

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 05, 2018

Randy Edelen
Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver, CO 80237-1830
RE: Croissant #4

Enclosed are the results of analyses for samples received by Summit Scientific on 03/29/18 16:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-2	1803379-01	Soil	03/28/18 10:25	03/29/18 16:36
1-3	1803379-02	Soil	03/28/18 12:11	03/29/18 16:36
2-1	1803379-03	Soil	03/28/18 10:33	03/29/18 16:36
2-4	1803379-04	Soil	03/28/18 12:00	03/29/18 16:36
3-1	1803379-05	Soil	03/28/18 10:52	03/29/18 16:36
3-2	1803379-06	Soil	03/28/18 10:42	03/29/18 16:36
4-1	1803379-07	Soil	03/28/18 11:02	03/29/18 16:36
4-3	1803379-08	Soil	03/28/18 11:30	03/29/18 16:36
4-5	1803379-09	Soil	03/28/18 11:55	03/29/18 16:36
4-6	1803379-10	Soil	03/28/18 11:49	03/29/18 16:36
5-2	1803379-11	Soil	03/28/18 11:20	03/29/18 16:36
5-3	1803379-12	Soil	03/28/18 11:36	03/29/18 16:36

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Summit Scientific

1803379.1

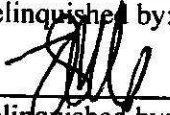
S₂

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

Client: Grynberg Petroleum Project Manager: Randy Edelen Page 1 of 2
 Address: 3600 S Yosemite St Suite 900 E-Mail: r.edelen@grynberg.com
 City/State/Zip: DENVER, CO 80237-1830 pinkanz@gmail.com
 Phone: 303-850-7490 Fax: 303-850-7498 Project Name: Croissant #1
 Sampler Name: Pinky ZAREMBA Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	PH-GRO	PH-DRD	PH	EC	SAR	
1	1-2	3/28	10:25	1			X			X									
2	1-3	3/28	12-11	1						X									
3	2-1	3/28	10:33	1						X									
4	2-4	3/28	12:00	1						X									
5	3-1	3/28	10:52	1						X									
6	3-2	3/28	10:42	1						X									
7	4-1	3/28	11:02	1						X									
8	4-3	3/28	11:30	1						X									
9	4-5	3/28	11:55	1						X									
10	4-6	3/28	11:49	1			V			X									

Relinquished by: 	Date/Time: <u>3/28 4:36pm</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3-28-18 16:36</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>7.2</u> Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

 S_2

1803379.2

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

Page 2 of 2

Client: Grynberg Petroleum

Project Manager: Randy Edelen

Address: 3600 S. Yosemite suite 900

E-Mail: r.edelen@grynberg.com

City/State/Zip: Denver CO 80237-1830

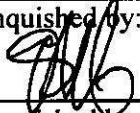

Phone: 303-850-7490 Fax: 303-850-7498

Project Name: Croissant #1

Sampler Name: PINKY ZAREMBA

Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions			
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	B-Tex	TPH - GPO	TPH - DRO	pH	EC	SAR						No metal
1	5-2	3/28	11:20	1						X			↓	↓	↓	↓	↓	↓						↓
2	5-3	3/28	11:36	1						X			↓	↓	↓	↓	↓	↓						↓
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	3/28 4:36pm	 3-28-18	16:36	Same Day	72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard <input checked="" type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours	Sample Integrity:	Temperature Upon Receipt: 7.2
				Intact: <input checked="" type="radio"/> Yes No		

1803379

Sample Receipt Checklist

S2 Work Order: _____

Client: Grynberg PetroleumClient Project ID: Croissant #1Shipped Via: H.D. on ice
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): Air X Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>7.2</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<u>X</u>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>X</u>	
Are short holding time analytes or samples due within 48 hours present?			<u>X</u>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>X</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<u>X</u>	
Note the type of preservative in the Comments column – HCL, H2SO4, NaOH, HNO3, etc.			<u>X</u>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<u>X</u>	
Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Muri
Custodian Printed Name or InitialsMA 3-28-18
Signature of Custodian18:00
Date/Time



Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

1-2
1803379-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		69.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1880	11.1	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	292	5.56	"	"	"	"	"	"	

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Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

1-2
1803379-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	63.4	5.56 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	0.359	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	1804031	04/03/18	04/04/18	% calculation	
pH	8.83	0.100	pH Units	"	1804029	04/02/18	04/02/18	EPA 9045	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.444	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

1-3
1803379-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1970	10.9	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	286	5.47	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

1-3
1803379-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	713	5.47 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	3.97	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	1804031	04/03/18	04/04/18	% calculation	
pH	8.04	0.100	pH Units	"	1804029	04/02/18	04/02/18	EPA 9045	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.66	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

2-1
1803379-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1300	10.4	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	129	5.21	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

2-1
1803379-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	64.0	5.21	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	0.453		units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37	0.100	pH Units	1	1804029	04/02/18	04/02/18	EPA 9045	
% Solids	96.0		%	"	1804031	04/03/18	04/04/18	% calculation	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 10:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.414	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

2-4
1803379-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.6 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1950	10.5	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	222	5.25	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

2-4
1803379-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	398	5.25 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	2.28	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.90	0.100	pH Units	1	1804029	04/02/18	04/02/18	EPA 9045	
% Solids	95.2		%	"	1804031	04/03/18	04/04/18	% calculation	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.861	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

3-1
1803379-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2030	10.7	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	145	5.35	"	"	"	"	"	"	

Summit Scientific

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

3-1
1803379-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	2680	5.35 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	15.5	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.35	0.100	pH Units	1	1804029	04/02/18	04/02/18	EPA 9045	
% Solids	93.5		%	"	1804031	04/03/18	04/04/18	% calculation	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.398	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

3-2
1803379-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.1 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8460	11.0	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	640	5.52	"	"	"	"	"	"	

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Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

3-2
1803379-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	4860	5.52 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	13.7	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08	0.100	pH Units	1	1804029	04/02/18	04/02/18	EPA 9045	
% Solids	90.6		%	"	1804031	04/03/18	04/04/18	% calculation	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	17.3	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-1
1803379-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.7 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1860	10.5	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	176	5.24	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-1
1803379-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	230	5.24 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	1.37	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.4		%	1	1804031	04/03/18	04/04/18	% calculation	
pH	8.75	0.100	pH Units	"	1804029	04/02/18	04/02/18	EPA 9045	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 11:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.611	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-3
1803379-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.0 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12400	11.2	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	558	5.60	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-3
1803379-08 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	5220	5.60 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	12.5	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.10	0.100	pH Units	1	1804029	04/02/18	04/02/18	EPA 9045	
% Solids	89.3		%	"	1804031	04/03/18	04/04/18	% calculation	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	11.1	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-5
1803379-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.2 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.5 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2390	10.6	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	205	5.32	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-5
1803379-09 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	182	5.32 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	0.960	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.9		%	1	1804031	04/03/18	04/04/18	% calculation	
pH	8.32	0.100	pH Units	"	1804029	04/02/18	04/02/18	EPA 9045	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.466	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-6
1803379-10 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.2 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4260	11.3	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	486	5.67	"	"	"	"	"	"	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

4-6
1803379-10 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	1450	5.67 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	5.61	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	1804031	04/03/18	04/04/18	% calculation	
pH	7.95	0.100	pH Units	"	1804029	04/02/18	04/02/18	EPA 9045	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.50	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

5-2
1803379-11 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/30/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.1 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	908	10.9	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	136	5.45	"	"	"	"	"	"	

Summit Scientific

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

5-2
1803379-11 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	142	5.45 mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	1.16	units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	1804031	04/03/18	04/04/18	% calculation	
pH	8.22	0.100	pH Units	"	1804029	04/02/18	04/02/18	EPA 9045	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.797	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

5-3
1803379-12 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1803358	03/30/18	04/03/18	8015M	

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1803357	03/30/18	03/31/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.4 %	21-167		"	"	"	"	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	441	11.4	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	132	5.71	"	"	"	"	"	"	

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

5-3
1803379-12 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Sodium	38.2	5.71	mg/kg dry	1	1804008	04/02/18	04/03/18	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium Adsorption Ratio	0.410		units	"	1804021	04/03/18	04/04/18	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.76	0.100	pH Units	1	1804029	04/02/18	04/02/18	EPA 9045	
% Solids	87.6		%	"	1804031	04/03/18	04/04/18	% calculation	

Specific Conductance by EPA120.1

Date Sampled: **03/28/18 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.686	0.0100	mmhos/cm	1	1804030	04/03/18	04/04/18	EPA 120.1	

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1803358 - EPA 3550A

Blank (1803358-BLK1)

Prepared: 03/30/18 Analyzed: 04/03/18

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.1 " 12.5 105 30-150

LCS (1803358-BS1)

Prepared: 03/30/18 Analyzed: 04/03/18

C10-C28 (DRO) 423 50 mg/kg 499 84.8 73-134

Surrogate: o-Terphenyl 13.5 " 12.5 108 30-150

Matrix Spike (1803358-MS1)

Source: 1803377-01

Prepared: 03/30/18 Analyzed: 04/03/18

C10-C28 (DRO) 391 50 mg/kg 499 57.2 66.9 50-148

Surrogate: o-Terphenyl 12.1 " 12.5 96.6 30-150

Matrix Spike Dup (1803358-MSD1)

Source: 1803377-01

Prepared: 03/30/18 Analyzed: 04/03/18

C10-C28 (DRO) 428 50 mg/kg 499 57.2 74.3 50-148 9.00 20

Surrogate: o-Terphenyl 13.3 " 12.5 106 30-150

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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1803357 - EPA 5030 Soil MS

Blank (1803357-BLK1)

Prepared & Analyzed: 03/30/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.2	23-173			
Surrogate: Toluene-d8	0.0369		"	0.0400		92.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0369		"	0.0400		92.2	21-167			

LCS (1803357-BS1)

Prepared & Analyzed: 03/30/18

Benzene	0.133	0.0020	mg/kg	0.150		88.4	58-130			
Toluene	0.133	0.0050	"	0.150		88.5	61-134			
Ethylbenzene	0.138	0.0050	"	0.150		92.1	74-139			
m,p-Xylene	0.273	0.010	"	0.300		91.0	73-137			
o-Xylene	0.138	0.0050	"	0.150		91.9	73-141			
Xylenes (total)	0.411	0.0050	"				30-150			
Gasoline Range Hydrocarbons	21.0	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0356		"	0.0400		89.0	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.6	21-167			

Matrix Spike (1803357-MS1)

Source: 1803377-01

Prepared & Analyzed: 03/30/18

Benzene	0.142	0.0020	mg/kg	0.150	ND	94.5	30-131			
Toluene	0.140	0.0050	"	0.150	ND	93.2	30-134			
Ethylbenzene	0.149	0.0050	"	0.150	ND	99.6	22-153			
m,p-Xylene	0.289	0.010	"	0.300	ND	96.3	10-159			
o-Xylene	0.144	0.0050	"	0.150	ND	95.7	31-151			
Xylenes (total)	0.433	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	20.4	0.50	"		0.202		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0359		"	0.0400		89.8	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167			

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3600 S. Yosemite St, Suite 900
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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1803357 - EPA 5030 Soil MS

Matrix Spike Dup (1803357-MSD1)		Source: 1803377-01			Prepared & Analyzed: 03/30/18					
Benzene	0.145	0.0020	mg/kg	0.150	ND	96.7	30-131	2.36	34	
Toluene	0.143	0.0050	"	0.150	ND	95.3	30-134	2.31	30	
Ethylbenzene	0.148	0.0050	"	0.150	ND	98.9	22-153	0.726	24	
m,p-Xylene	0.285	0.010	"	0.300	ND	95.0	10-159	1.43	68	
o-Xylene	0.142	0.0050	"	0.150	ND	94.8	31-151	0.945	38	
Xylenes (total)	0.427	0.0050	"		ND		30-150	1.27	20	
Gasoline Range Hydrocarbons	19.9	0.50	"		0.202		30-150	2.38	20	
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		91.1	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		93.9	21-167			

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Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

Reporting				Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1804008 - General Preparation

Blank (1804008-BLK1)

Prepared & Analyzed: 04/02/18

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

LCS (1804008-BS1)

Prepared & Analyzed: 04/02/18

Calcium	530	10.0	mg/kg wet	500	106	82.9-118
Magnesium	514	5.00	"	500	103	77.1-123
Sodium	557	5.00	"	500	111	71-129

Duplicate (1804008-DUP1)

Source: 1803357-04

Prepared & Analyzed: 04/02/18

Calcium	9640	11.4	mg/kg dry	10200	5.87	200
Magnesium	1070	5.70	"	1010	5.82	200
Sodium	82.0	5.70	"	77.0	6.34	200

Matrix Spike (1804008-MS1)

Source: 1803357-04

Prepared & Analyzed: 04/02/18

Calcium	10900	11.4	mg/kg dry	570	10200	121	75-125
Magnesium	1660	5.70	"	570	1010	113	75-125
Sodium	715	5.70	"	570	77.0	112	75-125

Matrix Spike Dup (1804008-MSD1)

Source: 1803357-04

Prepared & Analyzed: 04/02/18

Calcium	10900	11.4	mg/kg dry	570	10200	118	75-125	0.163	25
Magnesium	1640	5.70	"	570	1010	110	75-125	1.06	25
Sodium	722	5.70	"	570	77.0	113	75-125	1.07	25

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
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Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1804029 - General Preparation

LCS (1804029-BS1)

Prepared: 04/03/18 Analyzed: 04/04/18

pH	9.16	0.100	pH Units	9.16	100	95-105
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Duplicate (1804029-DUP1)

Source: 1804004-02

Prepared: 04/03/18 Analyzed: 04/04/18

pH	8.65	0.100	pH Units	8.62	0.347	20
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Batch 1804031 - General Preparation

Duplicate (1804031-DUP1)

Source: 1803400-01

Prepared: 04/03/18 Analyzed: 04/04/18

% Solids	95.9		%	96.3	0.416	20
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3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Specific Conductance by EPA120.1 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1804030 - General Preparation

Blank (1804030-BLK1)

Prepared: 04/03/18 Analyzed: 04/04/18

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1804030-BS1)

Prepared: 04/03/18 Analyzed: 04/04/18

Specific Conductance (EC) 0.750 0.0100 mmhos/cm 0.750 100 90-110

Duplicate (1804030-DUP1)

Source: 1804004-02

Prepared: 04/03/18 Analyzed: 04/04/18

Specific Conductance (EC) 0.410 0.0100 mmhos/cm 0.410 0.0366 20

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Grynberg Petroleum
3600 S. Yosemite St, Suite 900
Denver CO, 80237-1830

Project: Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
04/05/18 15:18

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference