

TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
AUGUST LAMBRECHT GU #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)
GW01	9/8/2017	18.7	18.6	2.28	16.5	4	NA
GW02	9/15/2017	<4.00	<4.00	<4.00	<4.00	4	NA
MW01	8/15/2018	10.8	<1.00	<1.00	<1.00	5.67	94.76
MW02	8/15/2018	<1.00	<1.00	<1.00	<1.00	6.29	91.64
MW03	8/15/2018	<1.00	<1.00	<1.00	<1.00	3.90	94.90
MW04	8/15/2018	<1.00	<1.00	<1.00	<1.00	6.00	92.78
MW05	8/15/2018	<1.00	<1.00	<1.00	<1.00	4.52	93.65
MW06	8/15/2018	<1.00	<1.00	<1.00	<1.00	5.57	91.26
COGCC Allowable Levels		5	1000	700	1400		

Notes: COGCC - Colorado Oil and Gas Conservation Commission
ft bgs - feet below ground surface
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



August 20, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Lambrecht August

Project Number - 014217197

Attached are your analytical results for KMG - Lambrecht August received by Origins Laboratory, Inc. August 15, 2018. This project is associated with Origins project number Y808204-01.

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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y808204-01	Water	August 15, 2018 14:45	08/15/2018 16:20
MW02	Y808204-02	Water	August 15, 2018 14:40	08/15/2018 16:20
MW03	Y808204-03	Water	August 15, 2018 15:00	08/15/2018 16:20
MW04	Y808204-04	Water	August 15, 2018 14:30	08/15/2018 16:20
MW05	Y808204-05	Water	August 15, 2018 15:00	08/15/2018 16:20
MW06	Y808204-06	Water	August 15, 2018 15:15	08/15/2018 16:20

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

www.originslaboratory.com

Y808204

page 1 of 1

ORIGINS
LABORATORY, INC

Client: LT Environmental
Address: 4600 W 60th
Telephone Number: 303.433.9786
Email Address: KMG Team

Project Manager: Brian Sulzberger
Project Name: Lambrecht August
Project Number: 014217197
Samples Collected By: GT/DT

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #			Other
MW01	8/15/18	1445	3	X				X				BTEX	1
MW02		1440	3	X				X					2
MW03		1500	3	X				X					3
MW04		1430	3	X				X					4
MW05		1500	3	X				X					5
MW06		1515	3	X				X					6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
[Signature]	8/15/18	1600	[Signature]	8/15/18	1620	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"/>

Date Results Needed

201

Origins Laboratory, Inc.

Jefe Pellegrini

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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1808204

Client: LTE

Client Project ID: KMG-Lambrecht

Checklist Completed by: JP

Shipped Via: HD

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

Date/time completed: 8/15/18

Airbill #: NA

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

Cooler Number/Temperature: 1 / 20.1 °C 1 / 1 °C 1 / 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"/>		<i>sampled same day</i>
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"/>		
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"/>	
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.

Reviewed by: [Signature] (Project Manager)

8-16-18
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

MW01

8/15/2018 2:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y808204-01 (Water)

BTEX by EPA 8260C

Benzene	10.8	1.00	ug/L	1	B8H1604	JTD	08/16/2018	08/16/2018	
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	90.8 %	84-121	"	"	"
Surrogate: Toluene-d8	94.8 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	93.7 %	84-114	"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

MW02

8/15/2018 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y808204-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8H1604	JTD	08/16/2018	08/16/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	93.9 %	84-121	"	"	"
Surrogate: Toluene-d8	96.1 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	95.0 %	84-114	"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

MW03

8/15/2018 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y808204-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8H1604	JTD	08/16/2018	08/16/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.4 %	84-121	"	"	"
Surrogate: Toluene-d8	97.0 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	93.9 %	84-114	"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

MW04

8/15/2018 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y808204-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8H1604	JTD	08/16/2018	08/16/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.1 %	84-121	"	"	"
Surrogate: Toluene-d8	93.6 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	94.1 %	84-114	"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

MW05

8/15/2018 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y808204-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8H1604	JTD	08/16/2018	08/16/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.3 %	84-121	"	"	"
Surrogate: Toluene-d8	95.5 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	96.0 %	84-114	"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

MW06

8/15/2018 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y808204-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8H1604	JTD	08/16/2018	08/16/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.4 %	84-121	"	"	"
Surrogate: Toluene-d8	95.5 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	93.6 %	84-114	"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

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 B8H1604 - EPA 5030B (Water)

Blank (B8H1604-BLK1)

Prepared: 08/16/2018 Analyzed: 08/16/2018

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.3	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.3	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

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 B8H1604 - EPA 5030B (Water)

LCS (B8H1604-BS1)

Prepared: 08/16/2018 Analyzed: 08/16/2018

Benzene	53.7	1.00	ug/L	50.0	107	73.3-129
Toluene	45.9	1.00	"	50.0	91.7	76.2-123
Ethylbenzene	52.8	1.00	"	50.0	106	73.6-130
m,p-Xylene	99.9	2.00	"	100	99.9	76.1-126
o-Xylene	49.1	1.00	"	50.0	98.2	76.6-124
Surrogate: 1,2-Dichloroethane-d4	54		"	62.5	87.0	84-121
Surrogate: Toluene-d8	61		"	62.5	96.9	85-115
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102	84-114

Origins Laboratory, Inc.



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Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

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 B8H1604 - EPA 5030B (Water)

Matrix Spike (B8H1604-MS1)		Source: Y808205-02			Prepared: 08/16/2018 Analyzed: 08/16/2018					
Benzene	51.3	1.00	ug/L	50.0	ND	103	74-130			
Toluene	44.7	1.00	"	50.0	ND	89.4	73-131			
Ethylbenzene	55.4	1.00	"	50.0	0.090	111	76-132			
m,p-Xylene	105	2.00	"	100	ND	105	69-139			
o-Xylene	51.4	1.00	"	50.0	ND	103	74-131			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.5	84-121			
Surrogate: Toluene-d8	60		"	62.5		96.1	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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Arvada CO 80003

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

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 B8H1604 - EPA 5030B (Water)

Matrix Spike Dup (B8H1604-MSD1)		Source: Y808205-02			Prepared: 08/16/2018 Analyzed: 08/16/2018					
Benzene	50.4	1.00	ug/L	50.0	ND	101	74-130	1.87	20	
Toluene	42.5	1.00	"	50.0	ND	85.0	73-131	5.05	20	
Ethylbenzene	52.6	1.00	"	50.0	0.090	105	76-132	5.15	20	
m,p-Xylene	101	2.00	"	100	ND	101	69-139	3.71	20	
o-Xylene	49.5	1.00	"	50.0	ND	99.0	74-131	3.69	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.3	84-121			
Surrogate: Toluene-d8	59		"	62.5		93.9	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.6	84-114			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014217197
Project: KMG - Lambrecht August

Notes and Definitions

U Sample is Non-Detect.

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.



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