.08	0.0738	92.3	70-130	WG663901
Dibenz(a,h)anthracene	mg/kg	.08	0.0761	95.1	70-130	WG663901
Fluoranthene	mg/kg	.08	0.0726	90.7	70-130	WG663901
Fluorene	mg/kg	.08	0.0708	88.5	70-130	WG663901
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0767	95.9	70-130	WG663901
Naphthalene	mg/kg	.08	0.0731	91.4	70-130	WG663901
Phenanthrene	mg/kg	.08	0.0699	87.4	70-130	WG663901
Pyrene	mg/kg	.08	0.0774	96.7	70-130	WG663901
2-Fluorobiphenyl				85.30	70-130	WG663901
Nitrobenzene-d5				86.20	70-130	WG663901
p-Terphenyl-d14				94.40	70-130	WG663901
ORP	mV	228	230.	101.	95.6-104.	WG664317
pH	su	5.79	5.86	101.	98.3-101.7	WG664310
Specific Conductance	umhos/cm	878	900.	103.	85-115	WG664318
Arsenic	mg/kg	237	214.	90.3	83.1-117	WG663856
Barium	mg/kg	252	243.	96.4	84.1-116	WG663856
Cadmium	mg/kg	191	180.	94.2	83.2-117	WG663856
Chromium	mg/kg	128	119.	93.0	81.3-118	WG663856
Copper	mg/kg	123	123.	100.	83.7-116	WG663856
Lead	mg/kg	103	92.5	89.8	83.1-117	WG663856
Nickel	mg/kg	118	104.	88.1	82-118	WG663856
Selenium	mg/kg	110	105.	95.5	78.7-122	WG663856
Silver	mg/kg	47.3	43.5	92.0	66.2-134	WG663856
Zinc	mg/kg	183	172.	94.0	82-118	WG663856

Analyte	Units	Laboratory Control Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec			
Benzene	mg/kg	0.0440	0.0432	88.0	76-113	1.82	WG663344
Ethylbenzene	mg/kg	0.0466	0.0463	93.0	78-115	0.640	WG663344
Toluene	mg/kg	0.0453	0.0453	91.0	76-114	0.0400	WG663344
Total Xylene	mg/kg	0.144	0.144	96.0	81-118	0.100	WG663344
a,a,a-Trifluorotoluene(PID)				97.85	54-144		WG663344
TPH (GC/FID) Low Fraction	mg/kg	5.29	5.43	96.0	67-135	2.59	WG663344
a,a,a-Trifluorotoluene(FID)				96.17	59-128		WG663344
TPH (GC/FID) High Fraction	mg/kg	58.7	51.8	98.0	50-150	12.5	WG663652
o-Terphenyl				108.0	50-150		WG663652

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	mg/kg	49.7	48.6	83.0	50-150	2.23	20	WG663651
o-Terphenyl				89.90	50-150			WG663651
Chromium,Hexavalent	mg/kg	124.	123.	85.0	80-120	0.810	20	WG663760
1-Methylnaphthalene	mg/kg	0.0717	0.0724	90.0	70-130	0.990	25	WG663901
2-Chloronaphthalene	mg/kg	0.0712	0.0671	89.0	70-130	6.06	25	WG663901
2-Methylnaphthalene	mg/kg	0.0695	0.0746	87.0	70-130	7.03	25	WG663901
Acenaphthene	mg/kg	0.0707	0.0711	88.0	70-130	0.630	25	WG663901
Acenaphthylene	mg/kg	0.0732	0.0696	91.0	70-130	5.04	25	WG663901
Anthracene	mg/kg	0.0768	0.0770	96.0	70-130	0.340	25	WG663901
Benzo(a)anthracene	mg/kg	0.0744	0.0741	93.0	70-130	0.370	25	WG663901
Benzo(a)pyrene	mg/kg	0.0725	0.0725	91.0	70-130	0.0100	25	WG663901
Benzo(b)fluoranthene	mg/kg	0.0735	0.0678	92.0	70-130	8.12	25	WG663901
Benzo(g,h,i)perylene	mg/kg	0.0752	0.0740	94.0	70-130	1.57	25	WG663901
Benzo(k)fluoranthene	mg/kg	0.0698	0.0749	87.0	70-130	7.17	25	WG663901
Chrysene	mg/kg	0.0719	0.0738	90.0	70-130	2.57	25	WG663901
Dibenz(a,h)anthracene	mg/kg	0.0773	0.0761	96.0	70-130	1.54	25	WG663901
Fluoranthene	mg/kg	0.0755	0.0726	94.0	70-130	3.95	25	WG663901
Fluorene	mg/kg	0.0691	0.0708	86.0	70-130	2.41	25	WG663901
Indeno(1,2,3-cd)pyrene	mg/kg	0.0781	0.0767	98.0	70-130	1.75	25	WG663901
Naphthalene	mg/kg	0.0687	0.0731	86.0	70-130	6.25	25	WG663901
Phenanthrene	mg/kg	0.0697	0.0699	87.0	70-130	0.290	25	WG663901
Pyrene	mg/kg	0.0770	0.0774	96.0	70-130	0.440	25	WG663901
2-Fluorobiphenyl				92.10	70-130			WG663901
Nitrobenzene-d5				86.80	70-130			WG663901
p-Terphenyl-d14				98.50	70-130			WG663901
ORP	mV	220.	230.	96.0	95.6-104.	4.44	20	WG664317
pH	su	5.84	5.86	101.	98.3-101.7	0.342	20	WG664310
Specific Conductance	umhos/	880.	900.	100.	85-115	2.25	20	WG664318

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Mercury	mg/kg	0.339	0.0655	.25	109.	80-120	L637840-01	WG663327
Benzene	mg/kg	0.210	0.0135	.05	78.6	32-137	L637757-07	WG663344
Ethylbenzene	mg/kg	0.219	0.0214	.05	79.1	10-150	L637757-07	WG663344
Toluene	mg/kg	0.223	0.0400	.05	73.2	20-142	L637757-07	WG663344
Total Xylene	mg/kg	0.726	0.225	.15	66.8	16-141	L637757-07	WG663344
a,a,a-Trifluorotoluene(PID)					95.09	54-144		WG663344
TPH (GC/FID) Low Fraction	mg/kg	33.4	38.2	5.5	0*	55-109	L637757-07	WG663344
a,a,a-Trifluorotoluene(FID)					92.26	59-128		WG663344
TPH (GC/FID) High Fraction	mg/kg	52.1	0.223	60	86.5	50-150	L637909-01	WG663652
o-Terphenyl					95.60	50-150		WG663652

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) High Fraction	mg/kg	57.8	0	60	96.4	50-150	L637964-15	WG663651
o-Terphenyl					102.0	50-150		WG663651
Chromium, Hexavalent	mg/kg	19.6	0	20	98.0	75-125	L638038-01	WG663760
1-Methylnaphthalene	mg/kg	0.0752	0.00568	.08	86.9	70-130	L637910-13	WG663901
2-Chloronaphthalene	mg/kg	0.0715	0	.08	89.4	70-130	L637910-13	WG663901
2-Methylnaphthalene	mg/kg	0.0737	0.0130	.08	75.9	70-130	L637910-13	WG663901
Acenaphthene	mg/kg	0.0629	0	.08	78.6	70-130	L637910-13	WG663901
Acenaphthylene	mg/kg	0.0617	0	.08	77.2	70-130	L637910-13	WG663901
Anthracene	mg/kg	0.0653	0	.08	81.6	70-130	L637910-13	WG663901
Benzo(a)anthracene	mg/kg	0.0623	0	.08	77.8	70-130	L637910-13	WG663901
Benzo(a)pyrene	mg/kg	0.0612	0	.08	76.5	70-130	L637910-13	WG663901
Benzo(b)fluoranthene	mg/kg	0.0544	0	.08	68.0*	70-130	L637910-13	WG663901
Benzo(g,h,i)perylene	mg/kg	0.0584	0	.08	73.0	70-130	L637910-13	WG663901
Benzo(k)fluoranthene	mg/kg	0.0604	0	.08	75.6	70-130	L637910-13	WG663901
Chrysene	mg/kg	0.0679	0	.08	84.9	70-130	L637910-13	WG663901
Dibenz(a,h)anthracene	mg/kg	0.0658	0	.08	82.3	70-130	L637910-13	WG663901
Fluoranthene	mg/kg	0.0591	0	.08	73.8	70-130	L637910-13	WG663901
Fluorene	mg/kg	0.0589	0	.08	73.7	70-130	L637910-13	WG663901
Indeno(1,2,3-cd)pyrene	mg/kg	0.0611	0	.08	76.3	70-130	L637910-13	WG663901
Naphthalene	mg/kg	0.144	0.0716	.08	90.3	70-130	L637910-13	WG663901
Phenanthrene	mg/kg	0.0579	0.000734	.08	71.4	70-130	L637910-13	WG663901
Pyrene	mg/kg	0.0576	0	.08	72.0	70-130	L637910-13	WG663901
2-Fluorobiphenyl					108.0	70-130		WG663901
Nitrobenzene-d5					97.10	70-130		WG663901
p-Terphenyl-d14					110.0	70-130		WG663901
Arsenic	mg/kg	46.8	2.20	50	89.2	75-125	L637964-02	WG663856
Barium	mg/kg	109.	60.0	50	98.0	75-125	L637964-02	WG663856
Cadmium	mg/kg	46.5	0	50	93.0	75-125	L637964-02	WG663856
Chromium	mg/kg	60.6	12.0	50	97.2	75-125	L637964-02	WG663856
Copper	mg/kg	56.8	6.98	50	99.6	75-125	L637964-02	WG663856
Lead	mg/kg	53.8	7.20	50	93.2	75-125	L637964-02	WG663856
Nickel	mg/kg	55.8	10.7	50	90.2	75-125	L637964-02	WG663856
Selenium	mg/kg	45.2	1.50	50	87.4	75-125	L637964-02	WG663856
Silver	mg/kg	47.5	0	50	95.0	75-125	L637964-02	WG663856
Zinc	mg/kg	75.0	26.0	50	98.0	75-125	L637964-02	WG663856

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.319	0.339	101.	80-120	6.12	20	L637840-01	WG663327
Benzene	mg/kg	0.209	0.210	78.4	32-137	0.290	39	L637757-07	WG663344
Ethylbenzene	mg/kg	0.231	0.219	83.7	10-150	5.07	44	L637757-07	WG663344
Toluene	mg/kg	0.226	0.223	74.5	20-142	1.44	42	L637757-07	WG663344
Total Xylene	mg/kg	0.838	0.726	81.6	16-141	14.2	46	L637757-07	WG663344
a,a,a-Trifluorotoluene(PID)				96.95	54-144				WG663344
TPH (GC/FID) Low Fraction	mg/kg	44.2	33.4	21.8*	55-109	27.9*	20	L637757-07	WG663344
a,a,a-Trifluorotoluene(FID)				93.25	59-128				WG663344
TPH (GC/FID) High Fraction	mg/kg	52.3	52.1	86.9	50-150	0.430	20	L637909-01	WG663652
o-Terphenyl				95.10	50-150				WG663652

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	mg/kg	58.5	57.8	97.6	50-150	1.22	20	L637964-15	WG663651
o-Terphenyl				104.0	50-150				WG663651
Chromium, Hexavalent	mg/kg	20.4	19.6	102.	75-125	4.00	20	L638038-01	WG663760
1-Methylnaphthalene	mg/kg	0.0745	0.0752	86.0	70-130	0.960	25	L637910-13	WG663901
2-Chloronaphthalene	mg/kg	0.0572	0.0715	71.5	70-130	22.2	25	L637910-13	WG663901
2-Methylnaphthalene	mg/kg	0.0890	0.0737	95.0	70-130	18.9	25	L637910-13	WG663901
Acenaphthene	mg/kg	0.0549	0.0629	68.7*	70-130	13.5	25	L637910-13	WG663901
Acenaphthylene	mg/kg	0.0606	0.0617	75.8	70-130	1.82	25	L637910-13	WG663901
Anthracene	mg/kg	0.0542	0.0653	67.7*	70-130	18.7	25	L637910-13	WG663901
Benzo(a)anthracene	mg/kg	0.0513	0.0623	64.1*	70-130	19.4	25	L637910-13	WG663901
Benzo(a)pyrene	mg/kg	0.0507	0.0612	63.4*	70-130	18.7	25	L637910-13	WG663901
Benzo(b)fluoranthene	mg/kg	0.0398	0.0544	49.7*	70-130	31.0*	25	L637910-13	WG663901
Benzo(g,h,i)perylene	mg/kg	0.0501	0.0584	62.7*	70-130	15.2	25	L637910-13	WG663901
Benzo(k)fluoranthene	mg/kg	0.0569	0.0604	71.1	70-130	6.07	25	L637910-13	WG663901
Chrysene	mg/kg	0.0590	0.0679	73.7	70-130	14.1	25	L637910-13	WG663901
Dibenz(a,h)anthracene	mg/kg	0.0580	0.0658	72.5	70-130	12.6	25	L637910-13	WG663901
Fluoranthene	mg/kg	0.0452	0.0591	56.5*	70-130	26.5*	25	L637910-13	WG663901
Fluorene	mg/kg	0.0498	0.0589	62.2*	70-130	16.9	25	L637910-13	WG663901
Indeno(1,2,3-cd)pyrene	mg/kg	0.0526	0.0611	65.8*	70-130	14.9	25	L637910-13	WG663901
Naphthalene	mg/kg	0.163	0.144	114.	70-130	12.5	25	L637910-13	WG663901
Phenanthrene	mg/kg	0.0466	0.0579	57.4*	70-130	21.5	25	L637910-13	WG663901
Pyrene	mg/kg	0.0444	0.0576	55.5*	70-130	25.8*	25	L637910-13	WG663901
2-Fluorobiphenyl				100.0	70-130				WG663901
Nitrobenzene-d5				96.90	70-130				WG663901
p-Terphenyl-d14				105.0	70-130				WG663901
Arsenic	mg/kg	44.9	46.8	85.4	75-125	4.14	20	L637964-02	WG663856
Barium	mg/kg	110.	109.	100.	75-125	0.913	20	L637964-02	WG663856
Cadmium	mg/kg	45.0	46.5	90.0	75-125	3.28	20	L637964-02	WG663856
Chromium	mg/kg	59.2	60.6	94.4	75-125	2.34	20	L637964-02	WG663856
Copper	mg/kg	55.4	56.8	96.8	75-125	2.50	20	L637964-02	WG663856
Lead	mg/kg	52.5	53.8	90.6	75-125	2.45	20	L637964-02	WG663856
Nickel	mg/kg	54.5	55.8	87.6	75-125	2.36	20	L637964-02	WG663856
Selenium	mg/kg	44.0	45.2	85.0	75-125	2.69	20	L637964-02	WG663856
Silver	mg/kg	45.4	47.5	90.8	75-125	4.52	20	L637964-02	WG663856
Zinc	mg/kg	73.3	75.0	94.6	75-125	2.29	20	L637964-02	WG663856

Serial Dilution

Batch number /Run number / Sample number cross reference

WG663327: R2684462: L637918-01
WG663344: R2688300: L637918-01 02 03 04 05 06 07
WG663651: R2690200: L637918-01 02 03 04 05 06
WG663652: R2690201: L637918-07
WG663760: R2690940: L637918-01
WG663901: R2692020: L637918-01
WG664317: R2692363: L637918-01
WG664310: R2692740: L637918-01
WG664318: R2692780: L637918-01

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Rifle, CO 81650

WG663856: R2694407: L637918-01
WG664413: R2694541: L637918-01

Quality Assurance Report
Level II

L637918

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* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

Report Summary

Tuesday June 04, 2013

Report Number: L638196


Samples Received: 05/29/13

Client Project: 047813001

Description: Voloshin Morton 1(-8)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW02
Collected By : Chris McKisson
Collection Date : 05/24/13 14:40

ESC Sample # : L638196-01

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	460	5.0	ug/l	8021B	05/31/13	10
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	2.7	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW03
Collected By : Chris McKisson
Collection Date : 05/24/13 14:50

ESC Sample # : L638196-02

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/31/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	111.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Rob Fishburn
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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW04
Collected By : Chris McKisson
Collection Date : 05/24/13 15:00

ESC Sample # : L638196-03

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

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Det. Limit - Practical Quantitation Limit(PQL)

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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW05
Collected By : Chris McKisson
Collection Date : 05/24/13 15:05

ESC Sample # : L638196-04

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

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REPORT OF ANALYSIS

Rob Fishburn
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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW08
Collected By : Chris McKisson
Collection Date : 05/24/13 15:10

ESC Sample # : L638196-05

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	1.1	0.50	ug/l	8021B	05/30/13	1
Total Xylene	4.1	1.5	ug/l	8021B	05/31/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Rob Fishburn
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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW09
Collected By : Chris McKisson
Collection Date : 05/24/13 15:20

ESC Sample # : L638196-06

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	2200	5.0	ug/l	8021B	05/30/13	10
Toluene	310	50.	ug/l	8021B	05/30/13	10
Ethylbenzene	390	5.0	ug/l	8021B	05/30/13	10
Total Xylene	540	15.	ug/l	8021B	05/31/13	10
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021B	05/30/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW13
Collected By : Chris McKisson
Collection Date : 05/24/13 14:30

ESC Sample # : L638196-07

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	8.9	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	1.8	1.5	ug/l	8021B	05/31/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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LT Environmental- Rifle, CO
820 Megan Ave, Unit B
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June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW16
Collected By : Chris McKisson
Collection Date : 05/24/13 13:40

ESC Sample # : L638196-08

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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820 Megan Ave, Unit B
Rifle, CO 81650

June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW17
Collected By : Chris McKisson
Collection Date : 05/24/13 14:10

ESC Sample # : L638196-09

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%) a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW18
Collected By : Chris McKisson
Collection Date : 05/24/13 14:20

ESC Sample # : L638196-10

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	82000	1000	ug/l	9056	05/30/13	1
Sulfate	360000	50000	ug/l	9056	05/30/13	10
Dissolved Solids	1400000	10000	ug/l	2540 C-201	05/31/13	1
Benzene	5700	50.	ug/l	8021B	05/31/13	100
Toluene	5800	500	ug/l	8021B	05/31/13	100
Ethylbenzene	470	50.	ug/l	8021B	05/31/13	100
Total Xylene	2400	150	ug/l	8021B	05/31/13	100
Surrogate Recovery(%) a,a,a-Trifluorotoluene(PID)	97.4		% Rec.	8021B	05/31/13	100

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Rob Fishburn
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW19
Collected By : Chris McKisson
Collection Date : 05/24/13 13:50

ESC Sample # : L638196-11

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.72	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/31/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

June 04, 2013

Date Received : May 29, 2013
Description : Voloshin Morton 1(-8)
Sample ID : MW20
Collected By : Chris McKisson
Collection Date : 05/24/13 14:00

ESC Sample # : L638196-12

Site ID :

Project # : 047813001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	ug/l	8021B	05/30/13	1
Toluene	BDL	5.0	ug/l	8021B	05/30/13	1
Ethylbenzene	BDL	0.50	ug/l	8021B	05/30/13	1
Total Xylene	BDL	1.5	ug/l	8021B	05/30/13	1
Surrogate Recovery(%)						
a,a,a-Trifluorotoluene(PID)	112.		% Rec.	8021B	05/30/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Rob Fishburn
820 Megan Ave, Unit B

Rifle, CO 81650

Quality Assurance Report
Level II

L638196

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/l			WG663808	05/30/13 00:04
Ethylbenzene	< .0005	mg/l			WG663808	05/30/13 00:04
Toluene	< .005	mg/l			WG663808	05/30/13 00:04
Total Xylene	< .0015	mg/l			WG663808	05/30/13 00:04
a,a,a-Trifluorotoluene(PID)		% Rec.	112.2	55-122	WG663808	05/30/13 00:04
Chloride	< 1	mg/l			WG663865	05/30/13 09:32
Sulfate	< 5	mg/l			WG663865	05/30/13 09:32
Benzene	< .0005	mg/l			WG664085	05/31/13 00:35
Ethylbenzene	< .0005	mg/l			WG664085	05/31/13 00:35
Toluene	< .005	mg/l			WG664085	05/31/13 00:35
Total Xylene	< .0015	mg/l			WG664085	05/31/13 00:35
a,a,a-Trifluorotoluene(PID)		% Rec.	98.03	55-122	WG664085	05/31/13 00:35
Dissolved Solids	< 10	mg/l			WG663861	05/31/13 14:06

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Chloride	mg/l	0	0.170	NA	20	L638165-12	WG663865
Sulfate	mg/l	0	0.0950	NA	20	L638165-12	WG663865
Sulfate	mg/l	0	0	0	20	L637914-11	WG663865
Dissolved Solids	mg/l	350.	354.	0.283	5	L638209-03	WG663861

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/l	.05	0.0465	93.1	79-114	WG663808
Ethylbenzene	mg/l	.05	0.0539	108.	80-116	WG663808
Toluene	mg/l	.05	0.0489	97.8	79-112	WG663808
Total Xylene	mg/l	.15	0.165	110.	84-118	WG663808
a,a,a-Trifluorotoluene(PID)				110.1	55-122	WG663808
Chloride	mg/l	40	40.4	101.	90-110	WG663865
Sulfate	mg/l	40	40.3	101.	90-110	WG663865
Benzene	mg/l	.05	0.0479	95.9	79-114	WG664085
Ethylbenzene	mg/l	.05	0.0490	98.1	80-116	WG664085
Toluene	mg/l	.05	0.0476	95.1	79-112	WG664085
Total Xylene	mg/l	.15	0.144	95.7	84-118	WG664085
a,a,a-Trifluorotoluene(PID)				97.09	55-122	WG664085
Dissolved Solids	mg/l	8800	8710	99.0	85-115	WG663861

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/l	0.0475	0.0465	95.0	79-114	2.05	20	WG663808
Ethylbenzene	mg/l	0.0547	0.0539	109.	80-116	1.55	20	WG663808
Toluene	mg/l	0.0500	0.0489	100.	79-112	2.18	20	WG663808

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

LT Environmental- Rifle, CO
Rob Fishburn
820 Megan Ave, Unit B

Rifle, CO 81650

Quality Assurance Report
Level II

L638196

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 04, 2013

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Total Xylene	mg/l	0.169	0.165	113.	84-118	2.45	20	WG663808
a,a,a-Trifluorotoluene(PID)				111.1	55-122			WG663808
Chloride	mg/l	40.4	40.4	101.	90-110	0	20	WG663865
Sulfate	mg/l	40.6	40.3	102.	90-110	0.742	20	WG663865
Benzene	mg/l	0.0448	0.0479	90.0	79-114	6.84	20	WG664085
Ethylbenzene	mg/l	0.0468	0.0490	94.0	80-116	4.61	20	WG664085
Toluene	mg/l	0.0454	0.0476	91.0	79-112	4.56	20	WG664085
Total Xylene	mg/l	0.137	0.144	91.0	84-118	4.60	20	WG664085
a,a,a-Trifluorotoluene(PID)				96.33	55-122			WG664085
Dissolved Solids	mg/l	8770	8710	100.	85-115	0.686	5	WG663861

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/l	0.0558	0.000818	.05	110.	35-147	L637399-02	WG664085
Ethylbenzene	mg/l	0.0545	0.000272	.05	108.	39-141	L637399-02	WG664085
Toluene	mg/l	0.0537	0.000204	.05	107.	35-148	L637399-02	WG664085
Total Xylene	mg/l	0.166	0.00621	.15	106.	33-151	L637399-02	WG664085
a,a,a-Trifluorotoluene(PID)					97.35	55-122		WG664085
Benzene	mg/l	0.0617	0	.05	123.	35-147	L637777-02	WG663808
Ethylbenzene	mg/l	0.0605	0	.05	121.	39-141	L637777-02	WG663808
Toluene	mg/l	0.0599	0	.05	120.	35-148	L637777-02	WG663808
Total Xylene	mg/l	0.174	0	.15	116.	33-151	L637777-02	WG663808

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/l	0.0576	0.0558	114.	35-147	3.19	20	L637399-02	WG664085
Ethylbenzene	mg/l	0.0562	0.0545	112.	39-141	2.98	20	L637399-02	WG664085
Toluene	mg/l	0.0553	0.0537	110.	35-148	3.02	20	L637399-02	WG664085
Total Xylene	mg/l	0.171	0.166	110.	33-151	2.83	20	L637399-02	WG664085
a,a,a-Trifluorotoluene(PID)				97.14	55-122				WG664085
Benzene	mg/l	0.0588	0.0617	118.	35-147	4.76	20	L637777-02	WG663808
Ethylbenzene	mg/l	0.0576	0.0605	115.	39-141	4.94	20	L637777-02	WG663808
Toluene	mg/l	0.0570	0.0599	114.	35-148	4.84	20	L637777-02	WG663808
Total Xylene	mg/l	0.164	0.174	109.	33-151	6.17	20	L637777-02	WG663808

Batch number /Run number / Sample number cross reference

WG663808: R2689541: L638196-01 02 03 04 05 06 07 08 09 11 12
WG663865: R2690004: L638196-10
WG664085: R2690482: L638196-01 02 05 06 07 10 11
WG663861: R2690641: L638196-10

* * Calculations are performed prior to rounding of reported values.
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.