

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 23, 2020

Brent Hedstrom
Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie, WY 82070

RE: Kats 41-34

Work Order #2011151

Enclosed are the results of analyses for samples received by Summit Scientific on 11/12/20 11:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President



Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie WY, 82070

Project: Kats 41-34
Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/23/20 16:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Surface casing	2011151-01	Water	11/02/20 00:00	11/12/20 11:10

Summit Scientific

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S₂

2011151

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: Crestone Peak Resources

Project Manager: Brent Hedstrom

Address: 10188 East I-25 Frontage road

E-Mail: brent.hedstrom@crestonepr.com

City/State/Zip: Firestone, CO 80504

AFE 16192929.1 Code 9728 COGCC 321

Phone: 303-434-3007

Project Name: Kats 41-34

Sampler Name:

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Anion	Cations	TDS	BTEX 8020	DRO	GRO	RSK-175		
1	Surface casing	11/2/2020		9		X	X			X				X	X	X	X	X	X	X	
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: <i>Bb</i>	Date/Time: <i>11/2/20 11:0</i>	Received by: <i>MA</i>	Date/Time: <i>11-12-20 11:10</i>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input type="checkbox"/>	72 hours <input type="checkbox"/>
				24 hours <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <i>6.2</i>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

2011151

Sample Receipt Checklist

S2 Work Order _____

Client: Crestone Peak Resources Client Project ID: Kats 41-34

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

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

Temp (°C)	6.2
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Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

MP
Custodian Printed Name or Initials

Muri Premer
Signature of Custodian

11/12/20
Date/Time



Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie WY, 82070

Project: Kats 41-34

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/23/20 16:10

Surface casing
2011151-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	24	10		ug/l	10	BDK0195	11/17/20	11/19/20	EPA 8260B	
Toluene	2.7	1.0		"	1	"	"	"	"	
Ethylbenzene	ND	10		"	10	"	"	"	"	
Xylenes (total)	45	20		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2000	500		"	1	"	"	"	"	

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		95.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	5.0		mg/L	1	BDK0196	11/17/20	11/19/20	EPA 8015M	

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		94.3 %		58.9-148		"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Methane	3.4	1.0		mg/L	100	BDK0224	11/17/20	11/19/20	RSK-175 mod	
Ethane	0.25	0.10		"	10	"	"	"	"	
Propane	ND	0.010		"	1	"	"	"	"	

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Project: Kats 41-34

Project Number: [none]
 Project Manager: Brent Hedstrom

Reported:
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**Surface casing
 2011151-01 (Water)**

Summit Scientific

Dissolved Gases by RSK-175

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		143 %	70-130		BDK0224	11/17/20	11/19/20	RSK-175 mod	S-04

Total Metals by EPA Method 200.8

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1960	500	ug/l	10	BDK0168	11/16/20	11/16/20	EPA 200.8	
Magnesium	475	50.0	"	1	"	"	"	"	
Potassium	3230	500	"	10	"	"	"	"	
Sodium	234000	500	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	90.4	12.0	mg/L	200	BDK0156	11/16/20	11/16/20	EPA 300.0	
Sulfate	70.0	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **11/02/20 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	647	10.0	mg/L	1	BDK0160	11/13/20	11/13/20	SM2540C	I-03

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Project: Kats 41-34

Project Number: [none]
 Project Manager: Brent Hedstrom

Reported:
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Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

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

Batch BDK0196 - EPA 3520B

Blank (BDK0196-BLK1)

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) ND 5.0 mg/L

LCS (BDK0196-BS1)

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) 49.0 5.0 mg/L 50.0 98.0 70-130

Matrix Spike (BDK0196-MS1)

Source: 2011148-01

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) 50.3 5.0 mg/L 50.0 4.26 92.0 70-130

Matrix Spike Dup (BDK0196-MSD1)

Source: 2011148-01

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) 49.0 5.0 mg/L 50.0 4.26 89.5 70-130 2.50 20

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Project: Kats 41-34

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/23/20 16:10

Dissolved Gases by RSK-175 - Quality Control
Summit Scientific

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

Batch BDK0224 - GC

Blank (BDK0224-BLK1)

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
<i>Surrogate: Ethene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0364</i>		<i>109</i>	<i>70-130</i>			

LCS (BDK0224-BS1)

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	0.033	0.010	mg/L	0.0428		77.4	70-130			
Ethane	0.077	0.010	"	0.0798		96.2	70-130			
Propane	0.12	0.010	"	0.139		83.5	70-130			
<i>Surrogate: Ethene</i>	<i>0.0692</i>		<i>"</i>	<i>0.0728</i>		<i>95.1</i>	<i>70-130</i>			

Duplicate (BDK0224-DUP1)

Source: 2011145-01

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	3.5	1.0	mg/L		3.4			2.60	30	
Ethane	2.2	1.0	"		2.4			6.68	30	
Propane	2.0	1.0	"		2.0			0.603	30	
<i>Surrogate: Ethene</i>	<i>0.0500</i>		<i>"</i>	<i>0.0364</i>		<i>137</i>	<i>70-130</i>			<i>S-06</i>

Matrix Spike (BDK0224-MS1)

Source: 2011145-01

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	4.3	1.0	mg/L	0.0428	3.4	NR	70-130			QM-02
Ethane	2.5	1.0	"	0.0798	2.4	198	70-130			QM-02
Propane	1.9	1.0	"	0.139	2.0	NR	70-130			QM-02
<i>Surrogate: Ethene</i>	<i>0.0600</i>		<i>"</i>	<i>0.0728</i>		<i>82.4</i>	<i>70-130</i>			

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Project Number: [none]
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Total Metals by EPA Method 200.8 - Quality Control
Summit Scientific

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

Batch BDK0168 - EPA 200.8

Blank (BDK0168-BLK1)

Prepared & Analyzed: 11/16/20

Calcium	ND	50.0	ug/l								
Magnesium	ND	50.0	"								
Potassium	ND	50.0	"								
Sodium	ND	50.0	"								

LCS (BDK0168-BS1)

Prepared & Analyzed: 11/16/20

Calcium	5300	50.0	ug/l	5000	106	85-115					
Magnesium	4470	50.0	"	5000	89.4	85-115					
Potassium	4330	50.0	"	5000	86.5	85-115					
Sodium	4260	50.0	"	5000	85.2	85-115					

Duplicate (BDK0168-DUP1)

Source: 2011178-01

Prepared & Analyzed: 11/16/20

Calcium	6060	50.0	ug/l	6120			0.927	20			
Magnesium	12000	50.0	"	11700			2.35	20			
Potassium	4360	50.0	"	5230			18.2	20			
Sodium	255000	50.0	"	330000			25.8	20			QM-02

Matrix Spike (BDK0168-MS1)

Source: 2011178-01

Prepared & Analyzed: 11/16/20

Calcium	11600	50.0	ug/l	5000	6120	109	70-130				
Magnesium	15600	50.0	"	5000	11700	77.6	70-130				
Potassium	11300	50.0	"	5000	5230	122	70-130				
Sodium	214000	50.0	"	5000	330000	NR	70-130				QM-02

Matrix Spike Dup (BDK0168-MSD1)

Source: 2011178-01

Prepared & Analyzed: 11/16/20

Calcium	11500	50.0	ug/l	5000	6120	108	70-130	0.436	25		
Magnesium	16400	50.0	"	5000	11700	93.6	70-130	4.99	25		
Potassium	9810	50.0	"	5000	5230	91.6	70-130	14.4	25		
Sodium	254000	50.0	"	5000	330000	NR	70-130	17.1	25		QM-02

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Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BDK0156 - General Preparation

Blank (BDK0156-BLK1)

Prepared & Analyzed: 11/16/20

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BDK0156-BS1)

Prepared & Analyzed: 11/16/20

Chloride	2.97	0.0600	mg/L	3.00	99.0	90-110			
Sulfate	15.8	0.300	"	15.0	105	90-110			

Duplicate (BDK0156-DUP1)

Source: 2011144-01

Prepared & Analyzed: 11/16/20

Sulfate	38.2	60.0	mg/L		38.6		1.04	20	
Chloride	13.4	12.0	"		14.6		8.57	20	

Matrix Spike (BDK0156-MS1)

Source: 2011144-01

Prepared & Analyzed: 11/16/20

Sulfate	3060	60.0	mg/L	3000	38.6	101	80-120		
Chloride	569	12.0	"	600	14.6	92.4	80-120		

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Project: Kats 41-34

Project Number: [none]
 Project Manager: Brent Hedstrom

Reported:
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Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BDK0160 - General Preparation

Blank (BDK0160-BLK1)

Prepared & Analyzed: 11/13/20

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BDK0160-DUP1)

Source: 2011144-01

Prepared & Analyzed: 11/13/20

Total Dissolved Solids 1440 10.0 mg/L 1440 0.0696 20

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Project: Kats 41-34

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-04 A sample matrix effect prevented complete surrogate recovery.
- QM-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- I-03 This sample was recieved and analyzed outside of the recommended holding time.
- 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