

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 26, 2020

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

RE: Wigget 13-2

Work Order #2008183

Enclosed are the results of analyses for samples received by Summit Scientific on 08/19/20 14:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Wigget 13-2

Project Number: COGCC 206613 LOE W768304

Project Manager: Brent Hedstrom

**Reported:**  
08/26/20 10:58

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Surface Casing	2008183-01	Water	08/11/20 11:13	08/19/20 14:40

Summit Scientific

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# Summit Scientific

S<sub>2</sub>

2008183

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
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Page 1 of 1

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

LOE W768304

Phone: 303-434-3007

Project Name: Wigget 13-2



COGCC 206613

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	8/11/2020	11:13	9															X	X	X	X	X	X	X		
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

Relinquished by: 	Date/Time: 8/19/20 1440	Received by: 	Date/Time: 08-19-20 14:40	<b>Turn Around Time</b> (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> <b>Sample Integrity:</b> Temperature Upon Receipt: 10.2 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b>  ON ICE
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

### Sample Receipt Checklist

S2 Work Order 2008183

Client: Crestone Peak Resources Client Project ID: Wigget 13-2

Shipped Via:  H.D.  P.U.  FedEx  UPS  USPS  Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

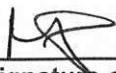
Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	10.2
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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 <sup>(1)</sup> ? 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? 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 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Additional Comments (if any):</u>				
samples may need further preservation				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

MP  
Custodian Printed Name or Initials

  
Signature of Custodian

8/19/20  
Date/Time



Crestone Peak Resources  
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Laramie WY, 82070

Project: Wigget 13-2  
Project Number: COGCC 206613 LOE W768304  
Project Manager: Brent Hedstrom

**Reported:**  
08/26/20 10:58

**Surface Casing**  
**2008183-01 (Water)**

Summit Scientific

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/11/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	830000	10000	ug/l	10000	2008225	08/20/20	08/20/20	EPA 8260B	
Toluene	1100000	10000	"	"	"	"	"	"	
Ethylbenzene	490000	10000	"	"	"	"	"	"	
Xylenes (total)	2400000	20000	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	85000000	500000	"	1000	"	"	"	"	

Date Sampled: **08/11/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		1130 %	23-173		"	"	"	"	S-02
Surrogate: Toluene-d8		1890 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		883 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/11/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	290000	50	mg/L	10	2008224	08/20/20	08/21/20	EPA 8015M	

Date Sampled: **08/11/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		2160 %	58.9-148		"	"	"	"	S-02

**Dissolved Gases by RSK-175**

Date Sampled: **08/11/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	2.2	1.0	mg/L	100	2008223	08/20/20	08/25/20	RSK-175 mod	
Ethane	8.3	1.0	"	"	"	"	"	"	
Propane	19	1.0	"	"	"	"	"	"	

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 08/26/20 10:58

**Surface Casing**  
**2008183-01 (Water)**

**Summit Scientific**

**Dissolved Gases by RSK-175**

Date Sampled: **08/11/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		41.2 %	70-130		2008223	08/20/20	08/25/20	RSK-175 mod	S-02

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**Reported:**  
08/26/20 10:58

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch 2008225 - EPA 5030 Water MS**

**Blank (2008225-BLK1)**

Prepared: 08/20/20 Analyzed: 08/21/20

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Gasoline Range Hydrocarbons	ND	500	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.4		"	13.3		101	23-173				
<i>Surrogate: Toluene-d8</i>	12.8		"	13.3		96.4	20-170				
<i>Surrogate: 4-Bromofluorobenzene</i>	12.0		"	13.3		90.0	21-167				

**LCS (2008225-BS1)**

Prepared: 08/20/20 Analyzed: 08/21/20

Benzene	33.3	1.0	ug/l	33.3		99.8	70-130				
Toluene	34.7	1.0	"	33.3		104	70-130				
Ethylbenzene	36.2	1.0	"	33.3		109	70-130				
m,p-Xylene	72.6	2.0	"	66.7		109	70-130				
o-Xylene	34.9	1.0	"	33.3		105	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	14.1		"	13.3		106	23-173				
<i>Surrogate: Toluene-d8</i>	13.0		"	13.3		97.4	20-170				
<i>Surrogate: 4-Bromofluorobenzene</i>	11.9		"	13.3		89.3	21-167				

**Matrix Spike (2008225-MS1)**

Source: 2008175-02

Prepared: 08/20/20 Analyzed: 08/21/20

Benzene	34.0	1.0	ug/l	33.3	ND	102	70-130				
Toluene	35.4	1.0	"	33.3	ND	106	70-130				
Ethylbenzene	37.2	1.0	"	33.3	ND	112	70-130				
m,p-Xylene	74.4	2.0	"	66.7	ND	112	70-130				
o-Xylene	35.8	1.0	"	33.3	ND	107	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.9		"	13.3		105	23-173				
<i>Surrogate: Toluene-d8</i>	13.1		"	13.3		98.5	20-170				
<i>Surrogate: 4-Bromofluorobenzene</i>	11.7		"	13.3		87.8	21-167				

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**Reported:**  
 08/26/20 10:58

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

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

**Batch 2008225 - EPA 5030 Water MS**

Matrix Spike Dup (2008225-MSD1)	Source: 2008175-02			Prepared: 08/20/20 Analyzed: 08/21/20					
Benzene	33.4	1.0	ug/l	33.3	ND	100	70-130	1.81	30
Toluene	35.3	1.0	"	33.3	ND	106	70-130	0.198	30
Ethylbenzene	37.2	1.0	"	33.3	ND	112	70-130	0.108	30
m,p-Xylene	74.0	2.0	"	66.7	ND	111	70-130	0.445	30
o-Xylene	35.2	1.0	"	33.3	ND	106	70-130	1.58	30
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	23-173		
Surrogate: Toluene-d8	13.1		"	13.3		98.5	20-170		
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.4	21-167		

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**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 2008224 - EPA 3520B**

**Blank (2008224-BLK1)**

Prepared & Analyzed: 08/20/20

C10-C28 (DRO)                      ND                      5.0                      mg/L

**LCS (2008224-BS1)**

Prepared: 08/20/20    Analyzed: 08/21/20

C10-C28 (DRO)                      54.2                      5.0                      mg/L                      50.0                      108                      70-130

**LCS Dup (2008224-BSD1)**

Prepared: 08/20/20    Analyzed: 08/21/20

C10-C28 (DRO)                      53.1                      5.0                      mg/L                      50.0                      106                      70-130                      2.02                      20

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**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 2008223 - GC**

**Blank (2008223-BLK1)**

Prepared: 08/20/20 Analyzed: 08/21/20

Methane	ND	0.010	mg/L								
Ethane	ND	0.010	"								
Propane	ND	0.010	"								
Surrogate: Ethene	0.0471		"	0.0364		129	70-130				

**LCS (2008223-BS1)**

Prepared: 08/20/20 Analyzed: 08/21/20

Methane	0.034	0.010	mg/L	0.0428		79.0	70-130				
Ethane	0.098	0.010	"	0.0798		122	70-130				
Propane	0.14	0.010	"	0.139		104	70-130				
Surrogate: Ethene	0.0911		"	0.0728		125	70-130				

**Duplicate (2008223-DUP1)**

Source: 2008153-01

Prepared: 08/20/20 Analyzed: 08/21/20

Methane	1.2	0.10	mg/L		1.3			14.0	30		
Ethane	0.31	0.010	"		0.39			21.9	30		
Propane	0.056	0.010	"		0.067			17.2	30		
Surrogate: Ethene	0.0429		"	0.0364		118	70-130				

**Matrix Spike (2008223-MS1)**

Source: 2008153-01

Prepared: 08/20/20 Analyzed: 08/21/20

Methane	1.2	0.10	mg/L	0.0428	1.3	NR	70-130				QM-05
Ethane	0.39	0.010	"	0.0798	0.39	1.88	70-130				QM-05
Propane	0.19	0.010	"	0.139	0.067	90.8	70-130				
Surrogate: Ethene	0.0895		"	0.0728		123	70-130				

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### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- 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