

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 03, 2018

Randy Edelen
Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver, CO 80237
RE: WH Croissant #4

Enclosed are the results of analyses for samples received by Summit Scientific on 04/26/18 16:37. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Ben Shrewsbury
Laboratory Manager



Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

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

Reported:
05/03/18 17:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH 6-2	1804376-01	Soil	04/26/18 13:32	04/26/18 16:37
WH 6-4	1804376-02	Soil	04/26/18 13:25	04/26/18 16:37
WH 4-6	1804376-03	Soil	04/26/18 13:40	04/26/18 16:37
WH 2-6	1804376-04	Soil	04/26/18 13:48	04/26/18 16:37

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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.

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S₂

1804376

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: Grynberg Petroleum

Project Manager: Randy Edelen

Address: 3600 S Yosemite St, suite 900

E-Mail: r.edelen@grynberg.com

City/State/Zip: Denver CO 80237

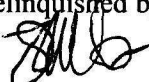
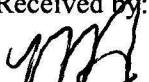
Phone: 303-850-7498 Fax:

Project Name: Croissant #4 WH

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)	B-Tex	TPH GRO	TPH ORD	SAR	EC	PH		
1	WH 6-2	4/28	1:32	1																
2	WH 6-4	4/28	1:25	1																
3	WH 4-6	4/26	1:40	1																
4	WH 2-6	4/26	1:48	1																
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by:  Pinky Zarembo	Date/Time: 4/26 4:37	Received by: 	Date/Time: 4/26/18 11:03	Turn Around Time (Check)	Notes: on ice
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day _____ 72 hours	
				24 hours _____ Standard <input checked="" type="checkbox"/>	
				48 hours _____	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: 11.3°C	
				Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

1804376

S2 Work Order: _____

Client: Grossberg Petroleum Client Project ID: CROISSANT #4 WH

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

Airbill #: _____

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

Cooler ID					
Temp (°C)	11.3°				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
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⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form 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 w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

LP
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/24/2018 1647
Date/Time



Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

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

Reported:
05/03/18 17:41

WH 6-2
1804376-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1804312	04/30/18	05/01/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.9 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		103 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.9 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804311	"	05/02/18	EPA 8015M	

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.9 %	30-150		"	"	"	"	

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

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	563	10.4	mg/kg dry	1	1805024	05/02/18	05/02/18	EPA 6020B	
Magnesium	137	5.18	"	"	"	"	"	"	

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

Reported:
05/03/18 17:41

WH 6-2
1804376-01 (Soil)

Summit Scientific

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

Sodium	160	5.18 mg/kg dry	1	1805024	05/02/18	05/02/18	EPA 6020B
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Calculated Analysis

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.57	0.100	units	1	1805043	05/03/18	05/03/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.4		%	1	1805012	05/01/18	05/02/18	Calculation	
pH	8.1		pH Units	"	1805037	05/03/18	05/03/18	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/26/18 13:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.531	0.0100	mmhos/cm	1	1805038	05/03/18	05/03/18	EPA 120.1	

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

Reported:
05/03/18 17:41

WH 6-4
1804376-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1804312	04/30/18	05/01/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.3 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		104 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.3 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804311	"	05/02/18	EPA 8015M	

Date Sampled: **04/26/18 13:25**

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

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

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1030	10.4	mg/kg dry	1	1805024	05/02/18	05/02/18	EPA 6020B	
Magnesium	154	5.22	"	"	"	"	"	"	
Sodium	50.2	5.22	"	"	"	"	"	"	

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Reported:
05/03/18 17:41

WH 6-4
1804376-02 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.390	0.100	units	1	1805043	05/03/18	05/03/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.8		%	1	1805012	05/01/18	05/02/18	Calculation	
pH	8.8		pH Units	"	1805037	05/03/18	05/03/18	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/26/18 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.376	0.0100	mmhos/cm	1	1805038	05/03/18	05/03/18	EPA 120.1	

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

Reported:
05/03/18 17:41

WH 4-6
1804376-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1804312	04/30/18	05/01/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.0 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		103 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.7 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804311	"	05/02/18	EPA 8015M	

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

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

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	724	10.6	mg/kg dry	1	1805024	05/02/18	05/02/18	EPA 6020B	
Magnesium	164	5.30	"	"	"	"	"	"	
Sodium	202	5.30	"	"	"	"	"	"	

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Project: WH Croissant #4
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Project Manager: Randy Edelen

Reported:
05/03/18 17:41

WH 4-6
1804376-03 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.76	0.100	units	1	1805043	05/03/18	05/03/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.4		%	1	1805012	05/01/18	05/02/18	Calculation	
pH	8.2		pH Units	"	1805037	05/03/18	05/03/18	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/26/18 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.394	0.0100	mmhos/cm	1	1805038	05/03/18	05/03/18	EPA 120.1	

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
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Project: WH Croissant #4
Project Number: [none]
Project Manager: Randy Edelen

Reported:
05/03/18 17:41

WH 2-6
1804376-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1804312	04/30/18	05/02/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.7 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		103 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.8 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1804311	"	05/02/18	EPA 8015M	

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.8 %	30-150		"	"	"	"	

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

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1140	10.8	mg/kg dry	1	1805024	05/02/18	05/02/18	EPA 6020B	
Magnesium	193	5.39	"	"	"	"	"	"	
Sodium	65.4	5.39	"	"	"	"	"	"	

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

Reported:
05/03/18 17:41

WH 2-6
1804376-04 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.470	0.100	units	1	1805043	05/03/18	05/03/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.8		%	1	1805012	05/01/18	05/02/18	Calculation	
pH	8.9		pH Units	"	1805037	05/03/18	05/03/18	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/26/18 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.81	0.0100	mmhos/cm	1	1805038	05/03/18	05/03/18	EPA 120.1	

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3600 S Yosemite Suite 900
Denver CO, 80237

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

Reported:
05/03/18 17:41

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 1804312 - EPA 5030 Soil MS

Blank (1804312-BLK1)

Prepared: 04/30/18 Analyzed: 05/01/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0324		"	0.0396		81.9	70-130			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0330		"	0.0400		82.4	70-130			

LCS (1804312-BS1)

Prepared: 04/30/18 Analyzed: 05/01/18

Benzene	0.0788	0.0020	mg/kg	0.100		78.8	70-130			
Toluene	0.0887	0.0050	"	0.100		88.7	70-130			
Ethylbenzene	0.0985	0.0050	"	0.100		98.5	70-130			
m,p-Xylene	0.196	0.010	"	0.200		98.1	70-130			
o-Xylene	0.0958	0.0050	"	0.100		95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0334		"	0.0396		84.5	70-130			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0326		"	0.0400		81.4	70-130			

Matrix Spike (1804312-MS1)

Source: 1804360-01

Prepared: 04/30/18 Analyzed: 05/01/18

Benzene	0.0769	0.0020	mg/kg	0.100	ND	76.9	70-130			
Toluene	0.0857	0.0050	"	0.100	ND	85.7	70-130			
Ethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
m,p-Xylene	0.189	0.010	"	0.200	ND	94.3	70-130			
o-Xylene	0.0910	0.0050	"	0.100	ND	91.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0334		"	0.0396		84.3	70-130			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0323		"	0.0400		80.9	70-130			

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3600 S Yosemite Suite 900
Denver CO, 80237

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

Reported:
05/03/18 17:41

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 1804312 - EPA 5030 Soil MS

Matrix Spike Dup (1804312-MSD1)		Source: 1804360-01			Prepared: 04/30/18		Analyzed: 05/01/18			
Benzene	0.0860	0.0020	mg/kg	0.100	ND	86.0	70-130	11.1	30	
Toluene	0.0958	0.0050	"	0.100	ND	95.8	70-130	11.1	30	
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	11.6	30	
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130	11.9	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	14.5	30	
Surrogate: 1,2-Dichloroethane-d4	0.0323		"	0.0396		81.5	70-130			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0329		"	0.0400		82.2	70-130			

Summit Scientific

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

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

Reported:
05/03/18 17:41

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 1804311 - EPA 3550A

Blank (1804311-BLK1)

Prepared: 04/30/18 Analyzed: 05/02/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1804311-BS1)

Prepared: 04/30/18 Analyzed: 05/02/18

C10-C28 (DRO) 415 50 mg/kg 500 83.0 81.4-129

Matrix Spike (1804311-MS1)

Source: 1804320-02

Prepared: 04/30/18 Analyzed: 05/02/18

C10-C28 (DRO) 426 50 mg/kg 500 27.6 79.8 77.8-133

Matrix Spike Dup (1804311-MSD1)

Source: 1804320-02

Prepared: 04/30/18 Analyzed: 05/02/18

C10-C28 (DRO) 449 50 mg/kg 500 27.6 84.3 77.8-133 5.13 8.48

Summit Scientific

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

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

Reported:
05/03/18 17:41

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

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

Batch 1805024 - General Preparation

Blank (1805024-BLK1)

Prepared & Analyzed: 05/02/18

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

LCS (1805024-BS1)

Prepared & Analyzed: 05/02/18

Calcium	475	10.0	mg/kg wet	500	94.9	70-130
Magnesium	450	5.00	"	500	90.0	70-130
Sodium	467	5.00	"	500	93.4	70-130

Duplicate (1805024-DUP1)

Source: 1804360-01

Prepared & Analyzed: 05/02/18

Calcium	471	11.1	mg/kg dry	440	6.74	20
Magnesium	287	5.57	"	293	2.12	20
Sodium	116	5.57	"	133	13.9	20

Matrix Spike (1805024-MS1)

Source: 1804360-01

Prepared & Analyzed: 05/02/18

Calcium	893	11.1	mg/kg dry	557	440	81.3	70-130
Magnesium	857	5.57	"	557	293	101	70-130
Sodium	650	5.57	"	557	133	92.8	70-130

Matrix Spike Dup (1805024-MSD1)

Source: 1804360-01

Prepared & Analyzed: 05/02/18

Calcium	877	11.1	mg/kg dry	557	440	78.3	70-130	1.88	25
Magnesium	771	5.57	"	557	293	85.8	70-130	10.5	25
Sodium	578	5.57	"	557	133	80.0	70-130	11.7	25

Summit Scientific

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4

Project Number: [none]
Project Manager: Randy Edelen

Reported:
05/03/18 17:41

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 1805012 - General Preparation

Duplicate (1805012-DUP1) **Source: 1804413-01** Prepared: 05/01/18 Analyzed: 05/02/18

% Solids	97.5		%		96.2			1.33	20	
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Batch 1805037 - General Preparation

Duplicate (1805037-DUP1) **Source: 1804360-01** Prepared & Analyzed: 05/03/18

pH	8.2		pH Units		8.2			0.123	20	
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Summit Scientific

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4

Project Number: [none]
Project Manager: Randy Edelen

Reported:
05/03/18 17:41

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 1805038 - General Preparation

Duplicate (1805038-DUP1)

Source: 1804360-01

Prepared & Analyzed: 05/03/18

Specific Conductance (EC)	0.780	0.0100	mmhos/cm	0.772	0.902	20
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Summit Scientific

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Grynberg Petroleum Company
3600 S Yosemite Suite 900
Denver CO, 80237

Project: WH Croissant #4

Project Number: [none]
Project Manager: Randy Edelen

Reported:
05/03/18 17:41

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