



May 18, 2015

Mr. Sam LaRue
Senior HSE Representative
Kerr-McGee Oil & Gas Onshore LP
501 N. Division Blvd
Platteville, CO 80651

Re: Sump Excavation Letter Report
UPRC – 63N66W/5SENW
Location ID # 336632
SENW 5-T3N-R66W
Remediation Project #8961

Dear Mr. LaRue:

LT Environmental, Inc. (LTE) was contracted by Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee) to perform environmental oversight activities at the above referenced site. The oversight activities included collection of confirmation soil and groundwater samples from the sump excavation, documentation of field activities, and laboratory analytical results review. In addition to the information provided below, Kerr-McGee has submitted a Form 19 – Spill/ Release Report (Initial) to the Colorado Oil and Gas Conservation Commission (COGCC) on April 20, 2015.

The objective of the soil and groundwater sampling was to determine if petroleum hydrocarbon impacts to subsurface soil and groundwater resulted from Kerr-McGee operating a produced water sump at the site. The soil and groundwater sampling activities, laboratory analytical results, and conclusions are summarized below. The general site layout, sump excavation dimensions, and soil and groundwater sample locations are displayed on the attached hand-sketched map.

After removing the produced water sump, four representative confirmation soil samples (N01@4', E01@4', S01@4', and W01@4') were collected from the sidewalls of the excavation. While performing field screening activities, LTE personnel observed soil staining and odor in confirmation soil sample E01@4'. The soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260C, total petroleum hydrocarbons (TPH) by USEPA Method 8015C, pH by USEPA Method 9045D, and specific conductance (EC) by USEPA Method 9050A. Laboratory analytical results for the confirmation soil samples (N01@4', E01@4', S01@4', and W01@4') indicated that TPH, BTEX, pH, and EC levels were less than or within COGCC Table



910-1 allowable levels. The laboratory analytical results are summarized in Table 1 and the laboratory analytical report is attached.

During excavation and sump removal activities, groundwater was encountered in the excavation extent at approximately 5 feet below ground surface (bgs). On April 16, 2015, a representative groundwater sample (GW01) was collected and submitted for laboratory analysis of BTEX by USEPA Method 8260C. While performing excavation groundwater sampling activities, LTE personnel observed a sheen on excavation groundwater sample GW01. Laboratory analytical results for excavation groundwater sample GW01 indicated that the benzene concentration of 5.2 micrograms per liter ($\mu\text{g/L}$) exceeded the Colorado Groundwater Quality Standards (CGWQS) of 5.0 $\mu\text{g/L}$. On April 27, 2015, following the removal of standing groundwater from the excavation extent and the excavation of impacted soils, a second excavation groundwater sample (GW02) was collected after groundwater was allowed to recharge. Laboratory analytical results for excavation groundwater sample GW02 indicated that the benzene concentration of 1.0 $\mu\text{g/L}$ was less than the CGWQS for benzene. The laboratory analytical results are summarized in Table 2 and the laboratory analytical reports are attached.

The final sump excavation measured approximately 15 feet north to south by 15 feet east to west to an approximate depth of 5 feet bgs. Approximately 20 cubic yards of impacted soil were removed and transported to a licensed disposal facility. The produced water sump and facility was deconstructed and decommissioned.

Please contact LTE at (303) 433-9788 if you have any questions regarding this Sump Excavation Letter Report or if you require additional information.

Sincerely,
LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "R. ZERNIS". The signature is stylized with a large, looped "R" and the name "ZERNIS" written in a smaller, more straightforward font.

Ryan Zernis
Staff Geologist

Reviewed by

A handwritten signature in blue ink that reads "Michael J. Furtaw". The signature is written in a cursive, flowing style.

Michael J. Furtaw, P.G.
Project Geologist

Attachments



PROJECT UPRC - 63N66W / 55ENW
PROJECT MANAGER JOHN COCROFT
JOB No. 0142 15102
LOCATION SE NW - SEC 5 T3N 66W 6PM

DATE 4/29/15

CONT. No.

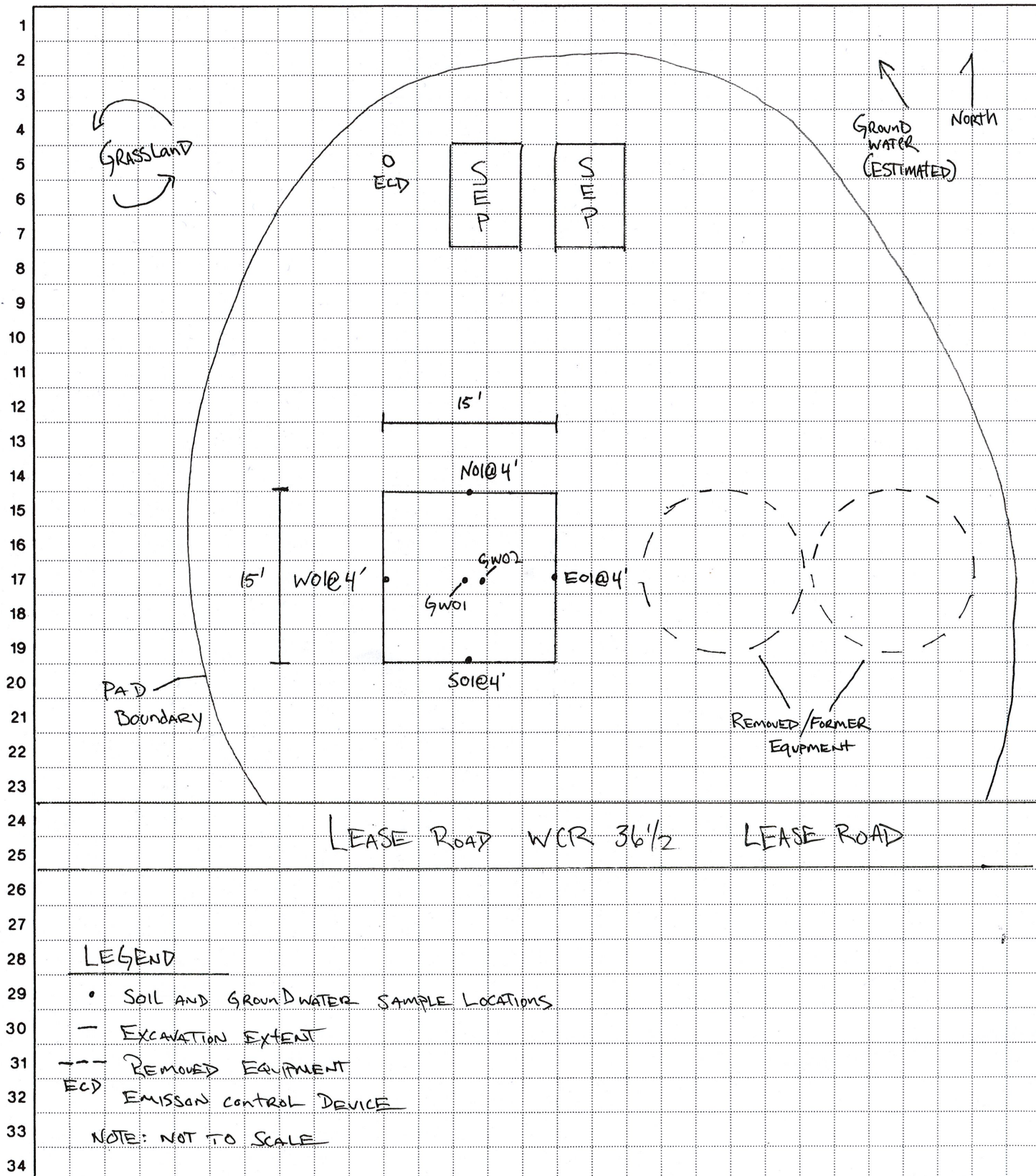
BY KS/RZ

CHK'D

SHEET No. 1

OF 1

95L T0038 10/1997



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
UPRC-63N66W/5SENW
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)
E01 @ 4'	4'	04/16/2015	<0.002	<0.002	<0.002	<0.002	<50	<50	<200
N01 @ 4'	4'	04/16/2015	<0.002	<0.002	<0.002	<0.002	<50	<50	<200
S01 @ 4'	4'	04/16/2015	0.003	0.016	<0.002	0.024	<50	<50	<200
W01 @ 4'	4'	04/16/2015	<0.002	<0.002	<0.002	<0.002	<50	<50	<200
COGCC Standards			0.17	85	100	175	500*	500*	500*

Notes: bgs - below ground surface

< - less than laboratory reporting limit

DRO - Diesel Range Organics

ORO - Oil Range Organics

GRO - Gasoline Range Organics

* - Standard applies to combined DRO-GRO-ORO

COGCC - Colorado Oil and Gas Conservation Commission

mg/kg - milligrams per kilogram

NA - Not Analyzed/Not Available

Bold numbers indicate result equaled or exceeded standard.



TABLE 2
GROUNDWATER ANALYTICAL AND FIELD RESULTS
UPRC-63N66W/5SENW
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth Water/ (Product Thickness) (ft bgs)
GW01	04/16/2015	5.2	16.1	3.9	9.3	5.00
GW02	04/27/2015	1.0	1.6	<1.0	4.3	5.00
CGWQS		5	1000	700	1400	

Notes: ug/L - micrograms per Liter

ft bgs - feet below ground surface

Bold numbers indicate result exceeded standard.

< - less than laboratory reporting limit

NA - Not Analyzed/Not Available

NM - Not Measured

CGWQS - Colorado Groundwater Quality Standards

Excavation groundwater depth is approximate





April 29, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - UPRC-63N66W/5SENW

Project Number - 014215102

Attached are your analytical results for KMG - UPRC-63N66W/5SENW received by Origins Laboratory, Inc. April 16, 2015. This project is associated with Origins project number X504208-01.

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: 014215102
Project: KMG - UPRC-63N66W/5SEW

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01 @ 4'	X504208-01	Soil	April 16, 2015 15:25	04/16/2015 18:00
E01 @ 4'	X504208-02	Soil	April 16, 2015 15:30	04/16/2015 18:00
S01 @ 4'	X504208-03	Soil	April 16, 2015 15:35	04/16/2015 18:00
W01 @ 4'	X504208-04	Soil	April 16, 2015 15:40	04/16/2015 18:00
GW01	X504208-05	Water	April 16, 2015 15:45	04/16/2015 18:00

Kelly too samples 01,03, and 05 off hold for same day analysis on 04/17/15.

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: 014215102
Project: KMG - UPRC-63N66W/5SENW

www.originslaboratory.com

page 1 of 1

X504208

ORIGINS
LABORATORY, INC

Client: LTE
Address: 4600 W 60th Ave
Telephone Number: (303) 433-9788
Email Address: Jcocroft@ltuv.com

Project Manager: J. Cocroft
Project Name: UPRC 5-3K
Project Number: 014215102
Samples Collected By: Kris Shepherd

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions		
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other	TPH	PH	ETC		SAR	
N0104'	4/16/15	15:25	2	X					X				X	X	X	Hold all	1
E0104'		15:30	2	X					X				X	X	X	Run (add SAR)	2
S0104'		15:35	2	X					X				X	X	X	Hold all	3
W0104'		15:40	2	X					X				X	X	X	Hold all	4
G2001		15:45	3	X				X					X			Run BTEX	5
																	6
																	7
																	8
																	9
																	10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>[Signature]</i>	4/16/15	1710	<i>[Signature]</i>	4/16/15	1710	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/>
<i>[Signature]</i>	4/16/15	1800	<i>[Signature]</i>	4/16/15	1800	48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

Date Results Needed 4/17/15 (0800)

Temp Received: 3.4

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: 014215102
Project: KMG - UPRC-63N66W/5SENV

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XSCM208

Client: LTE

Client Project ID: UPRC 5-3K

Checklist Completed by: Jeff Smith

Shipped Via: HTD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/16/15

Airbill #: NSA

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

Cooler Number/Temperature: 1 / 3.4 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: 7253

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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"/>	<u>WIKES</u> <input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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>WIKES</u> <input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾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.

JP
Reviewed by (Project Manager)

4/16/15
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: 014215102

Project: KMG - UPRC-63N66W/5SENW

N01 @ 4'

4/16/2015 3:25:00PM

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

Origins Laboratory, Inc.

X504208-01 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5D17005	04/17/2015	04/17/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4

105 %

70-130

"

"

"

Surrogate: Toluene-d8

97.9 %

70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

103 %

70-130

"

"

"

pH in Soil by EPA 9045D

pH	8.69		pH Units	1	5D17007	04/17/2015	04/17/2015
----	------	--	----------	---	---------	------------	------------

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0730		mmhos/cm	"	5D17008	04/17/2015	"
---------------------------	--------	--	----------	---	---------	------------	---

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	50	mg/kg	1	5D17006	04/17/2015	04/17/2015
Diesel (C10-C28)	ND	50	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl

98.8 %

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: 014215102
Project: KMG - UPRC-63N66W/5SENW

E01 @ 4'
4/16/2015 3:30:00PM

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

Origins Laboratory, Inc.
X504208-02 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5D16012	04/16/2015	04/16/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"
Surrogate: Toluene-d8	97.9 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	8.37		pH Units	1	5D16010	04/16/2015	04/16/2015
----	------	--	----------	---	---------	------------	------------

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0980		mmhos/cm	"	5D16011	"	"
---------------------------	--------	--	----------	---	---------	---	---

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	50	mg/kg	1	5D16009	04/16/2015	04/16/2015
Diesel (C10-C28)	ND	50	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	113 %	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: 014215102
Project: KMG - UPRC-63N66W/5SENV

S01 @ 4'
4/16/2015 3:35:00PM

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

Origins Laboratory, Inc.
X504208-03 (Soil)

BTEX by EPA 8260C

Benzene	0.003	0.002	mg/kg	1	5D17005	04/17/2015	04/17/2015
Toluene	0.016	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	0.024	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"
Surrogate: Toluene-d8	97.9 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	9.30		pH Units	1	5D17007	04/17/2015	04/17/2015
----	------	--	----------	---	---------	------------	------------

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0852		mmhos/cm	"	5D17008	04/17/2015	"
---------------------------	--------	--	----------	---	---------	------------	---

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	50	mg/kg	1	5D17006	04/17/2015	04/17/2015
Diesel (C10-C28)	ND	50	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	99.6 %	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: 014215102

Project: KMG - UPRC-63N66W/5SENW

W01 @ 4'

4/16/2015 3:40:00PM

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

Origins Laboratory, Inc.

X504208-04 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.002	mg/kg	1	5D17005	04/17/2015	04/17/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4

106 %

70-130

"

"

"

Surrogate: Toluene-d8

98.8 %

70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

103 %

70-130

"

"

"

pH in Soil by EPA 9045D

pH	8.56		pH Units	1	5D17007	04/17/2015	04/17/2015
----	------	--	----------	---	---------	------------	------------

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0675		mmhos/cm	"	5D17008	04/17/2015	"
---------------------------	--------	--	----------	---	---------	------------	---

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	50	mg/kg	1	5D17006	04/17/2015	04/17/2015
Diesel (C10-C28)	ND	50	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl

95.3 %

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: 014215102
Project: KMG - UPRC-63N66W/5SENV

GW01

4/16/2015 3:45:00PM

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

Origins Laboratory, Inc.
X504208-05 (Water)

BTEX by EPA 8260C

Benzene	5.2	1.0	ug/L	1	5D16008	04/16/2015	04/16/2015
Toluene	16.1	1.0	"	"	"	"	"
Ethylbenzene	3.9	1.0	"	"	"	"	"
Xylenes, total	9.3	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	87.3-113			"	"	"
Surrogate: Toluene-d8	98.2 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	88.6-111			"	"	"

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: 014215102
Project: KMG - UPRC-63N66W/5SEW

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16008 - EPA 5030B (Water)

Blank (5D16008-BLK1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	62		"	625000	0.00998		87.3-113			
Surrogate: Toluene-d8	63		"	625000	0.0100		90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	625000	0.00990		88.6-111			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16008 - EPA 5030B (Water)

LCS (5D16008-BS1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Benzene	49.0	1.0	ug/L	50.0		97.9	75-126			
Toluene	47.8	1.0	"	50.0		95.7	78.7-126			
Ethylbenzene	50.2	1.0	"	50.0		100	80-130			
m,p-Xylene	100	2.0	"	100		100	77.2-133			
o-Xylene	50.2	1.0	"	50.0		100	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	62		"	625000		0.00989	87.3-113			
Surrogate: Toluene-d8	61		"	625000		0.00970	90.9-108			
Surrogate: 4-Bromofluorobenzene	65		"	625000		0.0103	88.6-111			

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: 014215102

Project: KMG - UPRC-63N66W/5SENW

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16008 - EPA 5030B (Water)

Matrix Spike (5D16008-MS1)		Source: X504175-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
Benzene	51.8	1.0	ug/L	50.0	0.3	103	74-130			
Toluene	50.3	1.0	"	50.0	0.4	99.9	73-131			
Ethylbenzene	52.1	1.0	"	50.0	ND	104	76-132			
m,p-Xylene	104	2.0	"	100	ND	104	69-139			
o-Xylene	52.0	1.0	"	50.0	ND	104	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	625000		0.0101	87.3-113			
Surrogate: Toluene-d8	63		"	625000		0.0101	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	625000		0.00989	88.6-111			

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: 014215102

Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16008 - EPA 5030B (Water)

Matrix Spike Dup (5D16008-MSD1)		Source: X504175-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
Benzene	48.7	1.0	ug/L	50.0	0.3	96.7	74-130	6.21	20	
Toluene	46.8	1.0	"	50.0	0.4	92.9	73-131	7.20	20	
Ethylbenzene	48.8	1.0	"	50.0	ND	97.5	76-132	6.64	20	
m,p-Xylene	97.5	2.0	"	100	ND	97.5	69-139	6.65	20	
o-Xylene	47.7	1.0	"	50.0	ND	95.5	74-131	8.48	20	
Surrogate: 1,2-Dichloroethane-d4	63		"	625000		0.0100	87.3-113			
Surrogate: Toluene-d8	61		"	625000		0.00984	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	625000		0.0101	88.6-111			

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: 014215102
Project: KMG - UPRC-63N66W/5SEW

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16012 - EPA 5030 (soil)

Blank (5D16012-BLK1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	74		ug/kg	625000		0.0119	70-130			
Surrogate: Toluene-d8	59		"	625000		0.00949	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	625000		0.00986	70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
Batch 5D16012 - EPA 5030 (soil)										
LCS (5D16012-BS1)					Prepared: 04/16/2015 Analyzed: 04/16/2015					
Benzene	0.082	0.002	mg/kg	0.100		82.0	77.1-124			
Toluene	0.080	0.002	"	0.100		80.1	74.5-128			
Ethylbenzene	0.081	0.002	"	0.100		81.1	66.4-127			
m,p-Xylene	0.163	0.004	"	0.200		81.5	76.6-124			
o-Xylene	0.082	0.002	"	0.100		82.4	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	625000		0.0101	70-130			
Surrogate: Toluene-d8	62		"	625000		0.00997	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	625000		0.0101	70-130			

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: 014215102

Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16012 - EPA 5030 (soil)

Matrix Spike (5D16012-MS1)		Source: X504205-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
Benzene	0.084	0.002	mg/kg	0.100	ND	84.1	71.8-126			
Toluene	0.083	0.002	"	0.100	ND	82.5	65.1-130			
Ethylbenzene	0.084	0.002	"	0.100	ND	84.0	62.2-130			
m,p-Xylene	0.168	0.004	"	0.200	ND	84.1	46.5-137			
o-Xylene	0.084	0.002	"	0.100	ND	84.5	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	625000		0.0101	70-130			
Surrogate: Toluene-d8	62		"	625000		0.00985	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	625000		0.0101	70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SENV

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
Batch 5D16012 - EPA 5030 (soil)										
Matrix Spike Dup (5D16012-MSD1)					Source: X504205-01					Prepared: 04/16/2015 Analyzed: 04/16/2015
Benzene	0.084	0.002	mg/kg	0.100	ND	84.1	71.8-126	0.00	11.3	
Toluene	0.082	0.002	"	0.100	ND	82.1	65.1-130	0.486	15.4	
Ethylbenzene	0.083	0.002	"	0.100	ND	83.4	62.2-130	0.764	19.6	
m,p-Xylene	0.168	0.004	"	0.200	ND	83.8	46.5-137	0.381	19.2	
o-Xylene	0.084	0.002	"	0.100	ND	84.2	54.2-134	0.332	17.9	
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	625000		0.0102	70-130			
Surrogate: Toluene-d8	61		"	625000		0.00981	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	625000		0.0100	70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D17005 - EPA 5030 (soil)

Blank (5D17005-BLK1)

Prepared: 04/17/2015 Analyzed: 04/17/2015

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5	105		70-130			
Surrogate: Toluene-d8	62		"	62.5	98.6		70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102		70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SEW

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
Batch 5D17005 - EPA 5030 (soil)										
LCS (5D17005-BS1)					Prepared: 04/17/2015 Analyzed: 04/17/2015					
Benzene	0.088	0.002	mg/kg	0.100		88.4	77.1-124			
Toluene	0.086	0.002	"	0.100		86.1	74.5-128			
Ethylbenzene	0.087	0.002	"	0.100		86.9	66.4-127			
m,p-Xylene	0.174	0.004	"	0.200		87.1	76.6-124			
o-Xylene	0.088	0.002	"	0.100		88.2	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D17005 - EPA 5030 (soil)

Matrix Spike (5D17005-MS1)		Source: X504208-01			Prepared: 04/17/2015 Analyzed: 04/17/2015					
Benzene	0.089	0.002	mg/kg	0.100	ND	89.2	71.8-126			
Toluene	0.089	0.002	"	0.100	ND	88.9	65.1-130			
Ethylbenzene	0.096	0.002	"	0.100	ND	96.4	62.2-130			
m,p-Xylene	0.193	0.004	"	0.200	ND	96.4	46.5-137			
o-Xylene	0.097	0.002	"	0.100	ND	96.9	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SENV

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D17005 - EPA 5030 (soil)

Matrix Spike Dup (5D17005-MSD1)		Source: X504208-01			Prepared: 04/17/2015 Analyzed: 04/17/2015					
Benzene	0.088	0.002	mg/kg	0.100	ND	87.7	71.8-126	1.67	11.3	
Toluene	0.086	0.002	"	0.100	ND	85.7	65.1-130	3.69	15.4	
Ethylbenzene	0.091	0.002	"	0.100	ND	91.5	62.2-130	5.24	19.6	
m,p-Xylene	0.182	0.004	"	0.200	ND	91.1	46.5-137	5.66	19.2	
o-Xylene	0.092	0.002	"	0.100	ND	91.8	54.2-134	5.42	17.9	
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		103	70-130			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D16009 - EPA 3580

Blank (5D16009-BLK1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Gasoline (C6-C10)	ND	50	mg/kg
Diesel (C10-C28)	ND	50	"
Residual Range Organics (C28-C36)	ND	200	"

Surrogate: o-Terphenyl

51.7

"

50.0

103

65-146

LCS (5D16009-BS1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Gasoline (C6-C10)	930	50	mg/kg	1000	93.3	66.7-119
Diesel (C10-C28)	1100	50	"	1000	107	70.1-127
Residual Range Organics (C28-C36)	870	200	"	1000	87.3	54.5-139

Surrogate: o-Terphenyl

47.2

"

50.0

94.4

65-146

LCS Dup (5D16009-BSD1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Gasoline (C6-C10)	960	50	mg/kg	1000	96.1	66.7-119	2.91	28.2
Diesel (C10-C28)	1100	50	"	1000	114	70.1-127	6.44	19.1
Residual Range Organics (C28-C36)	930	200	"	1000	92.8	54.5-139	6.14	21.2

Surrogate: o-Terphenyl

49.1

"

50.0

98.3

65-146

Batch 5D17006 - EPA 3580

Blank (5D17006-BLK1)

Prepared: 04/17/2015 Analyzed: 04/17/2015

Gasoline (C6-C10)	ND	50	mg/kg
Diesel (C10-C28)	ND	50	"

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: 014215102
Project: KMG - UPRC-63N66W/5SENV

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
Batch 5D17006 - EPA 3580										
Blank (5D17006-BLK1)					Prepared: 04/17/2015 Analyzed: 04/17/2015					
Residual Range Organics (C28-C36)	ND	200	mg/kg							
Surrogate: o-Terphenyl	50.0		"	50.0		100	65-146			
LCS (5D17006-BS1)					Prepared: 04/17/2015 Analyzed: 04/17/2015					
Gasoline (C6-C10)	890	50	mg/kg	1000		89.2	66.7-119			
Diesel (C10-C28)	1100	50	"				70.1-127			
Residual Range Organics (C28-C36)	620	200	"	1000		62.5	54.5-139			
Surrogate: o-Terphenyl	47.0		"	50.0		94.1	65-146			
Matrix Spike (5D17006-MS1)					Source: X504208-01		Prepared: 04/17/2015 Analyzed: 04/17/2015			
Gasoline (C6-C10)	910	50	mg/kg	1000	17	88.9	56.4-132			
Diesel (C10-C28)	1100	50	"		ND		57.4-138			
Residual Range Organics (C28-C36)	640	200	"	1000	ND	63.7	47.7-129			
Surrogate: o-Terphenyl	45.1		"	50.0		90.2	65-146			
Matrix Spike Dup (5D17006-MSD1)					Source: X504208-01		Prepared: 04/17/2015 Analyzed: 04/17/2015			
Gasoline (C6-C10)	920	50	mg/kg	1000	17	90.7	56.4-132	1.96	22	
Diesel (C10-C28)	1100	50	"		ND		57.4-138	2.63	18.3	
Residual Range Organics (C28-C36)	660	200	"	1000	ND	66.1	47.7-129	3.70	30.1	
Surrogate: o-Terphenyl	48.4		"	50.0		96.8	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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5D16010 - NO PREP										
Duplicate (5D16010-DUP1)		Source: X504205-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
pH	7.50		pH Units		7.54			0.532	25	
Batch 5D16011 - NO PREP										
Blank (5D16011-BLK1)		Prepared: 04/16/2015 Analyzed: 04/16/2015								
Specific Conductance (EC)	0.00300		mmhos/cm							
Duplicate (5D16011-DUP1)		Source: X504205-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
Specific Conductance (EC)	0.0905		mmhos/cm		0.0894			1.22	25	
Batch 5D17007 - NO PREP										
Duplicate (5D17007-DUP1)		Source: X504208-03			Prepared: 04/17/2015 Analyzed: 04/17/2015					
pH	9.25		pH Units		9.30			0.539	25	
Batch 5D17008 - NO PREP										
Blank (5D17008-BLK1)		Prepared: 04/17/2015 Analyzed: 04/17/2015								
Specific Conductance (EC)	0.00340		mmhos/cm							
Duplicate (5D17008-DUP1)		Source: X504208-03			Prepared: 04/17/2015 Analyzed: 04/17/2015					
Specific Conductance (EC)	0.0794		mmhos/cm		0.0852			7.05	25	

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: 014215102

Project: KMG - UPRC-63N66W/5SEW

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.



April 29, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - UPRC-63N66W/5SEnw

Project Number - 014215102

Attached are your analytical results for KMG - UPRC-63N66W/5SEnw received by Origins Laboratory, Inc. April 27, 2015. This project is associated with Origins project number X504313-01.

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: 014215102

Project: KMG - UPRC-63N66W/5SEW

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW02	X504313-01	Water	April 27, 2015 10:45	04/27/2015 17:05

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

John Cocroft
Project Number: 014215102
Project: KMG - UPRC-63N66W/5SEnw

ORIGINS

LABORATORY, INC

www.originslaboratory.com

X504313

page 1 of 1

Client: LIE

Address: 4600 W 60th Ave

Aurora CO 8003

Telephone Number: 303-433-9788

Email Address: JGLOFT@Hewlett.com/Spe 1ST

Project Manager: John GLOFT

Project Name: LPRC 5-3K

Project Number: 014215102

Samples Collected By: Chad Tefft

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis			Sample Instructions		
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other					
G-W02	4/27/15	1045	3	X				X				X	87x		1	
															2	
															3	
															4	
															5	
															6	
															7	
															8	
															9	
															10	
Relinquished By: <u>ALZ</u>	Date: 4/27/15	Time: 1700														Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By:	Date:	Time:														

Temp Received: 7.9

Date Results Needed

Origins Laboratory, Inc.

Jeff Pellipini

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: 014215102
Project: KMG - UPRC-63N66W/5SENV

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X504313

Client: LTE

Client Project ID: UPRC 5-3K

Checklist Completed by: Jeff Smith

Shipped Via: PICK UP
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/27/15

Airbill #: PSA

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

Cooler Number/Temperature: 1 12.9 °C 1 °C 1 °C (Describe) 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 ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾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)

4/27/15
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: 014215102
Project: KMG - UPRC-63N66W/5SENV

GW02

4/27/2015 10:45:00AM

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

Origins Laboratory, Inc.
X504313-01 (Water)

BTEX by EPA 8260C

Benzene	1.0	1.0	ug/L	1	5D27012	04/27/2015	04/27/2015
Toluene	1.6	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	4.3	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	107 %	87.3-113			"	"	"
Surrogate: Toluene-d8	100 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	90.5 %	88.6-111			"	"	"

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: 014215102
Project: KMG - UPRC-63N66W/5SEW

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D27012 - EPA 5030B (Water)

Blank (5D27012-BLK1)

Prepared: 04/27/2015 Analyzed: 04/27/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5	107		87.3-113			
Surrogate: Toluene-d8	62		"	62.5	98.9		90.9-108			
Surrogate: 4-Bromofluorobenzene	57		"	62.5	91.7		88.6-111			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D27012 - EPA 5030B (Water)

LCS (5D27012-BS1)

Prepared: 04/27/2015 Analyzed: 04/27/2015

Benzene	53.7	1.0	ug/L	50.0	107	75-126
Toluene	54.9	1.0	"	50.0	110	78.7-126
Ethylbenzene	59.1	1.0	"	50.0	118	80-130
m,p-Xylene	116	2.0	"	100	116	77.2-133
o-Xylene	55.0	1.0	"	50.0	110	77.9-126
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5	99.6	87.3-113
Surrogate: Toluene-d8	62		"	62.5	99.5	90.9-108
Surrogate: 4-Bromofluorobenzene	58		"	62.5	93.0	88.6-111

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D27012 - EPA 5030B (Water)

Matrix Spike (5D27012-MS1)		Source: X504282-01			Prepared: 04/27/2015 Analyzed: 04/27/2015					
Benzene	46.9	1.0	ug/L	50.0	ND	93.9	74-130			
Toluene	48.0	1.0	"	50.0	ND	96.1	73-131			
Ethylbenzene	49.1	1.0	"	50.0	ND	98.2	76-132			
m,p-Xylene	94.8	2.0	"	100	ND	94.8	69-139			
o-Xylene	45.2	1.0	"	50.0	ND	90.5	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.4	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.4	88.6-111			

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: 014215102
Project: KMG - UPRC-63N66W/5SEnw

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5D27012 - EPA 5030B (Water)

Matrix Spike Dup (5D27012-MSD1)		Source: X504282-01			Prepared: 04/27/2015 Analyzed: 04/27/2015					
Benzene	48.2	1.0	ug/L	50.0	ND	96.4	74-130	2.67	20	
Toluene	48.1	1.0	"	50.0	ND	96.2	73-131	0.146	20	
Ethylbenzene	49.7	1.0	"	50.0	ND	99.3	76-132	1.13	20	
m,p-Xylene	97.7	2.0	"	100	ND	97.7	69-139	3.03	20	
o-Xylene	48.4	1.0	"	50.0	ND	96.7	74-131	6.67	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.5	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.9	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		92.8	88.6-111			

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: 014215102

Project: KMG - UPRC-63N66W/5SEW

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