

LEGEND

- X RELEASE LOCATION
- ASSESSMENT SOIL BORING
- DIRECTIONAL SOIL BORING
- ↑ SURVEYED GROUNDWATER FLOW DIRECTION
- BERM

AST: ABOVEGROUND STORAGE TANK

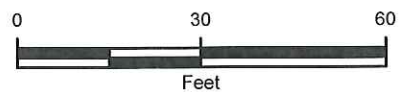
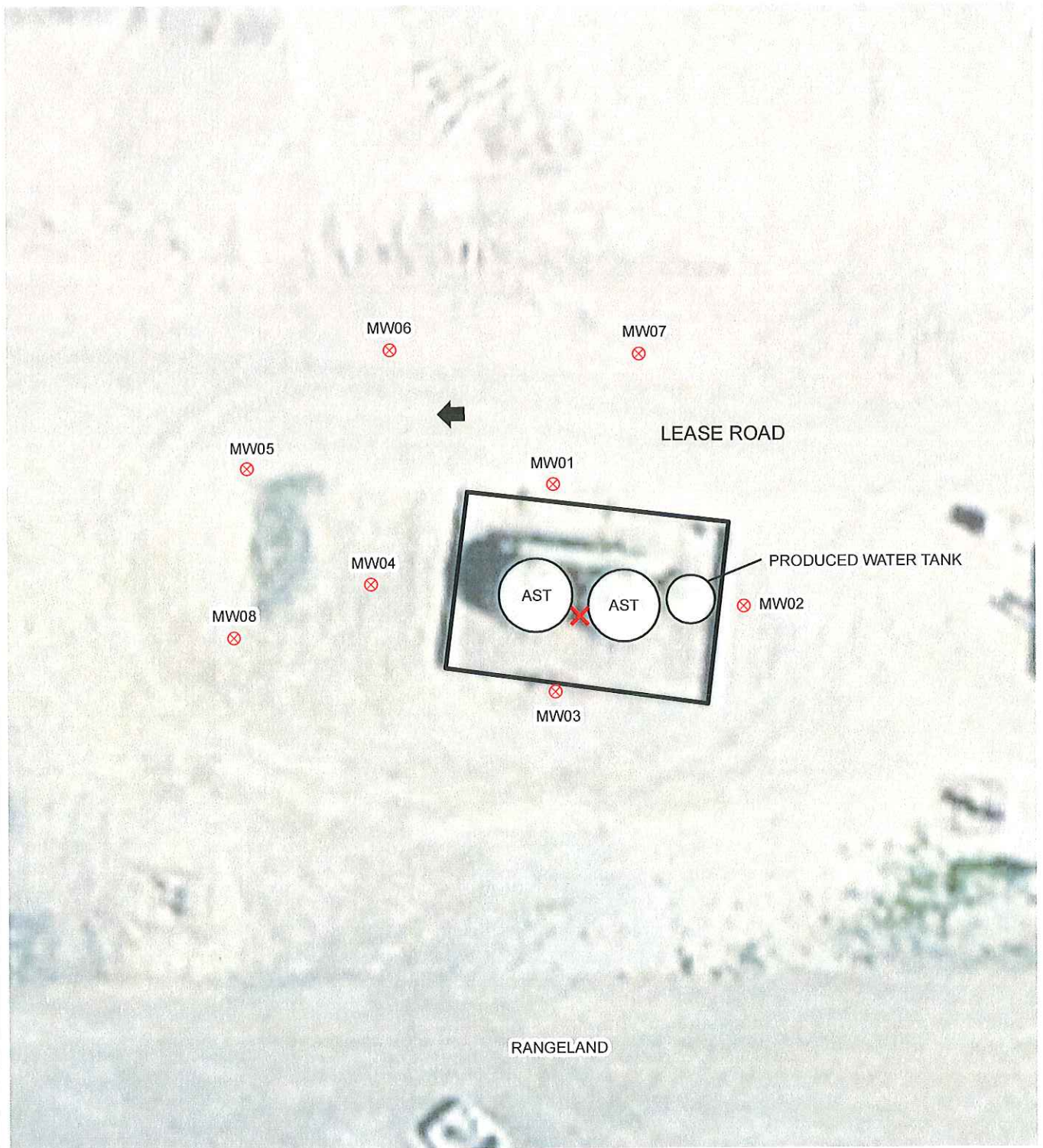


IMAGE COURTESY OF ESRI

FIGURE 2
ASSESSMENT SITE MAP
 CLACK 1-2A, OLSON 2-2
 NWNE SEC 2-T3N-R67W
 WELD COUNTY, COLORADO
 KERR-MCGEE OIL & GAS ONSHORE LP





LEGEND



RELEASE LOCATION



MONITORING WELL



SURVEYED GROUNDWATER FLOW DIRECTION



BERM

AST: ABOVEGROUND STORAGE TANK

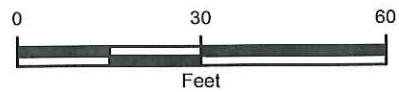
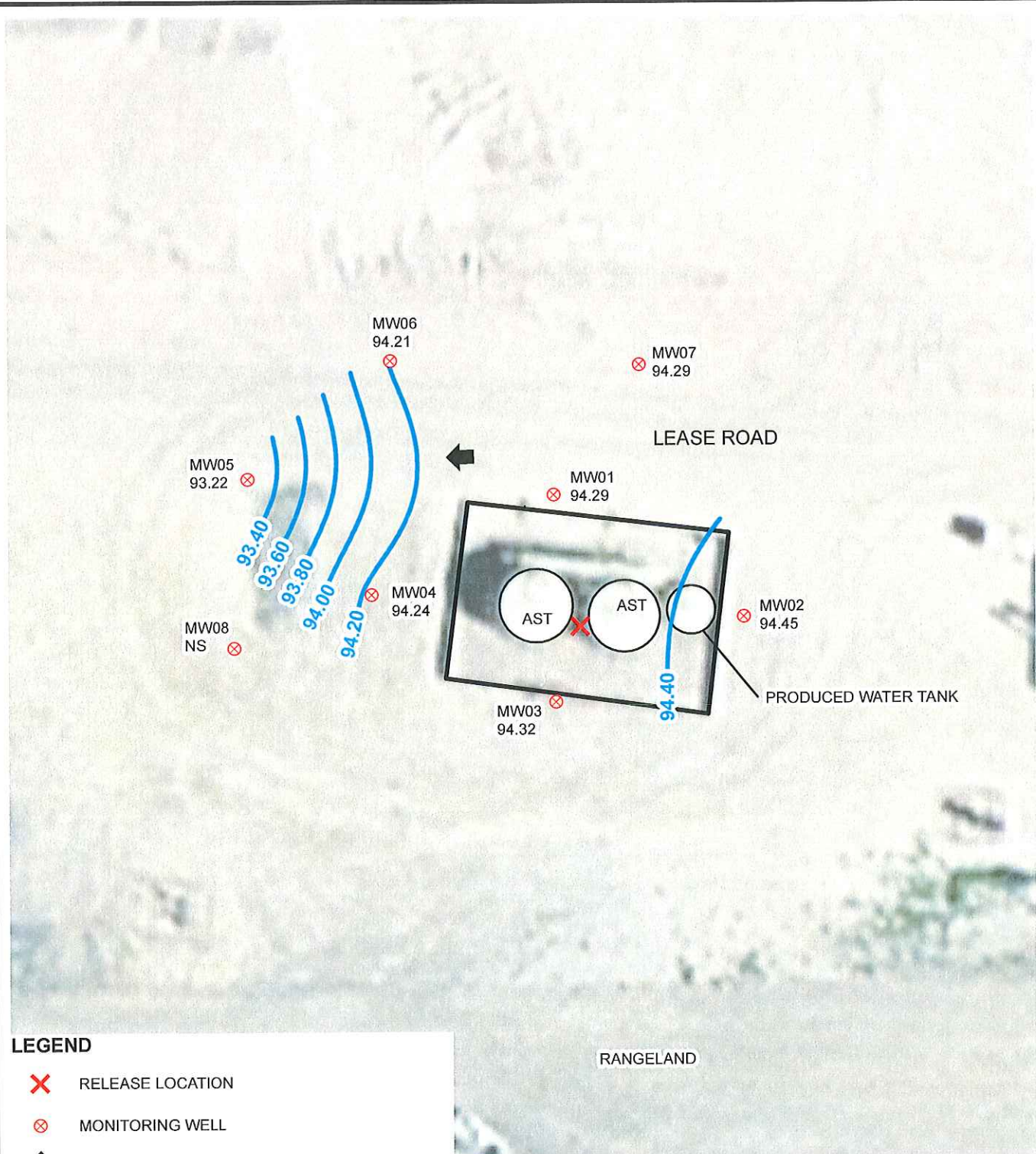


IMAGE COURTESY OF ESRI

FIGURE 3
SITE MAP
CLACK 1-2A, OLSON 2-2
NWNE SEC 2-T3N-R67W
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP





LEGEND



RELEASE LOCATION



MONITORING WELL



SURVEYED GROUNDWATER FLOW DIRECTION



RELATIVE GROUNDWATER ELEVATION CONTOUR

CONTOUR INTERVAL = 0.20 FEET

GRADIENT = 0.008 FEET/FOOT



BERM

AST: ABOVEGROUND STORAGE TANK
NS: WELL NOT SURVEYED

GROUNDWATER ELEVATIONS WERE
MEASURED ON AUGUST 5, 2015

RANGELAND

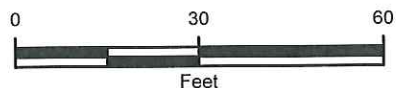


IMAGE COURTESY OF ESRI

FIGURE 4
GROUNDWATER ELEVATION CONTOUR MAP
CLACK 1-2A, OLSON 2-2
NWNE SEC 2-T3N-R67W
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
CLACK 1-2A, OLSON 2-2
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Soil Sample ID	Depth (bgs)	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	ORO (mg/kg)
SB01 @ 5'	5'	08/04/2015	<0.050	<0.050	<0.050	<0.050	67	<25	<100
SB02 @ 1'	1'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB02 @ 5'	5'	08/04/2015	<0.050	<0.050	<0.050	<0.050	38	<25	<100
SB03 @ 1'	1'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB04 @ 3'	3'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB05 @ 3'	3'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB05 @ 5'	5'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB06 @ 3'	3'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	45	<100
SB06 @ 5'	5'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB07 @ 3'	3'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB07 @ 5'	5'	08/04/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
UTSB01 West@3'	3'	08/04/2015	2.61	<0.050	1.21	8.48	150	100	<100
UTSB02 East@3'	3'	08/04/2015	9.05	4.90	4.83	63.6	730	880	140
SB08@1'	1'	08/06/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
SB08@3'	3'	08/06/2015	<0.002	<0.002	<0.002	<0.002	<25	<25	<100
COGCC Allowable Levels			0.17	85	100	175	500*	500*	500*

Notes: bgs - below ground surface
COGCC - Colorado Oil and Gas Conservation Commission
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram

NA - not analyzed/not available
ORO - oil range organics
* - Standard applies to combined DRO-GRO-ORO
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level



TABLE 2
GROUNDWATER ANALYTICAL AND FIELD RESULTS
CLACK 1-2A, OLSON 2-2
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

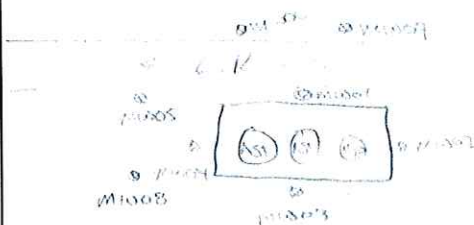
Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
MW01	08/05/2015	17.8	<4.0	<4.0	16.4	6.03	94.29
MW02	08/05/2015	<4.0	<4.0	<4.0	<4.0	5.49	94.45
MW03	08/05/2015	<4.0	<4.0	<4.0	<4.0	4.88	93.52
MW04	08/05/2015	54.6	<4.0	6.3	<4.0	4.58	94.24
MW05	08/05/2015	<1.0	<1.0	<1.0	<1.0	5.14	93.22
MW06	08/05/2015	<1.0	<1.0	<1.0	<1.0	5.81	94.21
MW07	08/05/2015	<1.0	<1.0	<1.0	<1.0	5.77	94.29
MW08	08/17/2015	<1.0	<1.0	<1.0	<1.0	3.42	NA
CGWQS		5	1000	700	1400		

Notes: CGWQS - Colorado Groundwater Quality Standards
Elev. - elevation
ft bgs - feet below ground surface
GW - groundwater
NA - not analyzed/not available

NM - not measured
µg/L - micrograms per liter
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level
Excavation groundwater depth is approximate



Well Location Sketch:



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LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <u>SB01</u>		Project: <u>Clack 1-2A, Olson 2-2</u>	
Date: <u>8/4/15</u>		Project Number: <u>14213044</u>	
Logged By: <u>Kris Shepherd RZ</u>		Drilled By: <u>Drill Pro</u>	
Drilling Method: <u>Hydrovac / Direct Push / HAND AUGER</u>		Sampling Method: <u>HAND AUGER Continuous</u>	
Seal: <u>Bentonite</u>		Grout: <u>-</u>	
Gravel Pack: <u>Silica Sand</u>			
Casing Type: <u>PVC</u>	Diameter: <u>1"</u>	Length: <u>2</u>	Hole Diameter: <u>3"</u>
Screen Type: <u>PVC</u>	Slot: <u>0.01</u>	Diameter: <u>1"</u>	Length: <u>10</u>
		Total Depth: <u>12'</u>	Depth to Liquid: <u>-</u>
			Depth to Water: <u>S.S.</u>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.0	NO		2			6" CL/gc	1' BROWN. SANDY CLAYS. GRAVELS. NO CLAY	AAA
	Moist	0.0	NO		4			6" CL/gc	3' BROWN SANDY CLAYS. GRAVELS. NO CLAY	AAA
	Moist	355.7	YES	SB01E5	(945) 6			6" CL/gc	5' BLACK. SANDY CLAYS. GRAVELS. High plasticity	AAA
	Moist	689.9	YES	SB01E7	(948) 8			2' CH	6-8 BLACK. clays. High plasticity High plasticity	AAA
	Wet	873.7	YES		10			4' CH	8-10 SRA	AAA
	Wet	1392	YES	SB01E12	955 12			SP.	10-12. SANDY GRAVELS well rounded gravels SANDS mg-cg	AAA
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TP. 12'

Screen from 12-2 (10' screen.)

SAND TO 1 Bgs

Flush mant. with concrete

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB02	Project: Clack 1-2A, Olson 2-2
Date: 8/4/2015	Project Number: 14213044
Logged By: Kris Shepherd/RZ	Drilled By: Drill Pro
Drilling Method: HAND AUGER Direct Push	Sampling Method: Continuous
Seal: Bentonite	Grout: -
Gravel Pack: Silica Sand	Diameter: 1" Length: 2
Casing Type: PVC	Hole Diameter: 3" Depth to Liquid: -
Screen Type: PVC Slot: 0.01	Diameter: 1" Length: 10
	Total Depth: 12' Depth to Water: 5.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.9	NO	SB0201	11.6		6"	SP/GC	0-1' BROWN. GRAVELY SANDS/CLAYS NO ODOOR	
	Moist	0.1	NO		2		6"	SP/GC	3' SAA	
	Moist	6.2	Slight	SB0205	11.5		6"	GC	5' GREY/BLACK GRAVELY SANDS WELL ROUNDED. Slight DEGRAD.	
		149.3			8		1'	GP/SP CL	6-7 BLACK, GRAVELY SANDS, SLIGHT ODOOR	
		450.8			10		2'	GP/SP	7-8 BLACK, SANDY CLAYS. MED PLASTICITY - SLIGHT ODOOR.	
				SB0206	11.30				8-12 BLACK. GRAVELY SANDS VEG ODOOR. WELL ROUNDED SANDS/GRAVELS.	
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD. 12
 SCREEN FROM (12-2') 10 feet screen
 SAND TO 1 BGS
 Bentonite/ concrete
 Flush mount.

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB03

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd/RZ

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

HAND AUGER Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

2

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10

Total Depth:

12

Depth to Water:

5.5

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.8	NO	SB0301	1126			CL	6-1' SANDY CLAYS. BROWN NOODLE. GRAVEL INCLUSIONS	
	Moist.	0.1	slight		2			CL/SP	3' SANDY CLAYS. GRAVEL INCLUSIONS. BLACK/DARK BROWN	
	Wet	0.5	YES	SB0305	1125			CL	5' BLACK. D.D.R. SANDY CLAYS. MED PLASTICITY.	
9W. 55										
	Wet	530	YES.	SB0307	1200		2'	GP MH/C	6'-12' WELL ROUNDED GRAVELS/SANDS V.G. 0-8 BLACKY HIGH PLASTICITY. HIGH COHESION. SILTY CLAY. ORG	
					8					
					10		4'	GP/SP	8-12' GRAVELY SANDS/CLAYS. WELL ROUNDED.	
	Wet	10.1	NO		12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

T.D. 12'

SCREEN FROM 12-2 (10 FEET SCREEN)

SAND TO 1 BGS

BENTONITE/CONCRETE

FLUSH MOUNT.

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB04

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd/rz

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Hand Auger Direct Push

Sampling Method:

Hand Auger Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

20'

Depth to Water:

5.0'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.3	NO		2			6" SC	0-1 Brown. clayey SANDS. NO odor. low cohesion	
9/10	Moist	10.5	Slight	SB0403	114.5			6" SC/L	3' Silty Sandy clay. med plasticity. med cohesion. slight odor. Brown/med brown.	
	Moist	2.3	Yes	SB0405	115.0			6" SC/L	5' Black. Silty Sandy clays med plasticity	
	Wet	46.1	Yes	SB0407	121.5			2' SC/L	med cohesion. odor.	
	Wet	46.7	Slight		10			3' SC/L	6-8 Black silty clays med plasticity med cohesion odor	
	Wet	3.3	NO		12			3' GP/SP	8-9 S&A	
	Wet	2.7	NO		14			4' GP/SP	9-12 Gravelly SANDS/VCG well rounded	
					16			4' GP/SP	12-14 Gravelly SANDS /VCG well rounded	
					18			4' GP/SP	14-16 Gravelly SANDS mg/dg well rounded NO odor	
					20			4' GP/SP	16-20' Gravelly SANDS mg/vrg well rounded NO odor	
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD. 20' Well Set AT TD 12'
 Screen from 12-2' (10 feet).
 Sand from 20-4'
 Flush moist

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB05

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd RZ

Drilled By:

Drill Pro

Drilling Method:

HANDAUGER Direct Push

Sampling Method:

Continuous

Seal:

Bentonite

Grout:

-

Gravel Pack:

Silica Sand

Casing Type:

PVC

Diameter:

1"

Length:

2

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10

Total Depth:

12

Depth to Water:

5.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.0	NO		2			6" GC	0-1 BROWN, CLAYEY SAND, GRAVEL INCLUSIONS NOODLE	AAA
GW	Moist	0.0	NO	SB0503	1305			6" GC	3' BROWN, DARK BROWN, GRAVELY SANDS, NOODLE	
3.5	Moist	0.0	NO	SB0505	1310			6" GC	5' SAA	
7					6					
	Wet	0.2	NO		8			4" SM	6-8. TAN-BROWN, SANDY SILTS, LOW PLASTICITY, LOW COHESION, SLIGHT ODOR, NO ODORE	
					10				8-9. TAN, LIGHT BROWN, SILTY SANDS, MG GRAVELS, NO ODORE	
	Wet	0.4	NO	SB0506	1325			3' GM	9-12. TAN, LIGHT BROWN, SILTY SANDS, GRAVELS, MG VEG, NO ODORE	
				11"	12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD 12'

Screen from 12-2' (10ft screen)

SAND TO 1 BJS

Bentonite/concrete grade

flush mount.

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

S306

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd

Drilled By:

Drill Pro

Drilling Method:

Direct Push / Hand Auger

Sampling Method:

Continuous

Elevation:

Detector:

PID

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

12'

Depth to Water:

~5.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.0			2		x	SP	0-1' lg. fine sands, brown, no odor, no stain, moist	
	↓	0.0		S306 3/30	4		x	GC	3'-brown gravelly sands, no odor, no stain, moist	
	↓	0.0		S306 3/30	6		x	GC	NO stain, moist	
	Wet				8	2'	2'	MH	6'-D 11' silty black, high plasticity, no odor, no stain, moist	
					10	4'	3'	GP	11'-D 12' gravelly sands, tan, no stain, no odor, moist	
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page ____ of ____

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB07

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd/RE

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10

Total Depth:

12

Depth to Water:

5.5

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
FW	moist	0.0	NO		2			6" SP	0-1' BROWN. SANDS Fg-ing well rounded NO ODR	AAA
SS	moist	0.0	NO	SB0703	1400			6" MH	3' Black. Inorganic silts. High plastic NO ODR	AAA
Δ	moist	0.3	NO	SB0705	1405			6" MH/SP	5' Black Inorganic sandy silts. High plastic NO ODR	AAA
	wet	0.0	NO		8			2' MH.	6-8' Black Inorganic silts. High plastic NO ODR MICACOUS silts.	AAA
	wet	0.0	NO	Screen	10			1' MH.	8-12' Black. Inorganic silts. High plastic NO ODR. MICACOUS silts.	AAA
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD 12'

Screen from 12-2 (10 ft screen)

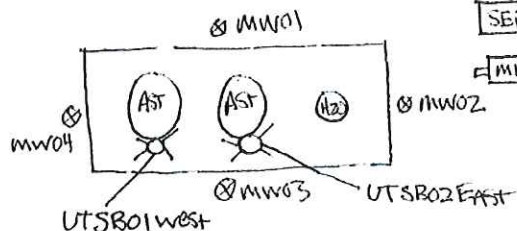
SAND TO BG'S

Bentonite/cement grout

High micaceous

Well Location Sketch:

LEASE ROAD



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

UTSBO1 West

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

NA

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

NA

Total Depth:

5.0

Depth to Water:

NA

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
2'	WAST	890	yes		1				Hydrovac, Not Logged	
3'	WAST	960	yes		2					
4'	WAST	1033	yes		3					
5'	WAST	990	yes	UTSBO1 West	4				All depths are sandy clay, silty, brownish	
					5					
					6					
					7					
					8					
					9					
					10					
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page ____ of ____

LEASE ROAD



Arvada, Colorado 80003

UT SBOZ EAST

Clack 1-2A, Olson 2-2

8/4/15

14213044

Kris Shepherd

Drill Pro

Direct Push

Continuous

Detector:

PID

Bentonite

Silica Sand

 NA

1

PVC

Slot:

Length:

19

PVC

28

5.0'

1. *Journal of Management Studies*, 1996, 33, 1, 1-15.

4.0

Depth to Water:

Depth to Water:

NCA

14A

NOTES

Well Location Sketch:



Compliance • Engineering • Remediation

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB03

Project:

Clack 1-2A, Olson 2-2

Date:

8/6/2015

Project Number:

14213044

Logged By:

Kris Shepherd

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

12'

Depth to Water:

~4'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist ↓ wet	5.2 2.1 2.7	NOV	SB03C1 (1325)	2				Sandy clay, brown, no odor/stain low cohesion/plasticity, moist - Hydrovac, Not Logged	
				SB03C2 (1345)	4				- Well graded sands, tan, no odor/ grain, moist - CAA	
					6					
		0.3			8	2'	2'		6'-09' sand fg - coarse, tan, no stain, no odor	
		1.1			10	4'	3'		1'-12' gravelly sands, fg	
		0.9		SB03C3 (1345)	12				- D.V. coarse, tan, no stain, no odor, wet	
					14					
					16				- Flush mount	
					18				- Push point to 12'	
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page ____ of ____



September 11, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Clack 1-2A, Olson 2-2

Project Number - 014213044

Attached are your analytical results for KMG - Clack 1-2A, Olson 2-2 received by Origins Laboratory, Inc. August 04, 2015. This project is associated with Origins project number X508026-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01 @ 5'	X508026-01	Soil	August 4, 2015 9:45	08/04/2015 16:30
SB02 @ 1'	X508026-03	Soil	August 4, 2015 11:10	08/04/2015 16:30
SB02 @ 5'	X508026-04	Soil	August 4, 2015 11:15	08/04/2015 16:30
SB03 @ 1'	X508026-05	Soil	August 4, 2015 11:20	08/04/2015 16:30
SB04 @ 3'	X508026-07	Soil	August 4, 2015 11:45	08/04/2015 16:30
SB05 @ 3'	X508026-09	Soil	August 4, 2015 13:05	08/04/2015 16:30
SB05 @ 5'	X508026-10	Soil	August 4, 2015 13:10	08/04/2015 16:30
SB06 @ 3'	X508026-11	Soil	August 4, 2015 13:30	08/04/2015 16:30
SB06 @ 5'	X508026-12	Soil	August 4, 2015 13:35	08/04/2015 16:30
SB07 @ 3'	X508026-13	Soil	August 4, 2015 14:00	08/04/2015 16:30

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB07 @ 5'	X508026-14	Soil	August 4, 2015 14:05	08/04/2015 16:30
UTSB01 West	X508026-15	Soil	August 4, 2015 14:35	08/04/2015 16:30
UTSB02 East	X508026-16	Soil	August 4, 2015 14:55	08/04/2015 16:30

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

www.originslaboratory.com





X508026

ORIGINS
LABORATORY, INC

page 1 of 2

Client: LT
Address: 4600 West 60th Ave
Telephone Number: (303) 433-9720
Email Address: John.Cocroft@ltenv.com

Project Manager: John Cocroft
Project Name: Clack 1-2A, Olson 2-2
Project Number: 014213044
Samples Collected By: KS/RZ

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Sampler & Container #	Other			
SB01C5	8/4/15	0945	1	X					X			X	1	Same Day: <input type="checkbox"/> 24 Hr: <input type="checkbox"/> 48 Hr: <input type="checkbox"/> 72 Hr: <input type="checkbox"/> Standard <input type="checkbox"/> ⁹⁰
SB01C7	8/4/15	0950	1	X					X			X	2	
SB02C1		1110	1	X					X			X	3	
SB02C5		1115	1	X					X			X	4	
SB03C1		1120	1	X					X			X	5	
SB03C5		1125	1	X					X			X	6	
SB04C3		1145	1	X					X			X	7	
SB04C5		1150	1	X					X			X	8	
SB05C3		1305	1	X					X			X	9	
SB05C5		1310	1	X					X			X	10	
Relinquished By: 	Date: 8/4/15	Time: 530	Received By: 	Time: 1530	Date: 8/4/15	Turnaround Time: Same Day: <input type="checkbox"/> 24 Hr: <input type="checkbox"/> 48 Hr: <input type="checkbox"/> 72 Hr: <input type="checkbox"/> Standard <input type="checkbox"/> ⁹⁰								
Relinquished By: 	Date: 8/4/15	Time: 1630	Received By: 	Time: 1630	Date: 8/4/15									

Date Results Needed

Origins Laboratory, Inc.

Jeff Pellegrini

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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

www.originslaboratory.com





X508026

ORIGINS
LABORATORY, INC

page 2 of 2

Client: LT
Address: Clack 1-2A, Olson 2-2
Telephone Number: 704213044
Email Address: KS@KS

Project Manager: Clack 1-2A, Olson 2-2
Project Name: 704213044
Project Number: KS@KS
Samples Collected By: KS@KS

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Ascorbic Acid	Other			
SB0405	8/4/15	1330	1	X						X		X	1	Sample Instructions Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard <input type="checkbox"/> <input checked="" type="checkbox"/>
SB0405		1335	1	X						X		X	2	
SB0405		1400	1	X						X		X	3	
SB0405		1405	1	X						X		X	4	
UTS021 West		1435	1	X						X		X	5	
UTS021 East		1455	1	X						X		X	6	
													7	
													8	
													9	
													10	
Relinquished By: 	Date: 8/4/15	Time: 1530	Received By: 	Date: 8/4/15	Time: 1530	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard <input type="checkbox"/> <input checked="" type="checkbox"/>								
Relinquished By: 	Date: 8/4/15	Time: 1630	Received By: 	Date: 8/4/15	Time: 1630									

Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: X508026

Client: LTE

Client Project ID: KMG - Clack 1-2A, Olson 2-2

Checklist Completed by: [Signature]

Shipped Via: HID

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 8/5/15

Airbill #: N/A

Matrix(s) Received (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____

Cooler Number/Temperature: 1 15-2 °C 1 °C 1 °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)?	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) pH < 2 for samples preserved with HNO ₃ HCl, H ₂ SO ₄ / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any): <u>TAT changed to 72 hour per Kelly K gp 8/5/15</u>				

*If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager): [Signature]

Date/Time Reviewed: 8/5/15

Origins Laboratory, Inc.

[Signature]

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB01 @ 5'

8/4/2015 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
X508026-01 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.050	mg/kg	25	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"	
Surrogate: Toluene-d8	91.3 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	67	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	55.2 %	65-146			"	"	"	S-DUP
------------------------	--------	--------	--	--	---	---	---	-------

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB02 @ 1'
8/4/2015 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
X508026-03 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
Surrogate: Toluene-d8	91.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.3 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	
Surrogate: o-Terphenyl	40.5 %	65-146			"	"	"	S-DUP

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB02 @ 5'
8/4/2015 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-04 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.050	mg/kg	25	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	93.7 %	70-130			"	"	"	
Surrogate: Toluene-d8	93.5 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	38	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	59.9 %	65-146			"	"	"	S-DUP
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Origins Laboratory, Inc.

Jefe Pellegrini

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB03 @ 1'
8/4/2015 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-05 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	93.5 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	33.7 %	65-146			"	"	"	S-DUP
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Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB04 @ 3'
8/4/2015 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-07 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	
Surrogate: Toluene-d8	91.7 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	73.4 %	65-146			"	"	"	
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Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB05 @ 3'

8/4/2015 1:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
X508026-09 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	93.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	53.0 %	65-146			"	"	"	S-DUP
------------------------	--------	--------	--	--	---	---	---	-------

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB05 @ 5'
8/4/2015 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-10 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	93.7 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	76.3 %	65-146			"	"	"	
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Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB06 @ 3'

8/4/2015 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-11 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	95.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	94.5 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	45	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	
Surrogate: o-Terphenyl	118 %	65-146			"	"	"	

Origins Laboratory, Inc.

Jefe Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB06 @ 5'
8/4/2015 1:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-12 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	95.9 %	70-130			"	"	"
Surrogate: Toluene-d8	93.7 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015
Diesel (C10-C28)	ND	25	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"

Surrogate: o-Terphenyl	74.2 %	65-146			"	"	"
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Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB07 @ 3'

8/4/2015 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-13 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/05/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	
Surrogate: Toluene-d8	93.0 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	
Surrogate: o-Terphenyl	76.3 %	65-146			"	"	"	

Origins Laboratory, Inc.

Jefe Pellegrini

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB07 @ 5'
8/4/2015 2:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-14 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H05005	08/05/2015	08/06/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	94.7 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	ND	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	47.6 %	65-146			"	"	"	S-DUP
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Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

UTSB01 West
8/4/2015 2:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-15 (Soil)

BTEX by EPA 8260C

Benzene	2.61	0.050	mg/kg	25	5H05005	08/05/2015	08/06/2015	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	1.21	0.050	"	"	"	"	"	
Xylenes, total	8.48	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.5 %	70-130			"	"	"	
Surrogate: Toluene-d8	124 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	100	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	150	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	85.1 %	65-146			"	"	"	
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Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

UTSB02 East
8/4/2015 2:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508026-16 (Soil)

BTEX by EPA 8260C

Benzene	9.05	0.050	mg/kg	25	5H05005	08/05/2015	08/06/2015	
Toluene	4.90	0.050	"	"	"	"	"	
Ethylbenzene	4.83	0.050	"	"	"	"	"	
Xylenes, total	63.6	0.498	"	250	"	"	08/06/2015	

Surrogate: 1,2-Dichloroethane-d4	92.6 %	70-130			"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	880	25	mg/kg	1	5H05006	08/05/2015	08/06/2015	
Diesel (C10-C28)	730	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	140	100	"	"	"	"	"	

Surrogate: o-Terphenyl	110 %	65-146			"	"	"	
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Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H05005 - EPA 5030 (soil)

Blank (5H05005-BLK1)

Prepared: 08/05/2015 Analyzed: 08/05/2015

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.2	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.

Jefe Pellegrini

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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H05005 - EPA 5030 (soil)

LCS (5H05005-BS1)

Prepared: 08/05/2015 Analyzed: 08/05/2015

Benzene	0.093	0.002	mg/kg	0.100		92.8	77.1-124			
Toluene	0.084	0.002	"	0.100		84.3	74.5-128			
Ethylbenzene	0.082	0.002	"	0.100		82.2	66.4-127			
m,p-Xylene	0.165	0.004	"	0.200		82.4	76.6-124			
o-Xylene	0.086	0.002	"	0.100		85.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58		ug/kg	62.5		92.8	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.0	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H05005 - EPA 5030 (soil)

Matrix Spike (5H05005-MS1)		Source: X508026-11			Prepared: 08/05/2015 Analyzed: 08/05/2015					
Benzene	0.089	0.002	mg/kg	0.100	ND	88.6	71.8-126			
Toluene	0.081	0.002	"	0.100	ND	80.7	65.1-130			
Ethylbenzene	0.080	0.002	"	0.100	ND	79.6	62.2-130			
m,p-Xylene	0.159	0.004	"	0.200	ND	79.4	46.5-137			
o-Xylene	0.082	0.002	"	0.100	ND	81.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		90.8	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H05005 - EPA 5030 (soil)

Matrix Spike Dup (5H05005-MSD1)		Source: X508026-11			Prepared: 08/05/2015 Analyzed: 08/05/2015					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.1	71.8-126	6.04	11.3	
Toluene	0.088	0.002	"	0.100	ND	88.2	65.1-130	8.85	15.4	
Ethylbenzene	0.087	0.002	"	0.100	ND	87.1	62.2-130	8.90	19.6	
m,p-Xylene	0.174	0.004	"	0.200	ND	87.1	46.5-137	9.26	19.2	
o-Xylene	0.090	0.002	"	0.100	ND	90.3	54.2-134	9.85	17.9	
Surrogate: 1,2-Dichloroethane-d4	55		ug/kg	62.5		87.7	70-130			
Surrogate: Toluene-d8	61		"	62.5		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H05006 - EPA 3580

Blank (5H05006-BLK1)

Prepared: 08/05/2015 Analyzed: 08/05/2015

Gasoline (C6-C10)	ND	50	mg/kg							
Diesel (C10-C28)	ND	50	"							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	41.1		"	50.0		82.3	65-146			

LCS (5H05006-BS1)

Prepared: 08/05/2015 Analyzed: 08/05/2015

Gasoline (C6-C10)	840	50	mg/kg	1000		84.1	66.7-119			
Diesel (C10-C28)	760	50	"	1000		76.2	70.1-127			
Residual Range Organics (C28-C36)	900	200	"	1000		90.0	54.5-139			
Surrogate: o-Terphenyl	43.2		"	50.0		86.4	65-146			

Matrix Spike (5H05006-MS1)

Source: X508026-11

Prepared: 08/05/2015 Analyzed: 08/05/2015

Gasoline (C6-C10)	850	50	mg/kg	1000	45	80.4	56.4-132			
Diesel (C10-C28)	790	50	"	1000	13	78.9	57.4-138			
Residual Range Organics (C28-C36)	1000	200	"	1000	ND	99.6	47.7-129			
Surrogate: o-Terphenyl	33.9		"	50.0		67.9	65-146			

Matrix Spike Dup (5H05006-MSD1)

Source: X508026-11

Prepared: 08/05/2015 Analyzed: 08/05/2015

Gasoline (C6-C10)	860	50	mg/kg	1000	45	81.8	56.4-132	1.60	22	
Diesel (C10-C28)	810	50	"	1000	13	81.4	57.4-138	3.11	18.3	
Residual Range Organics (C28-C36)	1000	200	"	1000	ND	102	47.7-129	1.95	30.1	
Surrogate: o-Terphenyl	34.6		"	50.0		69.2	65-146			

Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Notes and Definitions


S-DUP Duplicate analysis confirmed surrogate failure due to matrix effects.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



August 06, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Clack Olson

Project Number - [none]

Attached are your analytical results for KMG - Clack Olson received by Origins Laboratory, Inc. August 05, 2015. This project is associated with Origins project number X508039-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	X508039-01	Water	August 5, 2015 10:00	08/05/2015 15:40
MW02	X508039-02	Water	August 5, 2015 10:20	08/05/2015 15:40
MW03	X508039-03	Water	August 5, 2015 10:40	08/05/2015 15:40
MW04	X508039-04	Water	August 5, 2015 11:00	08/05/2015 15:40
MW05	X508039-05	Water	August 5, 2015 11:20	08/05/2015 15:40
MW06	X508039-06	Water	August 5, 2015 11:40	08/05/2015 15:40
MW07	X508039-07	Water	August 5, 2015 12:00	08/05/2015 15:40

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

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page 1 of 1

Project Manager: John Cocroft
Project Name: Clack Olson
Project Number: 1714
Samples Collected By: John TB14

Client: LTE
Address: 4600 W 60th Ave
Arvada CO 80003
Telephone Number: 303-433-9785
Email Address: J.Cocroft@originslab.com

XS08039

ORIGINS
LABORATORY, INC

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Sampling & Other		
MW01	8/5/15	1000	3	X				X				1
MW02		1020	3	X				X				2
MW03		1050	3	X				X				3
MW04		1100	3	X				X				4
MW05		1120	3	X				X				5
MW06		1140	3	X				X				6
MW07		1200	3	X				X				7
												8
												9
												10
Relinquished By: [Signature]	Date: 8/5/15	Time: 1540										Turnaround Time: Same Day X 24 Hr 48 Hr 72 Hr Standard
Relinquished By: [Signature]	Date: 8/6/15	Time: 1540										

Date Report Received: 8/6/15 0800

Temp Received: [Signature]

Origins Laboratory, Inc.

Jefe Pellegrini

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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Origins Laboratory

F-012207-01-R1
Effective Date 01/09/12

Sample Receipt Checklist

Origins Work Order XS08039

Client LT

Client Project ID Clack Olson

Checklist Completed by Jeff Smith

Shipped Via HL

Date/time completed 8/5/13

(UPS FedEx Hand Delivered Pick-up, etc.)

Airbill # N/A

Matrix(s) Received (Check all that apply) Soil/Solid ☒ Water ☐ Other ☐ (Describe)

Cooler Number/Temperature 1 15.6 °C 1 °C 1 °C 1 °C

Thermometer ID T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0 °C to ≤ 5 °C?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked? (note ID of confirmation instrument used in comments) / preservation is not confirmed for subcontracted analyses in order to insure sample integrity/pH < 2 for samples preserved with HNO ₃ /HCL / H ₂ SO ₄ / (pH > 10 for samples preserved with NaAsO ₂ /NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

*** If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Jeff Smith
Reviewed by (Project Manager)

8/5/13
Date/Time Reviewed

Origins Laboratory, Inc.

Jeff Pellegrini

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW01

8/5/2015 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X508039-01 (Water)

BTEX by EPA 8260C

Benzene	17.8	4.0	ug/L	4	5H04006	08/05/2015	08/05/2015	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	
Xylenes, total	16.4	4.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.1 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.6 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW02

8/5/2015 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508039-02 (Water)

BTEX by EPA 8260C

Benzene	ND	4.0	ug/L	4	5H04006	08/05/2015	08/05/2015	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	
Xylenes, total	ND	4.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.5 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.6 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW03

8/5/2015 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X508039-03 (Water)

BTEX by EPA 8260C

Benzene	ND	4.0	ug/L	4	5H04006	08/05/2015	08/05/2015	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	
Xylenes, total	ND	4.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.8 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.1 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW04

8/5/2015 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508039-04 (Water)

BTEX by EPA 8260C

Benzene	54.6	4.0	ug/L	4	5H04006	08/05/2015	08/05/2015	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	6.3	4.0	"	"	"	"	"	
Xylenes, total	ND	4.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.8 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW05

8/5/2015 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X508039-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5H04006	08/05/2015	08/05/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.5 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW06

8/5/2015 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X508039-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5H04006	08/05/2015	08/05/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"
Surrogate: Toluene-d8	98.4 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	98.4 %	84-114			"	"	"

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW07

8/5/2015 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508039-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5H04006	08/05/2015	08/05/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	
Surrogate: Toluene-d8	97.2 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.0 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

Blank (5H04006-BLK1)

Prepared: 08/04/2015 Analyzed: 08/05/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	60		"	62.5		96.3	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

Blank (5H04006-BLK2)

Prepared: 08/04/2015 Analyzed: 08/05/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.2	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

LCS (5H04006-BS1)

Prepared: 08/04/2015 Analyzed: 08/05/2015

Benzene	47.6	1.0	ug/L	50.0		95.1	75-126			
Toluene	46.3	1.0	"	50.0		92.6	78.7-126			
Ethylbenzene	48.2	1.0	"	50.0		96.4	80-130			
m,p-Xylene	96.1	2.0	"	100		96.1	77.2-133			
o-Xylene	48.0	1.0	"	50.0		96.0	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.3	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.1	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

LCS (5H04006-BS2)

Prepared: 08/04/2015 Analyzed: 08/05/2015

Benzene	46.0	1.0	ug/L	50.0		92.0	75-126			
Toluene	46.0	1.0	"	50.0		92.1	78.7-126			
Ethylbenzene	47.6	1.0	"	50.0		95.2	80-130			
m,p-Xylene	94.8	2.0	"	100		94.8	77.2-133			
o-Xylene	47.5	1.0	"	50.0		95.0	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.6	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

Matrix Spike (5H04006-MS1)		Source: X508001-03			Prepared: 08/04/2015 Analyzed: 08/05/2015					
Benzene	52.8	1.0	ug/L	50.0	ND	106	74-130			
Toluene	47.8	1.0	"	50.0	ND	95.7	73-131			
Ethylbenzene	50.3	1.0	"	50.0	ND	101	76-132			
m,p-Xylene	101	2.0	"	100	ND	101	69-139			
o-Xylene	49.5	1.0	"	50.0	ND	99.0	74-131			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.8	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.8	84-114			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

Matrix Spike (5H04006-MS2)		Source: X508001-04			Prepared: 08/04/2015 Analyzed: 08/05/2015					
Benzene	49.1	1.0	ug/L	50.0	ND	98.2	74-130			
Toluene	48.2	1.0	"	50.0	ND	96.5	73-131			
Ethylbenzene	50.2	1.0	"	50.0	ND	100	76-132			
m,p-Xylene	99.8	2.0	"	100	ND	99.8	69-139			
o-Xylene	49.7	1.0	"	50.0	ND	99.3	74-131			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.8	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

Matrix Spike Dup (5H04006-MSD1)		Source: X508001-03			Prepared: 08/04/2015 Analyzed: 08/05/2015					
Benzene	57.0	1.0	ug/L	50.0	ND	114	74-130	7.66	20	
Toluene	50.7	1.0	"	50.0	ND	101	73-131	5.76	20	
Ethylbenzene	52.8	1.0	"	50.0	ND	106	76-132	4.85	20	
m,p-Xylene	105	2.0	"	100	ND	105	69-139	4.76	20	
o-Xylene	52.1	1.0	"	50.0	ND	104	74-131	5.19	20	
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		105	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.0	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H04006 - EPA 5030B (Water)

Matrix Spike Dup (5H04006-MSD2)		Source: X508001-04			Prepared: 08/04/2015 Analyzed: 08/05/2015					
Benzene	50.6	1.0	ug/L	50.0	ND	101	74-130	2.97	20	
Toluene	49.6	1.0	"	50.0	ND	99.2	73-131	2.72	20	
Ethylbenzene	51.6	1.0	"	50.0	ND	103	76-132	2.73	20	
m,p-Xylene	102	2.0	"	100	ND	102	69-139	2.49	20	
o-Xylene	51.1	1.0	"	50.0	ND	102	74-131	2.80	20	
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		103	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.2	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



August 12, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Clack 1-2A, Olson 2-2

Project Number - 014213044

Attached are your analytical results for KMG - Clack 1-2A, Olson 2-2 received by Origins Laboratory, Inc. August 06, 2015. This project is associated with Origins project number X508062-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB08@1'	X508062-01	Soil	August 6, 2015 13:25	08/06/2015 16:00
SB08@3'	X508062-02	Soil	August 6, 2015 13:35	08/06/2015 16:00

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

ORIGINS

LABORATORY INC

1508062

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page 1 of 1

Client: LTE
Address: 4000 W 140th Ave

Project Manager: TJ Van Curen
Project Name: CHINA - 2002-2003
Project Number: 01423004
Samples Collected By: John J. Jansky

Telephone Number: 313-482-0808
Email Address: l.jansky@originslab.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions		
				Organic Acid	HCl	HNO ₃	Other	Groundwater	Soil	Air Sample				
SB-001	8/10/05	12:5	1	X				X			Other	Submit TAT		
SB-003	8/10/05	1:50	1	X				X			Other	Submit TAT		
													1	Submit TAT
													2	Submit TAT
													3	Submit TAT
													4	Submit TAT
													5	Submit TAT
													6	Submit TAT
													7	Submit TAT
													8	Submit TAT
													9	Submit TAT
													10	Submit TAT
Relinquished By: <u>[Signature]</u>	Date: <u>8/10/05</u>	Time: <u>1440</u>	Received By: <u>[Signature]</u>	Date: <u>8/10/05</u>	Time: <u>1440</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>								
Relinquished By: <u>[Signature]</u>	Date: <u>8/10/05</u>	Time: <u>1600</u>	Received By: <u>[Signature]</u>	Date: <u>8/10/05</u>	Time: <u>1600</u>									

Date Results Needed

Origins Laboratory, Inc.

Jeff Pelligrini

Jen Pellegrini For Noelle Doyle Mathis, President

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Origins Laboratory

F-012207-01-R1
Effective Date 01/09/12

Sample Receipt Checklist

Origins Work Order 1508062

Client: LT Environmental

Client Project ID KMG Clack 1-2A Olson 2-2

Checklist Completed by J. Pellegrini

Shipped Via H/D

Date/time completed 8/7/15 10:22

(UPS FedEx Hand Delivered Pick-up, etc.)

Airbill # 105

Matrix(s) Received (Check all that apply) ☒ Soil/Solid ☐ Water ☐ Other ☐ (Describe)

Cooler Number/Temperature 1 500 °C 1 °C 1 °C 1 °C

Thermometer ID 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0 °C to ≤ 5 °C?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> 1/4 inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity/pH < 2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 12 for samples preserved with NaOH/CO2+NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) J. Pellegrini

Date/Time Reviewed 8/10/15

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB08@1'

8/6/2015 1:25:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508062-01 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5H10008	08/10/2015	08/10/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130	"	"	"
Surrogate: Toluene-d8	93.6 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130	"	"	"

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	8.4	25	mg/kg	1	5H10006	08/10/2015	08/11/2015
Diesel (C10-C28)	11	6.5	25	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	2.3	100	"	"	"	"	"

Surrogate: o-Terphenyl	148 %	65-146	"	"	"	S-07
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Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

SB08@3'

8/6/2015 1:35:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508062-02 (Soil)

BTEX by EPA 8260C

Benzene	ND		0.002	mg/kg	1	5H10008	08/10/2015	08/10/2015	
Toluene	ND		0.002	"	"	"	"	"	
Ethylbenzene	ND		0.002	"	"	"	"	"	
Xylenes, total	ND		0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	95.2 %		70-130			"	"	"	
Surrogate: Toluene-d8	93.6 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	8.4	25	mg/kg	1	5H10006	08/10/2015	08/10/2015	
Diesel (C10-C28)	12	6.5	25	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	2.3	100	"	"	"	"	"	

Surrogate: o-Terphenyl	82.0 %		65-146			"	"	"	
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Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H10008 - EPA 5030 (soil)

Blank (5H10008-BLK1)

Prepared: 08/10/2015 Analyzed: 08/10/2015

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.6	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.2	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.0	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H10008 - EPA 5030 (soil)

LCS (5H10008-BS1)

Prepared: 08/10/2015 Analyzed: 08/10/2015

Benzene	0.096	0.002	mg/kg	0.100		96.2	77.1-124			
Toluene	0.088	0.002	"	0.100		87.5	74.5-128			
Ethylbenzene	0.084	0.002	"	0.100		84.3	66.4-127			
m,p-Xylene	0.164	0.004	"	0.200		82.0	76.6-124			
o-Xylene	0.084	0.002	"	0.100		84.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		90.8	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.1	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.3	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H10008 - EPA 5030 (soil)

Matrix Spike (5H10008-MS1)		Source: X508062-01			Prepared: 08/10/2015 Analyzed: 08/10/2015					
Benzene	0.070	0.002	mg/kg	0.100	ND	70.1	71.8-126			QM-07
Toluene	0.061	0.002	"	0.100	ND	61.0	65.1-130			QM-07
Ethylbenzene	0.058	0.002	"	0.100	ND	57.9	62.2-130			QM-07
m,p-Xylene	0.112	0.004	"	0.200	ND	56.1	46.5-137			
o-Xylene	0.057	0.002	"	0.100	ND	56.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		95.7	70-130			
Surrogate: Toluene-d8	58		"	62.5		92.4	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H10008 - EPA 5030 (soil)

Matrix Spike Dup (5H10008-MSD1)		Source: X508062-01			Prepared: 08/10/2015 Analyzed: 08/10/2015					
Benzene	0.087	0.002	mg/kg	0.100	ND	87.0	71.8-126	21.5	11.3	QR-03
Toluene	0.077	0.002	"	0.100	ND	76.7	65.1-130	22.7	15.4	QR-03
Ethylbenzene	0.073	0.002	"	0.100	ND	73.2	62.2-130	23.3	19.6	QR-03
m,p-Xylene	0.141	0.004	"	0.200	ND	70.6	46.5-137	22.9	19.2	QR-03
o-Xylene	0.072	0.002	"	0.100	ND	71.6	54.2-134	23.1	17.9	QR-03
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		95.5	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H10006 - EPA 3580

Blank (5H10006-BLK1)

Prepared: 08/10/2015 Analyzed: 08/10/2015

Gasoline (C6-C10)	ND	50	mg/kg							
Diesel (C10-C28)	23	50	"							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	44.5		"	50.0		89.1	65-146			

LCS (5H10006-BS1)

Prepared: 08/10/2015 Analyzed: 08/10/2015

Gasoline (C6-C10)	840	50	mg/kg	1000		84.4	66.7-119			
Diesel (C10-C28)	770	50	"	1000		77.4	70.1-127			
Residual Range Organics (C28-C36)	910	200	"	1000		90.9	54.5-139			
Surrogate: o-Terphenyl	43.0		"	50.0		86.0	65-146			

Matrix Spike (5H10006-MS1)

Source: X508077-01

Prepared: 08/10/2015 Analyzed: 08/10/2015

Gasoline (C6-C10)	780	50	mg/kg	1000	ND	77.7	56.4-132			
Diesel (C10-C28)	700	50	"	1000	42	65.8	57.4-138			
Residual Range Organics (C28-C36)	910	200	"	1000	130	77.9	47.7-129			
Surrogate: o-Terphenyl	32.3		"	50.0		64.7	65-146			S-MS

Matrix Spike Dup (5H10006-MSD1)

Source: X508077-01

Prepared: 08/10/2015 Analyzed: 08/10/2015

Gasoline (C6-C10)	930	50	mg/kg	1000	ND	93.1	56.4-132	18.1	22	
Diesel (C10-C28)	810	50	"	1000	42	76.9	57.4-138	14.6	18.3	
Residual Range Organics (C28-C36)	1100	200	"	1000	130	100	47.7-129	21.8	30.1	
Surrogate: o-Terphenyl	26.4		"	50.0		52.9	65-146			S-MS

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213044
Project: KMG - Clack 1-2A, Olson 2-2

Notes and Definitions

- S-MS Surrogate recovery outside of acceptance window confirmed as matrix effect by analysis of MS/MSD on this sample.
- S-07 High surrogate in sample, however sample is non-detect. High surrogate indicates result values are biased high.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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



August 21, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Clack Olson

Project Number - [none]

Attached are your analytical results for KMG - Clack Olson received by Origins Laboratory, Inc. August 17, 2015. This project is associated with Origins project number X508202-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW08	X508202-01	Water	August 17, 2015 10:10	08/17/2015 17:00

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

www.originslaboratory.com

X508202

ORIGINS
LABORATORY, INC

page 1 of 1

Client: LT
Address: 4600 W 60th Ave
Arvada CO 80003
Telephone Number: 303-433-9738
Email Address: Noelle.Mathis@ltc.com

Project Manager: John Cocroft
Project Name: Clack Olson
Project Number:
Samples Collected By: Chris Terry

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air/Surface Contaminant			Other
M208	8/17/15	10:10	3	X				X				BTEX	1
													2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>[Signature]</u>	<u>8/17/15</u>	<u>1700</u>	<u>[Signature]</u>	<u>8/17/15</u>	<u>1700</u>	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 10-15
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

Origins Laboratory, Inc.

Jen Pellegrini

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order **X508202**

Client LTE

Client Project ID Clack Olson

Checklist Completed by: J. Pellegrini

Shipped Via HIP

Date/time completed 8/18/15

(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill # N/A

Matrix(s) Received: (Check all that apply) Soil/Solid ☒ Water ☐ Other ☐ (Describe)

Cooler Number/Temperature: 1 15.3 °C 1 °C 1 °C 1 °C

Thermometer ID 7003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 5°C ^{1,2} ?		<input checked="" type="checkbox"/>		<u>sampled same day</u>
Is there ice present (document if blue ice is used)?	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ^{1,2} ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{1,2} ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{1,2} ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{1,2} ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{1,2} ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{1,2} ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{1,2} ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> 1/4 inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ^{1,2} ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO ₃ , HCl, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ •NaOH, ZnAc•NaOH)	<input checked="" type="checkbox"/>			<u>Yes</u>
Additional Comments (if any):				

^{1,2}If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

J. Pellegrini
Reviewed by (Project Manager)

8/18/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

MW08

8/17/2015 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X508202-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5H18011	08/18/2015	08/18/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	93.2 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.6 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: [none]
Project: KMG - Clack Olson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H18011 - EPA 5030B (Water)

Blank (5H18011-BLK1)

Prepared: 08/18/2015 Analyzed: 08/18/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.4	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.0	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	84-114			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H18011 - EPA 5030B (Water)

LCS (5H18011-BS1)

Prepared: 08/18/2015 Analyzed: 08/18/2015

Benzene	49.2	1.0	ug/L	50.0		98.4	75-126			
Toluene	50.4	1.0	"	50.0		101	78.7-126			
Ethylbenzene	48.3	1.0	"	50.0		96.6	80-130			
m,p-Xylene	96.7	2.0	"	100		96.7	77.2-133			
o-Xylene	50.0	1.0	"	50.0		100	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.0	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.7	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	84-114			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H18011 - EPA 5030B (Water)

Matrix Spike (5H18011-MS1)		Source: X508180-01			Prepared: 08/18/2015 Analyzed: 08/18/2015					
Benzene	53.3	1.0	ug/L	50.0	ND	107	74-130			
Toluene	53.8	1.0	"	50.0	ND	108	73-131			
Ethylbenzene	51.8	1.0	"	50.0	0.9	102	76-132			
m,p-Xylene	103	2.0	"	100	ND	103	69-139			
o-Xylene	53.8	1.0	"	50.0	ND	108	74-131			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.1	84-121			
Surrogate: Toluene-d8	66		"	62.5		106	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

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Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5H18011 - EPA 5030B (Water)

Matrix Spike Dup (5H18011-MSD1)		Source: X508180-01			Prepared: 08/18/2015 Analyzed: 08/18/2015					
Benzene	50.0	1.0	ug/L	50.0	ND	99.9	74-130	6.47	20	
Toluene	51.8	1.0	"	50.0	ND	104	73-131	3.82	20	
Ethylbenzene	49.8	1.0	"	50.0	0.9	97.8	76-132	3.86	20	
m,p-Xylene	96.6	2.0	"	100	ND	96.6	69-139	5.96	20	
o-Xylene	49.6	1.0	"	50.0	ND	99.2	74-131	8.09	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.3	84-121			
Surrogate: Toluene-d8	67		"	62.5		108	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	84-114			

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Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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