

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
BARTEZ 21-17
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)	pH (su)	Specific Conductance (mmhos/cm)
SS01	Surface	05/07/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	8.00	0.0929
SS02	Surface	05/07/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	7.56	0.330
SS03	Surface	05/07/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	7.99	0.101
SS04	Surface	05/07/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	8.15	0.105
SS05	Surface	05/07/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	9.19	0.147
SS06	Surface	05/07/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	8.57	0.151
B01@4'	4'	05/25/2018	0.226	<0.050	0.207	0.054	84.6	1360	<100	8.51	0.195
B02@4'	4'	05/25/2018	2.65	0.492	4.18	39.7	424	1210	113	9.61 †	0.267
E01@3.5'	3.5'	05/25/2018	<0.050	<0.050	<0.050	<0.050	<25.0	12.3	<100	8.23	0.181
N01@3.5'	3.5'	05/25/2018	<0.050	<0.050	<0.050	<0.050	<25.0	6.59	<100	9.41 †	0.253
N02@3.5'	3.5'	05/25/2018	<0.050	<0.050	<0.050	<0.050	<25.0	40.0	<100	9.18 †	0.398
W01@3.5'	3.5'	05/25/2018	0.005	<0.002	<0.002	<0.002	<25.0	0.773	<100	8.46	0.135
B03@9'	9'	05/30/2018	<0.050	<0.050	<0.050	<0.050	<25.0	<5.00	<100	9.25 †	0.208
B04@9'	9'	05/30/2018	0.003	<0.002	0.002	<0.002	<25.0	0.214	<100	9.07 †	0.259
B05@9'	9'	05/30/2018	<0.050	<0.050	<0.050	<0.050	<25.0	<5.00	<100	9.70 †	0.137
B06@9'	9'	05/30/2018	<0.050	<0.050	<0.050	0.107	<25.0	7.61	<100	8.83	0.171
E02@7'	7'	05/30/2018	<0.050	<0.050	<0.050	<0.050	<25.0	24.5	<100	9.31 †	0.155
E03@7'	7'	05/30/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	8.61	0.121
N03@7'	7'	05/30/2018	0.006	<0.002	0.012	0.008	<25.0	1.63	<100	9.50 †	0.270
N04@7'	7'	05/30/2018	<0.050	<0.050	0.339	0.952	115	140	<100	9.35 †	0.340
S01@7'	7'	05/30/2018	<0.050	<0.050	0.148	<0.050	<25.0	59.0	<100	8.54	0.190
W02@7'	7'	05/30/2018	<0.050	<0.050	<0.050	<0.050	<25.0	24.3	<100	9.36 †	0.373



TABLE 1 (Continued)
SOIL SAMPLE ANALYTICAL RESULTS
BARTEZ 21-17
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)	pH (su)	Specific Conductance (mmhos/cm)
W03@7'	7'	05/30/2018	<0.050	<0.050	0.082	<0.050	105	107	<100	9.61 †	0.119
BG02	Surface	07/11/2018	NA	NA	NA	NA	NA	NA	NA	6.27	NA
SS05@1'	1'	07/24/2018	NA	NA	NA	NA	NA	NA	NA	8.32	NA
COGCC Allowable Levels			0.17	85	100	175	500*	500*	500*	6-9	4

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

mmhos/cm - millimhos per centimeter

NA - not analyzed/not available

ORO - oil range organics

su - standard units

† - Sample was collected at a depth greater than 3 feet bgs

* - Standard applies to combined DRO-GRO-ORO

< - less than laboratory reporting limit

Bold indicates result exceeds allowable level



TABLE 2
SURFACE WATER ANALYTICAL AND FIELD RESULTS
BARTEZ 21-17
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Sample Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)
SW01	05/07/2018	3.71	33.5	9.50	65.0
SW02	05/07/2018	<1.00	6.18	1.24	8.54
SW03	05/07/2018	<1.00	3.18	<1.00	3.52
SW04	05/07/2018	<1.00	2.07	<1.00	2.37

Notes: NA - not analyzed/not available
µg/L - micrograms per liter
< - less than laboratory reporting limit





May 08, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Bartz 21-17

Project Number - 014218100

Attached are your analytical results for KMG - Bartz 21-17 received by Origins Laboratory, Inc. May 07, 2018. This project is associated with Origins project number Y805111-01.

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: 014218100
Project: KMG - Bartz 21-17

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW01	Y805111-01	Water	May 7, 2018 15:25	05/07/2018 17:50
SW02	Y805111-02	Water	May 7, 2018 15:30	05/07/2018 17:50
SW03	Y805111-03	Water	May 7, 2018 15:35	05/07/2018 17:50
SW04	Y805111-04	Water	May 7, 2018 15:40	05/07/2018 17:50
SS01	Y805111-07	Soil	May 7, 2018 0:00	05/07/2018 17:50
SS02	Y805111-08	Soil	May 7, 2018 0:00	05/07/2018 17:50
SS03	Y805111-09	Soil	May 7, 2018 0:00	05/07/2018 17:50
SS04	Y805111-10	Soil	May 7, 2018 0:00	05/07/2018 17:50
SS05	Y805111-11	Soil	May 7, 2018 0:00	05/07/2018 17:50
SS06	Y805111-12	Soil	May 7, 2018 0:00	05/07/2018 17:50

Per the email from Andy on 05-08-18, data for samples AST01 and Inside Containment were not reported.

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.

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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LABORATORY, INC

Y405111

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page 1 of 2

Client: LT Environmental
4600 W 60th Ave
 Address: Arvada CO 80003
 Telephone Number: 303-433-9798
 Email Address: KMG group

Project Manager: B. Sulzberger
 Project Name: Bartez 21-17
 Project Number: 014218100
 Samples Collected By: F.O.T
App Contact: Phil Hamilton

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summnd Canister #		
SW01	5/7/18	1525	3	/				/			BTEX	1
SW02		1530	1	/				/				2
SW03		1535	1	/				/				3
SW04		1540	1	/				/				4
inside containment		1550	1	/				/				5
AST01		1515	1	/				/				6
												7
												8
												9
												10
Relinquished By: <u>John Bitt</u>	Date: <u>5/7/18</u>	Time: <u>1750</u>		Received By: <u>[Signature]</u>	Date: <u>5/7/18</u>	Time: <u>1750</u>		Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard				
Relinquished By:	Date:	Time:		Received By:	Date:	Time:						

Temp Received: 23.3

Date Results Needed

Origins Laboratory, Inc.

Jose Pellegrini

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Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

ORIGINS

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Y805111

page 2 of 2

Client: LT Environmental
 Address: 4600 W. 60th Ave
Arvada, CO 80003
 Telephone Number: 303-433-9788
 Email Address: km6 group

Project Manager: B. Sulzberger
 Project Name: Bartez 21-17
 Project Number: 014218100
 Samples Collected By: F.D.T.
AFC contact: Phil Hamlin

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
5501	5/7/18		2									1
5502			2									2
5503			2									3
5504			2									4
5505			2									5
5506			2									6
B6			2									7
												8
												9
												10
Relinquished By: <u>John D. H.</u>	Date: <u>5/7/18</u>	Time: <u>1750</u>	Received By: <u>[Signature]</u>	Date: <u>5/7/18</u>	Time: <u>1750</u>	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:							

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

Temp Received: 23.3

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y805111

Client: LTE

Client Project ID: KMG - Bartz 21-17

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 5/7/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 23.3 °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 ≤ 6°C ⁽¹⁾ ?		<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⁾ ?	<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 be taken in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

5/7/18
Date/Time Reviewed

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SW01

5/7/2018 3:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805111-01 (Water)

BTEX by EPA 8260C

Benzene	3.71	1.00	ug/L	1	B8E0704	05/07/2018	05/08/2018
Toluene	33.5	1.00	"	"	"	"	"
Ethylbenzene	9.50	1.00	"	"	"	"	"
Xylenes, total	65.0	1.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"
Surrogate: Toluene-d8	100 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SW02

5/7/2018 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y805111-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8E0704	05/07/2018	05/08/2018	U
Toluene	6.18	1.00	"	"	"	"	"	
Ethylbenzene	1.24	1.00	"	"	"	"	"	
Xylenes, total	8.54	1.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SW03

5/7/2018 3:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805111-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8E0704	05/07/2018	05/08/2018	U
Toluene	3.18	1.00	"	"	"	"	"	
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	3.52	1.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SW04

5/7/2018 3:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y805111-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8E0704	05/07/2018	05/08/2018	U
Toluene	2.07	1.00	"	"	"	"	"	
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	2.37	1.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.7 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	84-114			"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS01
5/7/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805111-07 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E0705	05/07/2018	05/07/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 103 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E0703	05/07/2018	05/07/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 95.2 % 70-130 " " "
Surrogate: Toluene-d8 95.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.4 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.00		pH Units	1	B8E0706	05/07/2018	05/07/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0929		mmhos/cm	"	B8E0707	05/07/2018	05/08/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS02
5/7/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805111-08 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E0705	05/07/2018	05/07/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 95.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E0703	05/07/2018	05/07/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 96.2 % 70-130 " " "
Surrogate: Toluene-d8 96.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.9 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.56		pH Units	1	B8E0706	05/07/2018	05/07/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.330		mmhos/cm	"	B8E0707	05/07/2018	05/08/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS03

5/7/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y805111-09 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E0705	05/07/2018	05/07/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 94.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E0703	05/07/2018	05/07/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.3 % 70-130 " " "
Surrogate: Toluene-d8 96.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.3 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.99		pH Units	1	B8E0706	05/07/2018	05/07/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.101		mmhos/cm	"	B8E0707	05/07/2018	05/08/2018	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS04

5/7/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y805111-10 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E0705	05/07/2018	05/07/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 95.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E0703	05/07/2018	05/07/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 95.7 % 70-130 " " "
Surrogate: Toluene-d8 97.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.5 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.15		pH Units	1	B8E0706	05/07/2018	05/07/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.105		mmhos/cm	"	B8E0707	05/07/2018	05/08/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS05

5/7/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y805111-11 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E0705	05/07/2018	05/07/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 92.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E0703	05/07/2018	05/07/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 97.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.19		pH Units	1	B8E0706	05/07/2018	05/07/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.147		mmhos/cm	"	B8E0707	05/07/2018	05/08/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS06
5/7/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805111-12 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E0705	05/07/2018	05/07/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 99.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E0703	05/07/2018	05/07/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 97.7 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.57		pH Units	1	B8E0706	05/07/2018	05/07/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.151		mmhos/cm	"	B8E0707	05/07/2018	05/08/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E0703 - EPA 5030 (soil)										
Blank (B8E0703-BLK1)					Prepared: 05/07/2018 Analyzed: 05/07/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.4	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

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 B8E0703 - EPA 5030 (soil)										
LCS (B8E0703-BS1)					Prepared: 05/07/2018 Analyzed: 05/07/2018					
Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.103	0.002	"	0.100		103	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.107	0.002	"	0.100		107	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17

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 B8E0703 - EPA 5030 (soil)

Matrix Spike (B8E0703-MS2)		Source: Y805097-01			Prepared: 05/07/2018 Analyzed: 05/08/2018					
Benzene	0.083	0.002	mg/kg	0.100	ND	83.3	71.8-126			
Toluene	0.065	0.002	"	0.100	ND	65.1	65.1-130			
Ethylbenzene	0.069	0.002	"	0.100	ND	69.4	62.2-130			
m,p-Xylene	0.130	0.004	"	0.200	ND	65.0	46.5-137			
o-Xylene	0.070	0.002	"	0.100	ND	69.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.2	70-130			
Surrogate: Toluene-d8	51		"	62.5		81.5	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

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 B8E0703 - EPA 5030 (soil)

Matrix Spike Dup (B8E0703-MSD2)		Source: Y805097-01			Prepared: 05/07/2018 Analyzed: 05/07/2018					
Benzene	0.081	0.002	mg/kg	0.100	ND	81.4	71.8-126	2.26	11.3	
Toluene	0.075	0.002	"	0.100	ND	75.1	65.1-130	14.3	15.4	
Ethylbenzene	0.075	0.002	"	0.100	ND	75.4	62.2-130	8.37	19.6	
m,p-Xylene	0.141	0.004	"	0.200	ND	70.6	46.5-137	8.28	19.2	
o-Xylene	0.076	0.002	"	0.100	ND	75.9	54.2-134	8.46	17.9	
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17

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 B8E0704 - EPA 5030B (Water)

Blank (B8E0704-BLK1)

Prepared: 05/07/2018 Analyzed: 05/07/2018

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	62		"	62.5	99.5		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.7		84-114			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17

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 B8E0704 - EPA 5030B (Water)

LCS (B8E0704-BS1)

Prepared: 05/07/2018 Analyzed: 05/07/2018

Benzene	51.8	1.00	ug/L	50.0	104	73.3-129
Toluene	48.6	1.00	"	50.0	97.2	76.2-123
Ethylbenzene	49.5	1.00	"	50.0	99.0	73.6-130
m,p-Xylene	99.5	2.00	"	100	99.5	76.1-126
o-Xylene	51.0	1.00	"	50.0	102	76.6-124
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5	93.0	84-121
Surrogate: Toluene-d8	65		"	62.5	104	85-115
Surrogate: 4-Bromofluorobenzene	62		"	62.5	98.5	84-114

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E0704 - EPA 5030B (Water)

Matrix Spike (B8E0704-MS1)		Source: Y805091-02			Prepared: 05/07/2018 Analyzed: 05/07/2018					
Benzene	58.8	1.00	ug/L	50.0	ND	118	74-130			
Toluene	55.0	1.00	"	50.0	ND	110	73-131			
Ethylbenzene	57.6	1.00	"	50.0	ND	115	76-132			
m,p-Xylene	114	2.00	"	100	0.260	114	69-139			
o-Xylene	57.4	1.00	"	50.0	ND	115	74-131			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.9	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	84-114			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E0704 - EPA 5030B (Water)

Matrix Spike Dup (B8E0704-MSD1)		Source: Y805091-02			Prepared: 05/07/2018 Analyzed: 05/07/2018					
Benzene	56.6	1.00	ug/L	50.0	ND	113	74-130	3.69	20	
Toluene	52.4	1.00	"	50.0	ND	105	73-131	4.90	20	
Ethylbenzene	54.3	1.00	"	50.0	ND	109	76-132	5.77	20	
m,p-Xylene	108	2.00	"	100	0.260	108	69-139	5.59	20	
o-Xylene	55.4	1.00	"	50.0	ND	111	74-131	3.51	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.8	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	84-114			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E0705 - EPA 3580

Blank (B8E0705-BLK1)

Prepared: 05/07/2018 Analyzed: 05/07/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	54		"	50.0		108	59-131			

LCS (B8E0705-BS1)

Prepared: 05/07/2018 Analyzed: 05/07/2018

Diesel (C10-C28)	1140	50.0	mg/kg	1000		114	64-121			
Residual Range Organics (C28-C40)	1050	200	"	1000		105	58-124			
Surrogate: o-Terphenyl	66		"	50.0		131	59-131			

Matrix Spike (B8E0705-MS1)

Source: Y805097-01

Prepared: 05/07/2018 Analyzed: 05/07/2018

Diesel (C10-C28)	1090	50.0	mg/kg	1000	ND	109	53-125			
Residual Range Organics (C28-C40)	1030	200	"	1000	10.7	101	47-133			
Surrogate: o-Terphenyl	63		"	50.0		127	59-131			

Matrix Spike Dup (B8E0705-MSD1)

Source: Y805097-01

Prepared: 05/07/2018 Analyzed: 05/07/2018

Diesel (C10-C28)	1070	50.0	mg/kg	1000	ND	107	53-125	2.05	20	
Residual Range Organics (C28-C40)	992	200	"	1000	10.7	98.2	47-133	3.33	20	
Surrogate: o-Terphenyl	63		"	50.0		126	59-131			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E0706 - EPA 1311										
Duplicate (B8E0706-DUP1)		Source: Y805097-01			Prepared: 05/07/2018 Analyzed: 05/07/2018					
pH	7.43		pH Units		7.29			1.90	25	
Batch B8E0707 - EPA 1311										
Blank (B8E0707-BLK1)		Prepared: 05/07/2018 Analyzed: 05/08/2018								
Specific Conductance (EC)	0.00210		mmhos/cm							
Duplicate (B8E0707-DUP1)		Source: Y805097-01			Prepared: 05/07/2018 Analyzed: 05/08/2018					
Specific Conductance (EC)	0.0871		mmhos/cm		0.0893			2.49	25	

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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.



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.



May 29, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Bartz 21-17

Project Number - 014218100

Attached are your analytical results for KMG - Bartz 21-17 received by Origins Laboratory, Inc. May 25, 2018. This project is associated with Origins project number Y805392-01.

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: 014218100
Project: KMG - Bartz 21-17

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@4'	Y805392-01	Soil	May 25, 2018 11:20	05/25/2018 14:00
B02@4'	Y805392-02	Soil	May 25, 2018 11:30	05/25/2018 14:00
N01@3.5'	Y805392-03	Soil	May 25, 2018 11:35	05/25/2018 14:00
N02@3.5'	Y805392-04	Soil	May 25, 2018 11:40	05/25/2018 14:00
W01@3.5'	Y805392-05	Soil	May 25, 2018 11:45	05/25/2018 14:00
E01@3.5'	Y805392-06	Soil	May 25, 2018 11:50	05/25/2018 14:00

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.

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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Y805392

ORIGINS
LABORATORY, INC

page 1 of 1

Client: LT Environmental
Address: 4600 W 60th
Telephone Number: 303 433 9788
Email Address: KMG TEAM

Project Manager: B Sulzberger
Project Name: Bartz 21-17
Project Number: 014218100
Samples Collected By: Glenn Thompson

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other	GREX	TPM	DE/LO/CO		EC
B01041	5/25/18	1120	2	X						X			X	X	X	1
B02041	5/25/18	1130	2	X						X			X	X	X	2
N01040535		1135	2	X						X			X	X	X	3
N02035		1140	2	X						X			X	X	X	4
W01035		1145	2	X						X			X	X	X	5
E01035		1150	2	X						X			X	X	X	6
B0106		1204	2	X						X					Hold	7
																8
																9
																10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
[Signature]	5/25/18	1400	[Signature]	5/25/18	1400	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"/>

Temp Received-

Date Results Needed Tuesday Results

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte 21-17

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4805392

Client: LTE

Client Project ID: KMG - Barte 21-17

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 5/25/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1/12.1 °C / °C / °C / °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"/>		<u>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⁾ ?	<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 (Project Manager)

Date/Time Reviewed 5/25/18

Origins Laboratory, Inc.

Jefe Pellegrini

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

B01@4'

5/25/2018 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805392-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	84.6	25.0	mg/kg	1	B8E2506	05/25/2018	05/26/2018	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	89.2 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	1360	50.0	mg/kg	250	B8E2505	05/25/2018	05/26/2018	
Benzene	0.226	0.050	"	25	"	"	05/26/2018	
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.207	0.050	"	"	"	"	"	
Xylenes, total	0.054	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	109 %	70-130			"	"	"	
Surrogate: Toluene-d8	91.4 %	70-130			"	"	05/26/2018	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	8.51		pH Units	1	B8E2404	05/25/2018	05/25/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.195		mmhos/cm	"	B8E2405	05/25/2018	05/27/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

B02@4'

5/25/2018 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805392-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	424	25.0	mg/kg	1	B8E2506	05/25/2018	05/26/2018
Residual Range Organics (C28-C40)	113	100	"	"	"	"	"

Surrogate: o-Terphenyl	119 %	59-131			"	"	"
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	1210	50.0	mg/kg	250	B8E2505	05/25/2018	05/26/2018
Benzene	2.65	0.050	"	25	"	"	05/26/2018
Toluene	0.492	0.050	"	"	"	"	"
Ethylbenzene	4.18	0.050	"	"	"	"	"
Xylenes, total	39.7	0.498	"	250	"	"	"

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"
Surrogate: Toluene-d8	95.9 %	70-130			"	"	05/26/2018
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	9.61		pH Units	1	B8E2404	05/25/2018	05/25/2018
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.267		mmhos/cm	"	B8E2405	05/25/2018	05/27/2018
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

N01@3.5'

5/25/2018 11:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805392-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E2506	05/25/2018	05/25/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	6.59	5.00	mg/kg	25	B8E2505	05/25/2018	05/26/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 107 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.9 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.41		pH Units	1	B8E2404	05/25/2018	05/25/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.253		mmhos/cm	"	B8E2405	05/25/2018	05/27/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

N02@3.5'

5/25/2018 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805392-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E2506	05/25/2018	05/25/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	40.0	5.00	mg/kg	25	B8E2505	05/25/2018	05/26/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "
Surrogate: Toluene-d8 99.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.18		pH Units	1	B8E2404	05/25/2018	05/25/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.398		mmhos/cm	"	B8E2405	05/25/2018	05/27/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

W01@3.5'

5/25/2018 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805392-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E2506	05/25/2018	05/25/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 102 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.773	0.200	mg/kg	1	B8E2505	05/25/2018	05/26/2018	
Benzene	0.005	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 111 % 70-130 " " "
Surrogate: Toluene-d8 98.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.46		pH Units	1	B8E2404	05/25/2018	05/25/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.135		mmhos/cm	"	B8E2405	05/25/2018	05/27/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

E01@3.5'

5/25/2018 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805392-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E2506	05/25/2018	05/25/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 85.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	12.3	5.00	mg/kg	25	B8E2505	05/25/2018	05/26/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "
Surrogate: Toluene-d8 99.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.23		pH Units	1	B8E2404	05/25/2018	05/25/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.181		mmhos/cm	"	B8E2405	05/25/2018	05/27/2018	
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Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E2505 - EPA 5030 (soil)										
Blank (B8E2505-BLK1)					Prepared: 05/25/2018 Analyzed: 05/25/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

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 B8E2505 - EPA 5030 (soil)										
LCS (B8E2505-BS1)					Prepared: 05/25/2018 Analyzed: 05/25/2018					
Benzene	0.109	0.002	mg/kg	0.100		109	77.1-124			
Toluene	0.109	0.002	"	0.100		109	74.5-128			
Ethylbenzene	0.114	0.002	"	0.100		114	66.4-127			
m,p-Xylene	0.226	0.004	"	0.200		113	76.6-124			
o-Xylene	0.112	0.002	"	0.100		112	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E2505 - EPA 5030 (soil)

Matrix Spike (B8E2505-MS1)		Source: Y805392-05			Prepared: 05/25/2018 Analyzed: 05/25/2018					
Benzene	0.101	0.002	mg/kg	0.100	0.005	96.2	71.8-126			
Toluene	0.097	0.002	"	0.100	0.001	95.2	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	0.001	98.8	62.2-130			
m,p-Xylene	0.198	0.004	"	0.200	0.003	97.8	46.5-137			
o-Xylene	0.099	0.002	"	0.100	0.001	98.3	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

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 B8E2505 - EPA 5030 (soil)										
Matrix Spike Dup (B8E2505-MSD1)		Source: Y805392-05			Prepared: 05/25/2018 Analyzed: 05/25/2018					
Benzene	0.099	0.002	mg/kg	0.100	0.005	93.9	71.8-126	2.36	11.3	
Toluene	0.094	0.002	"	0.100	0.001	92.3	65.1-130	3.05	15.4	
Ethylbenzene	0.096	0.002	"	0.100	0.001	94.3	62.2-130	4.63	19.6	
m,p-Xylene	0.190	0.004	"	0.200	0.003	93.8	46.5-137	4.10	19.2	
o-Xylene	0.096	0.002	"	0.100	0.001	94.7	54.2-134	3.75	17.9	
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E2506 - EPA 3580

Blank (B8E2506-BLK1)

Prepared: 05/25/2018 Analyzed: 05/25/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	50		"	50.0		101	59-131			

LCS (B8E2506-BS1)

Prepared: 05/25/2018 Analyzed: 05/25/2018

Diesel (C10-C28)	941	50.0	mg/kg	1000		94.1	64-121			
Residual Range Organics (C28-C40)	904	200	"	1000		90.4	58-124			
Surrogate: o-Terphenyl	52		"	50.0		103	59-131			

Matrix Spike (B8E2506-MS1)

Source: Y805392-05

Prepared: 05/25/2018 Analyzed: 05/25/2018

Diesel (C10-C28)	1210	50.0	mg/kg	1000	ND	121	53-125			
Residual Range Organics (C28-C40)	1190	200	"	1000	9.73	118	47-133			
Surrogate: o-Terphenyl	66		"	50.0		131	59-131			

Matrix Spike Dup (B8E2506-MSD1)

Source: Y805392-05

Prepared: 05/25/2018 Analyzed: 05/25/2018

Diesel (C10-C28)	1130	50.0	mg/kg	1000	ND	113	53-125	6.98	20	
Residual Range Organics (C28-C40)	1080	200	"	1000	9.73	107	47-133	9.28	20	
Surrogate: o-Terphenyl	64		"	50.0		128	59-131			

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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 B8E2404 - EPA 1311										
Duplicate (B8E2404-DUP1)		Source: Y805324-01			Prepared: 05/24/2018 Analyzed: 05/25/2018					
pH	7.31		pH Units		8.32			12.9	25	
Duplicate (B8E2404-DUP2)		Source: Y805392-01			Prepared: 05/24/2018 Analyzed: 05/25/2018					
pH	8.07		pH Units		8.51			5.31	25	
Batch B8E2405 - EPA 1311										
Blank (B8E2405-BLK1)					Prepared: 05/24/2018 Analyzed: 05/27/2018					
Specific Conductance (EC)	0.00200		mmhos/cm							
Blank (B8E2405-BLK2)					Prepared: 05/24/2018 Analyzed: 05/27/2018					
Specific Conductance (EC)	0.00230		mmhos/cm							
Duplicate (B8E2405-DUP1)		Source: Y805324-01			Prepared: 05/24/2018 Analyzed: 05/27/2018					
Specific Conductance (EC)	0.131		mmhos/cm		0.135			3.00	25	
Duplicate (B8E2405-DUP2)		Source: Y805392-01			Prepared: 05/24/2018 Analyzed: 05/27/2018					
Specific Conductance (EC)	0.187		mmhos/cm		0.195			4.13	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

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.



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.



May 31, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Bartz 21-17/Wilson 8-17A Project Number - 014218100

Attached are your analytical results for KMG - Bartz 21-17/Wilson 8-17A received by Origins Laboratory, Inc. May 30, 2018. This project is associated with Origins project number Y805440-01.

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: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02@7'	Y805440-01	Soil	May 30, 2018 14:45	05/30/2018 17:50
B03@9'	Y805440-02	Soil	May 30, 2018 14:50	05/30/2018 17:50
N03@7'	Y805440-03	Soil	May 30, 2018 14:55	05/30/2018 17:50
N04@7'	Y805440-04	Soil	May 30, 2018 15:00	05/30/2018 17:50
B04@9'	Y805440-05	Soil	May 30, 2018 15:05	05/30/2018 17:50
W02@7'	Y805440-06	Soil	May 30, 2018 15:10	05/30/2018 17:50
B05@9'	Y805440-07	Soil	May 30, 2018 15:15	05/30/2018 17:50
W03@7'	Y805440-08	Soil	May 30, 2018 15:20	05/30/2018 17:50
B06@9'	Y805440-09	Soil	May 30, 2018 15:25	05/30/2018 17:50
S01@7'	Y805440-10	Soil	May 30, 2018 15:30	05/30/2018 17:50
E03@7'	Y805440-11	Soil	May 30, 2018 15:35	05/30/2018 17:50

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

ORIGINS
LABORATORY, INC

Client: LT Environmental
Address: 4600 W 60th Ave
Telephone Number: 303 433 9788
Email Address: KMG TEAM

www.originslaboratory.com

Project Manager: B Sulzberger
Project Name: Bartz 21-17/Wilson 8-17A
Project Number: 014218100
Samples Collected By: Glenn Thompson

page 1 of 2

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Sampling #	Other	GC/MS	GC	PH	
E02e7	5/30/18	1445	2	X					X			X	X	X	SAR
B03e9		1450	2	X					X			X	X	X	
N03e7		1455	2	X					X			X	X	X	
N04e7		1500	2	X					X			X	X	X	
B01e9		1505	2	X					X			X	X	X	
W02e7		1510	2	X					X			X	X	X	
B05e9		1515	2	X					X			X	X	X	
W03e7		1520	2	X					X			X	X	X	
B06e9		1525	2	X					X			X	X	X	
J01e7		1530	2	X					X			X	X	X	

Relinquished By:

Relinquished By:

Date: 5/30/18

Date: 5/30/18

Time: 1750

Time: 1750

Received By:

Received By:

Date: 5/30/18

Date: 5/30/18

Time: 1750

Time: 1750

Turnaround Time: Same Day ☒ 24 Hr ☐
48 Hr ☐ 72 Hr ☐
Standard ☐

Temp Received - 13.9

Date Results Needed

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

ORIGINS

LABORATORY, INC

Y865440

www.originslaboratory.com

page 2 of 2

Client: LT Environmental

Address: 4600 W 60th Ave

Project Manager: B. Subbeiger




Project Name: Barter 21-17 Wilson E-17A

Project Number: 014218100

Samples Collected By: Glenn Thompson

Telephone Number: 303 433 9788

Email Address: KMG TEAM

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	6 BTEX	TPH	PC		PM
E0307	5/30/18	1535	2	X					X				X	X	X	Hold SHL
Relinquished By: 	Date: 5/30/18	Time: 1750		Received By: 				Date: 5/30/18			Time: 1750			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:		Received By:				Date:			Time:					

Temp Received: 13.9

Date Results Needed

Origins Laboratory, Inc.

Jeff Pellgrini

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte 21-17/Wilson 8-17A

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 7605440

Client: LTE

Client Project ID: KMG - Barte 21-17/Wilson 8-17A

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 5/30/2018

Airbill #: N/A

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

☐ Water

☐ Other:

(Describe)

Cooler Number/Temperature: 1 / 13.9 °C / °C / °C / °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"/>		<u>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⁾ ?	<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 (Project Manager)

5/30/18
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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17/Wilson 8-17A

E02@7'

5/30/2018 2:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/30/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 84.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	24.5	5.00	mg/kg	25	B8E3008	05/30/2018	05/30/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.31		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.155		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17/Wilson 8-17A

B03@9'
5/30/2018 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/30/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 90.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B8E3008	05/30/2018	05/30/2018	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.25		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.208		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte 21-17/Wilson 8-17A

N03@7'

5/30/2018 2:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 98.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	1.63	0.200	mg/kg	1	B8E3008	05/30/2018	05/30/2018	
Benzene	0.006	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	0.012	0.002	"	"	"	"	"	
Xylenes, total	0.008	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "
Surrogate: Toluene-d8 98.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 109 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.50	pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.270	mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte 21-17/Wilson 8-17A

N04@7'

5/30/2018 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	115	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 100 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	140	5.00	mg/kg	25	B8E3008	05/30/2018	05/30/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.339	0.050	"	"	"	"	"	
Xylenes, total	0.952	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "
Surrogate: Toluene-d8 96.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 111 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.35		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.340		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17/Wilson 8-17A

B04@9'

5/30/2018 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	86.4 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.214	0.200	mg/kg	1	B8E3008	05/30/2018	05/30/2018	
Benzene	0.003	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	0.002	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	9.07		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.259		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17/Wilson 8-17A

W02@7'

5/30/2018 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 93.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	24.3	5.00	mg/kg	25	B8E3008	05/30/2018	05/30/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.36		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.373		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17/Wilson 8-17A

B05@9'

5/30/2018 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-07 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 91.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B8E3008	05/30/2018	05/30/2018	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.5 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.70		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.137		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17/Wilson 8-17A

W03@7'

5/30/2018 3:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-08 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	105	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 95.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	107	5.00	mg/kg	25	B8E3008	05/30/2018	05/31/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.082	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 98.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 113 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.61		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.119		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17/Wilson 8-17A

B06@9'
5/30/2018 3:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-09 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	88.1 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	7.61	5.00	mg/kg	25	B8E3008	05/30/2018	05/31/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	0.107	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.5 %	70-130			"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	8.83		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.171		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte2 21-17/Wilson 8-17A

S01@7'
5/30/2018 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-10 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 89.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	59.0	5.00	mg/kg	25	B8E3008	05/30/2018	05/31/2018	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.148	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 100 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.54		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.190		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17/Wilson 8-17A

E03@7'

5/30/2018 3:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y805440-11 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E3003	05/30/2018	05/31/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 94.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E3008	05/30/2018	05/31/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 107 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.61		pH Units	1	B8E3004	05/30/2018	05/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.121		mmhos/cm	"	B8E3005	"	"	
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

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 B8E3008 - EPA 5030 (soil)										
Blank (B8E3008-BLK1)					Prepared: 05/30/2018 Analyzed: 05/30/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17/Wilson 8-17A

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 B8E3008 - EPA 5030 (soil)										
LCS (B8E3008-BS1)					Prepared: 05/30/2018 Analyzed: 05/30/2018					
Benzene	0.104	0.002	mg/kg	0.100		104	77.1-124			
Toluene	0.109	0.002	"	0.100		109	74.5-128			
Ethylbenzene	0.118	0.002	"	0.100		118	66.4-127			
m,p-Xylene	0.234	0.004	"	0.200		117	76.6-124			
o-Xylene	0.116	0.002	"	0.100		116	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.8	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17/Wilson 8-17A

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 B8E3008 - EPA 5030 (soil)

Matrix Spike (B8E3008-MS1)		Source: Y805440-03			Prepared: 05/30/2018 Analyzed: 05/30/2018					
Benzene	0.104	0.002	mg/kg	0.100	0.006	98.1	71.8-126			
Toluene	0.092	0.002	"	0.100	ND	91.7	65.1-130			
Ethylbenzene	0.128	0.002	"	0.100	0.012	116	62.2-130			
m,p-Xylene	0.226	0.004	"	0.200	0.006	110	46.5-137			
o-Xylene	0.112	0.002	"	0.100	0.003	109	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	58		"	62.5		92.9	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		109	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barte21-17/Wilson 8-17A

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 B8E3008 - EPA 5030 (soil)

Matrix Spike Dup (B8E3008-MSD1)		Source: Y805440-03			Prepared: 05/30/2018 Analyzed: 05/31/2018					
Benzene	0.099	0.002	mg/kg	0.100	0.006	93.0	71.8-126	5.03	11.3	
Toluene	0.099	0.002	"	0.100	ND	98.8	65.1-130	7.52	15.4	
Ethylbenzene	0.117	0.002	"	0.100	0.012	105	62.2-130	9.19	19.6	
m,p-Xylene	0.224	0.004	"	0.200	0.006	110	46.5-137	0.816	19.2	
o-Xylene	0.110	0.002	"	0.100	0.003	107	54.2-134	1.87	17.9	
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.3	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

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 B8E3003 - EPA 3580

Blank (B8E3003-BLK1)

Prepared: 05/30/2018 Analyzed: 05/30/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	47		"	50.0		94.4	59-131			

Blank (B8E3003-BLK2)

Prepared: 05/30/2018 Analyzed: 05/30/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.6	59-131			

LCS (B8E3003-BS1)

Prepared: 05/30/2018 Analyzed: 05/30/2018

Diesel (C10-C28)	1020	50.0	mg/kg	1000		102	64-121			
Residual Range Organics (C28-C40)	971	200	"	1000		97.1	58-124			
Surrogate: o-Terphenyl	49		"	50.0		98.2	59-131			

LCS (B8E3003-BS2)

Prepared: 05/30/2018 Analyzed: 05/30/2018

Diesel (C10-C28)	1030	50.0	mg/kg	1000		103	64-121			
Residual Range Organics (C28-C40)	989	200	"	1000		98.9	58-124			
Surrogate: o-Terphenyl	55		"	50.0		111	59-131			

Matrix Spike (B8E3003-MS1)

Source: Y805399-01

Prepared: 05/30/2018 Analyzed: 05/30/2018

Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	53-125			
Residual Range Organics (C28-C40)	994	200	"	1000	ND	99.4	47-133			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

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 B8E3003 - EPA 3580										
Matrix Spike (B8E3003-MS1)		Source: Y805399-01			Prepared: 05/30/2018 Analyzed: 05/30/2018					
Surrogate: o-Terphenyl	53		mg/kg	50.0		105	59-131			
Matrix Spike (B8E3003-MS2)		Source: Y805421-01			Prepared: 05/30/2018 Analyzed: 05/30/2018					
Diesel (C10-C28)	1030	50.0	mg/kg	1000	ND	103	53-125			
Residual Range Organics (C28-C40)	990	200	"	1000	ND	99.0	47-133			
Surrogate: o-Terphenyl	52		"	50.0		104	59-131			
Matrix Spike Dup (B8E3003-MSD1)		Source: Y805399-01			Prepared: 05/30/2018 Analyzed: 05/30/2018					
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125	2.26	20	
Residual Range Organics (C28-C40)	968	200	"	1000	ND	96.8	47-133	2.68	20	
Surrogate: o-Terphenyl	52		"	50.0		104	59-131			
Matrix Spike Dup (B8E3003-MSD2)		Source: Y805421-01			Prepared: 05/30/2018 Analyzed: 05/30/2018					
Diesel (C10-C28)	1120	50.0	mg/kg	1000	ND	112	53-125	9.01	20	
Residual Range Organics (C28-C40)	1110	200	"	1000	ND	111	47-133	11.6	20	
Surrogate: o-Terphenyl	59		"	50.0		117	59-131			

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

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 B8E3004 - EPA 1311										
Duplicate (B8E3004-DUP1)		Source: Y805421-01			Prepared: 05/30/2018 Analyzed: 05/30/2018					
pH	8.46		pH Units		8.51			0.589	25	
Batch B8E3005 - EPA 1311										
Blank (B8E3005-BLK1)		Prepared: 05/30/2018 Analyzed: 05/30/2018								
Specific Conductance (EC)	0.00410		mmhos/cm							
Duplicate (B8E3005-DUP1)		Source: Y805421-01			Prepared: 05/30/2018 Analyzed: 05/30/2018					
Specific Conductance (EC)	0.0528		mmhos/cm		0.0599			12.6	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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17/Wilson 8-17A

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.



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.



July 25, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Bartz 21-17

Project Number - 014218100

Attached are your analytical results for KMG - Bartz 21-17 received by Origins Laboratory, Inc. July 24, 2018. This project is associated with Origins project number Y807322-01.

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: 014218100

Project: KMG - Bartz 21-17

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@1'	Y807322-01	Soil	July 24, 2018 10:50	07/24/2018 15:44

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

ORIGINS
LABORATORY, INC

www.originslaboratory.com

Y667322

page

of

Client: LT Environmental
Address: 4600 W 60th Ave
Arvada, CO 80003
Telephone Number: (303) 433-9786
Email Address: bsulzberger@ltenv.com

Project Manager: Brian Sulzberger
Project Name: Bartz 21-17
Project Number: 014218100
Samples Collected By: Daniel Thomas, Macy Kiel

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summary		
SS0501'	07/24	1050	2									Run
SS0502'		1052	1									Hold
SS0503'		1054										↓
SS0503.0'		1056										↓
Relinquished By:	Date: 7-24-18	Time: 1544		Received By:				Date: 7/24/18	Time: 1544	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:		Received By:				Date:	Time:			

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

Temp Received: 74 ° Date Results Needed

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y90T322

Client: LTE

Client Project ID: KMG - Bartz 21-17

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 7/24/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 24.7 °C _____ / _____ °C _____ / _____ °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 ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>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⁾ ?	<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 (Project Manager)

Date/Time Reviewed 7/24/18

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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Bartz 21-17

SS05@1'

7/24/2018 10:50:00AM

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit						

Origins Laboratory, Inc.
Y807322-01 (Soil)

pH in Soil by EPA 9045D

pH	8.32	pH Units	1	B8G2405	07/24/2018	07/24/2018
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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

Brian Sulzberger
Project Number: 014218100
Project: KMG - Barteze 21-17

Classical Chemistry Parameters - 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 B8G2405 - NO PREP

Duplicate (B8G2405-DUP1)

Source: Y807322-01

Prepared: 07/24/2018 Analyzed: 07/24/2018

pH	7.99		pH Units	8.32				4.05	25	
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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

Brian Sulzberger

Project Number: 014218100

Project: KMG - Bartz 21-17

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.



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