

TABLE 1
SOIL ANALYTICAL RESULTS
DELBERT SHABLE UNIT 1 PRODUCED WATER PIT CLOSURE
WELD COUNTY, COLORADO
BONANZA CREEK ENERGY OPERATING COMPANY LLC.

Parameters		COGCC Table 910-1 Concentration Level	SS01
Sample Date			4/11/2017
Sample Depth (feet)			3.0-4.0
BTEX	Benzene	0.17	<0.002
	Toluene	85	<0.002
	Ethylbenzene	100	<0.002
	Total Xylenes	175	<0.002
TPH	DRO	--	<50
	GRO	--	<0.2
	Total	500	<50
Inorganics	EC (mmhos/cm)	<4	0.146
	SAR	<12	3.48
	pH (unitless)	6-9	8.60

Notes:

-- - no concentration level is available

BTEX - benzene, toluene, ethylbenzene, xylenes (total)

COGCC - Colorado Oil and Gas Conservation Commission

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

EC - electrical conductivity

mmhos/cm - millimhos per centimeter

SAR - sodium adsorption ratio

All results are in mg/kg unless stated otherwise.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
DELBERT SHABLE UNIT 1 PRODUCED WATER PIT CLOSURE
WELD COUNTY, COLORADO
BONANZA CREEK ENERGY OPERATING COMPANY LLC.

Parameters		COGCC Table 910-1 Concentration Level	GW01
Sample Date			4/11/2017
Sample Depth (feet)			4.0
BTEX	Benzene	0.005	<0.001
	Toluene	0.56	<0.001
	Ethylbenzene	0.7	<0.001
	Total Xylenes	1.4	<0.001

Notes:

COGCC - Colorado Oil and Gas Conservation Commission

BTEX - benzene, toluene, ethylbenzene, xylenes (total)

All results are in mg/kg unless stated otherwise.



April 18, 2017

Bonanza Creek Energy, Inc.

Brian Dodek

410 17th St, Suite 1400

Denver

CO 80211

Project Name - Delbert Shable Unit 1

Project Number - [none]

Attached are your analytical results for Delbert Shable Unit 1 received by Origins Laboratory, Inc. April 11, 2017. This project is associated with Origins project number Y704120-01.

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

Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	Y704120-01	Soil	April 11, 2017 9:15	04/11/2017 16:10
WS01	Y704120-02	Water	April 11, 2017 9:20	04/11/2017 16:10

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 1704170

Client: Bonanza Creek Energy

Client Project ID: Delbert Shable Unit 1

Checklist Completed by: D. W.

Shipped Via: W/D
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4-11-17 1629

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 1.3 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: T005

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>pH, SAG</u>
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) [Signature]

Date/Time Reviewed 4/12/17

Origins Laboratory, Inc.

Jefe Pellegrini

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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

SS01

4/11/2017 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704120-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7D1302	04/13/2017	04/13/2017	U
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Surrogate: o-Terphenyl	80.0 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7D1301	04/13/2017	04/13/2017	U
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Benzene	ND	0.002	"	"	"	"	"	U
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Toluene	ND	0.002	"	"	"	"	"	U
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Ethylbenzene	ND	0.002	"	"	"	"	"	U
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Xylenes, total	ND	0.002	"	"	"	"	"	U
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Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	
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Surrogate: Toluene-d8	106 %	70-130			"	"	"	
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Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			"	"	"	
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Metals (Saturated Paste Prep)

Calcium	7.65		me/L	1	'[none]'	04/12/2017	04/13/2017	
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Magnesium	3.58		"	"	"	"	"	
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Sodium	8.24		"	"	"	"	"	
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pH in Soil by EPA 9045D

pH	8.60		pH Units	1	B7D1303	04/13/2017	04/14/2017	
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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

SS01

4/11/2017 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704120-01 (Soil)

SAR by 20B Saturated Paste

SAR	3.48			1	'[none]'	04/12/2017	04/13/2017	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.146		mmhos/cm	1	B7D1304	04/13/2017	04/14/2017	
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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

WS01

4/11/2017 9:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y704120-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7D1701	04/17/2017	04/17/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

98.8 % 84-121

"

"

"

Surrogate: Toluene-d8

99.5 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

101 % 84-114

"

"

"

Origins Laboratory, Inc.



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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1301 - EPA 5030 (soil)										
Blank (B7D1301-BLK1)					Prepared: 04/13/2017 Analyzed: 04/13/2017					
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		103	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.3	70-130			

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Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1301 - EPA 5030 (soil)

LCS (B7D1301-BS1)

Prepared: 04/13/2017 Analyzed: 04/13/2017

Benzene	0.080	0.002	mg/kg	0.100		80.1	77.1-124			
Toluene	0.088	0.002	"	0.100		87.5	74.5-128			
Ethylbenzene	0.091	0.002	"	0.100		91.5	66.4-127			
m,p-Xylene	0.185	0.004	"	0.200		92.7	76.6-124			
o-Xylene	0.093	0.002	"	0.100		93.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	54		ug/kg	62.5		86.9	70-130			
Surrogate: Toluene-d8	67		"	62.5		107	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

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Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1301 - EPA 5030 (soil)

Matrix Spike (B7D1301-MS1)		Source: Y704117-01			Prepared: 04/13/2017 Analyzed: 04/13/2017					
Benzene	0.081	0.002	mg/kg	0.100	ND	80.7	71.8-126			
Toluene	0.086	0.002	"	0.100	ND	86.5	65.1-130			
Ethylbenzene	0.087	0.002	"	0.100	ND	86.9	62.2-130			
m,p-Xylene	0.177	0.004	"	0.200	ND	88.6	46.5-137			
o-Xylene	0.089	0.002	"	0.100	ND	89.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	66		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	70-130			

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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1301 - EPA 5030 (soil)

Matrix Spike Dup (B7D1301-MSD1)		Source: Y704117-01			Prepared: 04/13/2017 Analyzed: 04/13/2017					
Benzene	0.081	0.002	mg/kg	0.100	ND	80.7	71.8-126	0.0248	11.3	
Toluene	0.086	0.002	"	0.100	ND	85.7	65.1-130	0.859	15.4	
Ethylbenzene	0.088	0.002	"	0.100	ND	88.1	62.2-130	1.28	19.6	
m,p-Xylene	0.179	0.004	"	0.200	ND	89.7	46.5-137	1.16	19.2	
o-Xylene	0.091	0.002	"	0.100	ND	90.9	54.2-134	2.13	17.9	
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

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Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

Blank (B7D1701-BLK1)

Prepared: 04/17/2017 Analyzed: 04/17/2017

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	59		"	62.5		94.6	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.4	85-115			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		91.0	84-114			

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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

Blank (B7D1701-BLK2)

Prepared: 04/17/2017 Analyzed: 04/17/2017

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	56		"	62.5		89.2	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.7	85-115			
Surrogate: 4-Bromofluorobenzene	56		"	62.5		89.8	84-114			

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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

LCS (B7D1701-BS1)

Prepared: 04/17/2017 Analyzed: 04/17/2017

Benzene	49.0	1.00	ug/L	50.0		98.0	73.3-129			
Toluene	50.5	1.00	"	50.0		101	76.2-123			
Ethylbenzene	52.3	1.00	"	50.0		105	73.6-130			
m,p-Xylene	105	2.00	"	100		105	76.1-126			
o-Xylene	51.0	1.00	"	50.0		102	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		87.7	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.3	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.0	84-114			

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Jen Pellegrini For Noelle Doyle Mathis, President

Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

LCS (B7D1701-BS2)

Prepared: 04/17/2017 Analyzed: 04/17/2017

Benzene	49.9	1.00	ug/L	50.0		99.8	73.3-129			
Toluene	51.2	1.00	"	50.0		102	76.2-123			
Ethylbenzene	52.0	1.00	"	50.0		104	73.6-130			
m,p-Xylene	106	2.00	"	100		106	76.1-126			
o-Xylene	52.0	1.00	"	50.0		104	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		88.6	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.4	85-115			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		92.8	84-114			

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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

Matrix Spike (B7D1701-MS1)		Source: Y704161-08			Prepared: 04/17/2017 Analyzed: 04/17/2017					
Benzene	55.3	1.00	ug/L	50.0	3.84	103	74-130			
Toluene	53.7	1.00	"	50.0	ND	107	73-131			
Ethylbenzene	61.0	1.00	"	50.0	5.11	112	76-132			
m,p-Xylene	112	2.00	"	100	ND	112	69-139			
o-Xylene	53.6	1.00	"	50.0	ND	107	74-131			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		90.3	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.8	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.3	84-114			

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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

Matrix Spike (B7D1701-MS2)		Source: Y704161-09			Prepared: 04/17/2017 Analyzed: 04/17/2017					
Benzene	56.7	1.00	ug/L	50.0	9.37	94.7	74-130			
Toluene	50.5	1.00	"	50.0	0.120	101	73-131			
Ethylbenzene	60.0	1.00	"	50.0	5.71	108	76-132			
m,p-Xylene	107	2.00	"	100	ND	107	69-139			
o-Xylene	51.6	1.00	"	50.0	ND	103	74-131			
Surrogate: 1,2-Dichloroethane-d4	52		"	62.5		83.5	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.1	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.4	84-114			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

Matrix Spike Dup (B7D1701-MSD1)		Source: Y704161-08			Prepared: 04/17/2017 Analyzed: 04/17/2017					
Benzene	54.2	1.00	ug/L	50.0	3.84	101	74-130	2.08	20	
Toluene	53.7	1.00	"	50.0	ND	107	73-131	0.00	20	
Ethylbenzene	60.4	1.00	"	50.0	5.11	111	76-132	0.906	20	
m,p-Xylene	110	2.00	"	100	ND	110	69-139	1.88	20	
o-Xylene	53.5	1.00	"	50.0	ND	107	74-131	0.224	20	
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		88.7	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.8	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.3	84-114			

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Brian Dodek

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Project: Delbert Shable Unit 1

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 B7D1701 - EPA 5030B (Water)

Matrix Spike Dup (B7D1701-MSD2)		Source: Y704161-09			Prepared: 04/17/2017 Analyzed: 04/17/2017					
Benzene	57.1	1.00	ug/L	50.0	9.37	95.5	74-130	0.668	20	
Toluene	51.6	1.00	"	50.0	0.120	103	73-131	2.20	20	
Ethylbenzene	58.6	1.00	"	50.0	5.71	106	76-132	2.33	20	
m,p-Xylene	105	2.00	"	100	ND	105	69-139	2.01	20	
o-Xylene	51.6	1.00	"	50.0	ND	103	74-131	0.0581	20	
Surrogate: 1,2-Dichloroethane-d4	51		"	62.5		81.6	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.3	85-115			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.3	84-114			

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Project: Delbert Shable Unit 1

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 B7D1302 - EPA 3550B

Blank (B7D1302-BLK1)

Prepared: 04/13/2017 Analyzed: 04/13/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
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Surrogate: o-Terphenyl

40

"

50.0

80.9

59-131

LCS (B7D1302-BS1)

Prepared: 04/13/2017 Analyzed: 04/13/2017

Diesel (C10-C28)	908	50.0	mg/kg	1000		90.8	64-121			
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Surrogate: o-Terphenyl

44

"

50.0

87.3

59-131

Matrix Spike (B7D1302-MS1)

Source: Y704149-01

Prepared: 04/13/2017 Analyzed: 04/13/2017

Diesel (C10-C28)	1030	50.0	mg/kg	1000	93.7	93.9	53-125			
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Surrogate: o-Terphenyl

46

"

50.0

92.2

59-131

Matrix Spike Dup (B7D1302-MSD1)

Source: Y704149-01

Prepared: 04/13/2017 Analyzed: 04/13/2017

Diesel (C10-C28)	1100	50.0	mg/kg	1000	93.7	101	53-125	6.67	20	
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Surrogate: o-Terphenyl

48

"

50.0

96.8

59-131

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Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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 B7D1303 - NO PREP										
Duplicate (B7D1303-DUP1)		Source: Y704117-01			Prepared: 04/13/2017 Analyzed: 04/14/2017					
pH	8.77		pH Units		8.70			0.801	25	
Batch B7D1304 - NO PREP										
Blank (B7D1304-BLK1)		Prepared: 04/13/2017 Analyzed: 04/14/2017								
Specific Conductance (EC)	0.00330		mmhos/cm							
Duplicate (B7D1304-DUP1)		Source: Y704117-01			Prepared: 04/13/2017 Analyzed: 04/14/2017					
Specific Conductance (EC)	0.130		mmhos/cm		0.115			11.9	25	

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Denver CO 80211

Brian Dodek

Project Number: [none]

Project: Delbert Shable Unit 1

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.

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