

TABLE 1
SOIL ANALYTICAL RESULTS
NMU 11-12H WELLPAD
JACKSON COUNTY, COLORADO
BONANZA CREEK ENERGY OPERATING COMPANY LLC.

Parameters		COGCC Table 910-1 Concentration Level	SS01	SS02	SS03
Sample Date			7/30/2015	7/30/2015	7/30/2015
Sample Depth (feet)			0.83 - 1.33	0.83 - 1.33	0.83 - 1.33
BTEX	Benzene	0.17	<0.002	<0.002	<0.002
	Toluene	85	<0.002	<0.002	<0.002
	Ethylbenzene	100	<0.002	<0.002	<0.002
	Total Xylenes	175	<0.002	<0.002	<0.002
TPH	DRO	--	75.1	95.0	236
	GRO	--	<0.200	<0.200	<0.200
	Total	500	75.1	95.0	236

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
 All results are in mg/kg unless stated otherwise.

August 05, 2015

Bonanza Creek Energy, Inc.

Brian Dodek

410 17th St, Suite 1400

Denver CO 80211

Project Name - NMU 11-12 H

Project Number - [none]

Attached are your analytical results for NMU 11-12 H received by Origins Laboratory, Inc. July 31, 2015. This project is associated with Origins project number X507432-01.

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



Bonanza Creek Energy, Inc.
410 17th St, Suite 1400
Denver CO 80211

Brian Dodek
Project Number: [none]
Project: NMU 11-12 H

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	X507432-01	Soil	July 30, 2015 11:30	07/31/2015 11:06
SS02	X507432-02	Soil	July 30, 2015 11:40	07/31/2015 11:06
SS03	X507432-03	Soil	July 30, 2015 11:50	07/31/2015 11:06

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

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page of

X50743Z

ORIGINS
LABORATORY, INC

Client: Bonanza Creek Energy, Inc.
Address: 410 17th Street, Suite 1400
Telephone Number: 720-225-6653
Email Address: bdodek@bonanzacrk.com

Project Manager: Brian Dodek
Project Name: NMU 11-12 H
Project Number: NA
Samples Collected By: Sam Robles

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions		
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ #			Other	
SS01	7-30-15	11:30	2	✓				✓				BTEX, TPH-GRO, TPH-DRO	1	
SS02	7-30-15	11:40	2	✓				✓				BTEX, TPH-GRO, TPH-DRO	2	
SS03	7-30-15	11:50	2	✓				✓				BTEX, TPH-GRO, TPH-DRO	3	
													4	
													5	
													6	
													7	
													8	
													9	
													10	
Relinquished By: Sam Robles	Date: 7-31-15	Time: 11:00						Received By: S. Dodek	Date: 7-31-15	Time: 10:00	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 3-6			
Relinquished By: DMG	Date: 7-31-15	Time: 11:00						Received By: Jeff	Date: 7/31/15	Time: 11:00				

Date Results Needed

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

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X507432

Client: Bonanza

Client Project ID: NMU

Checklist Completed by: Jeff Smith

Shipped Via: HD-COOL-ET

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

Date/time completed: 7/31/15

Airbill #: NA

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

Cooler Number/Temperature: 1 13.6 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: T203

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by [Signature] (Project Manager)

8/3/15
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

SS01

7/30/2015 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507432-01 (Soil)

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

Diesel (C10-C28)	75.1	50.0	mg/kg	1	5H03010	08/03/2015	08/03/2015	
Surrogate: o-Terphenyl	71.4 %	59-131			"	"	"	

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5H03011	08/03/2015	08/03/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.0 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	114 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

SS02

7/30/2015 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507432-02 (Soil)

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

Diesel (C10-C28)	95.0	50.0	mg/kg	1	5H03010	08/03/2015	08/03/2015	
Surrogate: o-Terphenyl	72.4 %	59-131			"	"	"	

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5H03011	08/03/2015	08/03/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.0 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

SS03

7/30/2015 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507432-03 (Soil)

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

Diesel (C10-C28)	236	50.0	mg/kg	1	5H03010	08/03/2015	08/03/2015	
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Surrogate: o-Terphenyl	73.6 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5H03011	08/03/2015	08/03/2015	
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Benzene	ND	0.002	"	"	"	"	"	
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Toluene	ND	0.002	"	"	"	"	"	
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Ethylbenzene	ND	0.002	"	"	"	"	"	
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Xylenes, total	ND	0.002	"	"	"	"	"	
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Surrogate: 1,2-Dichloroethane-d4	98.4 %	70-130			"	"	"	
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Surrogate: Toluene-d8	96.5 %	70-130			"	"	"	
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Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	
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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

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 5H03011 - EPA 5030 (soil)

Blank (5H03011-BLK1)

Prepared: 08/03/2015 Analyzed: 08/03/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	57.0		ug/kg	62.5		91.2	70-130			
Surrogate: Toluene-d8	60.5		"	62.5		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	63.3		"	62.5		101	70-130			

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Project: NMU 11-12 H

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 5H03011 - EPA 5030 (soil)

LCS (5H03011-BS1)

Prepared: 08/03/2015 Analyzed: 08/03/2015

Benzene	0.093	0.002	mg/kg	0.100		93.2	77.1-124			
Toluene	0.087	0.002	"	0.100		87.3	74.5-128			
Ethylbenzene	0.090	0.002	"	0.100		89.7	66.4-127			
m,p-Xylene	0.179	0.004	"	0.200		89.6	76.6-124			
o-Xylene	0.092	0.002	"	0.100		92.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	53.3		ug/kg	62.5		85.3	70-130			
Surrogate: Toluene-d8	59.8		"	62.5		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	62.4		"	62.5		99.8	70-130			

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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

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 5H03011 - EPA 5030 (soil)

Matrix Spike (5H03011-MS1)	Source: X507431-01			Prepared: 08/03/2015 Analyzed: 08/03/2015						
Benzene	0.088	0.002	mg/kg	0.100	ND	88.0	71.8-126			
Toluene	0.083	0.002	"	0.100	ND	83.1	65.1-130			
Ethylbenzene	0.090	0.002	"	0.100	ND	89.8	62.2-130			
m,p-Xylene	0.177	0.004	"	0.200	ND	88.5	46.5-137			
o-Xylene	0.091	0.002	"	0.100	ND	90.9	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	54.5		ug/kg	62.5		87.2	70-130			
Surrogate: Toluene-d8	60.3		"	62.5		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	65.2		"	62.5		104	70-130			

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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

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 5H03011 - EPA 5030 (soil)

Matrix Spike Dup (5H03011-MSD1)	Source: X507431-01			Prepared: 08/03/2015 Analyzed: 08/03/2015						
Benzene	0.091	0.002	mg/kg	0.100	ND	91.1	71.8-126	3.46	11.3	
Toluene	0.086	0.002	"	0.100	ND	86.0	65.1-130	3.50	15.4	
Ethylbenzene	0.089	0.002	"	0.100	ND	89.4	62.2-130	0.491	19.6	
m,p-Xylene	0.178	0.004	"	0.200	ND	89.1	46.5-137	0.653	19.2	
o-Xylene	0.092	0.002	"	0.100	ND	92.1	54.2-134	1.27	17.9	
Surrogate: 1,2-Dichloroethane-d4	54.4		ug/kg	62.5		87.0	70-130			
Surrogate: Toluene-d8	61.0		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	65.4		"	62.5		105	70-130			

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410 17th St, Suite 1400

Denver CO 80211

Brian Dodek

Project Number: [none]

Project: NMU 11-12 H

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 5H03010 - EPA 3580

Blank (5H03010-BLK1)

Prepared: 08/03/2015 Analyzed: 08/03/2015

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 41 " 50.0 81.6 59-131

LCS (5H03010-BS1)

Prepared: 08/03/2015 Analyzed: 08/03/2015

Diesel (C10-C28) 807 50.0 mg/kg 1000 80.7 64-121

Surrogate: o-Terphenyl 44 " 50.0 89.0 59-131

Matrix Spike (5H03010-MS1)

Source: X507431-01

Prepared: 08/03/2015 Analyzed: 08/03/2015

Diesel (C10-C28) 894 50.0 mg/kg 1000 147 74.7 53-125

Surrogate: o-Terphenyl 42 " 50.0 83.9 59-131

Matrix Spike Dup (5H03010-MSD1)

Source: X507431-01

Prepared: 08/03/2015 Analyzed: 08/03/2015

Diesel (C10-C28) 938 50.0 mg/kg 1000 147 79.2 53-125 4.88 20

Surrogate: o-Terphenyl 41 " 50.0 82.8 59-131

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.
410 17th St, Suite 1400
Denver CO 80211

Brian Dodek
Project Number: [none]
Project: NMU 11-12 H

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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Jen Pellegrini For Noelle Doyle Mathis, President