May 12, 2020

Mr. Chris Canfield
Department of Natural Resources
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203-2136

RE: 2020 Quarter 1 Report
Billings 1 Tank Battery
NE ¼ NE ¼ SEC.34 T2N R68W 6PM
40.099394, -104.983999
Weld County, Colorado

Dear Mr. Canfield:

This report summarizes activities conducted in the first quarter of 2020 to address petroleum hydrocarbon impacts at the Billings Tank Battery (site). The Billings Well Pad and Tank Battery site is located within the Northeast Quarter of Section 34, Township 2 North, Range 68 West, of the 6th Prime Meridian (Figure 1). A site map is included (Figure 2) and analytical results (Table 2).

BACKGROUND
On May 31, 2019, a soil sample was collected from immediately northwest of the northern most tank. The soil sample was collected from a depth of 5 feet below ground surface (bgs). The soil sample was in excess of COGCC Table 910-1 allowable limits for Benzene and pH.

On August 12, 2019, twelve additional borings were advanced at the site in the area surrounding the initial sample. All of the soil samples were below the COGCC standards.

On October 15, 2019, a COGAC™ injection event was performed in the vicinity of monitoring well TMW-4. A total of 8 injection points were advanced with injection intervals ranging from 12 to 17 feet below ground surface. A total of 1,000 pounds of COGAC™ was introduced to the subsurface intervals.

Monitoring Results
Groundwater samples were collected from each well and analyzed for BTEX. Groundwater monitoring was conducted on 1/15/2020.

Monitoring well TMW-1 was reported below the COGCC Table 910-1 allowable limit.

TMW-2 and TMW-4 groundwater was not observed and unable to be sampled.

TMW-3 had only benzene concentration above Table 910-1 limit while Toluene, Ethylbenzene, and Xylene were all reported below Table 910-1 limits.

Quarterly groundwater monitoring will continue.

Please contact me if you have any questions or require additional information.

Sincerely,

David Tewkesbury
Environmental Specialist
Crestone Peak Resources
10188 E. Interstate 25 Frontage Road
Firestone, CO 80504
t 303.774.3985
c 720.236.5525
e david.tewkesbury@crestonepr.com

Attachments:
Table 1 – Groundwater Elevation Data
Table 2 – Groundwater Analytical Results
Figure 1 – Location Map
Figure 2 – Site Map
Figure 3 – Groundwater Monitoring Map (1/5/2020)
Groundwater Laboratory Report

TABLE 1 - GROUNDWATER ELEVATION
CRESTONE PEAK RESOURCES

Billings 1

Well ID	Date	Top of Casing	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Temperature (°C)	Conductivity (µS/cm)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)	pH (SU)
TMW-1	8/29/2019	100.00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	10/23/2019		DRY	DRY	DRY	DRY	DRY	DRY	DRY
	11/6/2019		DRY	DRY	DRY	DRY	DRY	DRY	DRY
	1/15/2020		8.36	91.64	NM	NM	NM	NM	NM
TMW-2	8/29/2019	100.19	15.16	85.03	NM	NM	NM	NM	NM
	10/23/2019		13.40	86.79	NM	NM	NM	NM	NM
	11/6/2019		NM	NM	NM	NM	NM	NM	NM
	1/15/2020		14.64	85.36	NM	NM	NM	NM	NM
TMW-3	8/29/2019	100.33	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	10/23/2019		DRY	DRY	DRY	DRY	DRY	DRY	DRY
	11/6/2019		17.58	82.75	NM	NM	NM	NM	NM
	1/15/2020		16.40	83.93	NM	NM	NM	NM	NM
TMW-4	8/29/2019	99.98	14.73	85.25	NM	NM	NM	NM	NM
	10/23/2019		DRY	DRY	DRY	DRY	DRY	DRY	DRY
	11/6/2019		DRY	DRY	DRY	DRY	DRY	DRY	DRY
	1/15/2020		Full of Carbon						

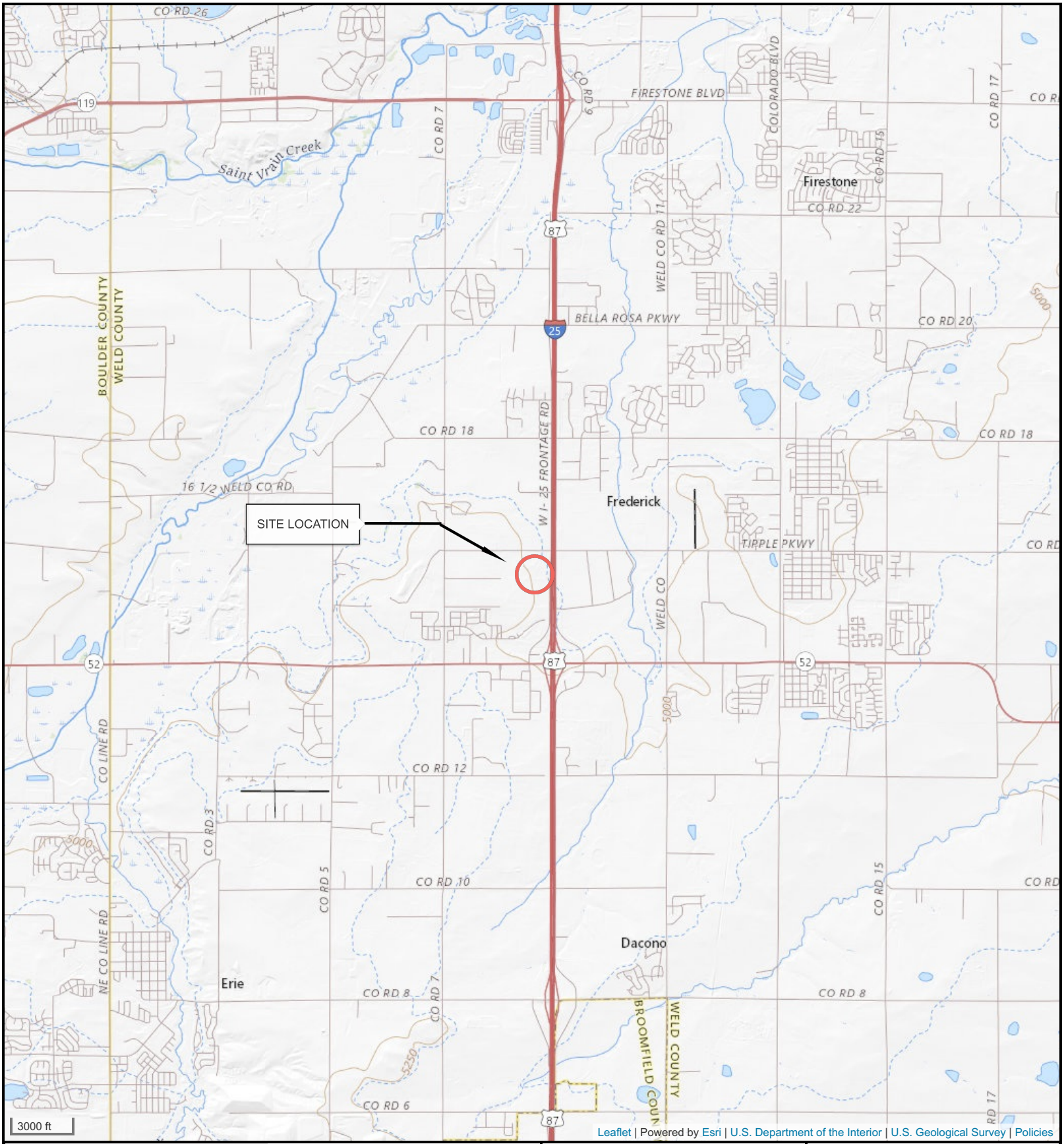
NOTES:
DES - Destroyed
NM - Not Measured

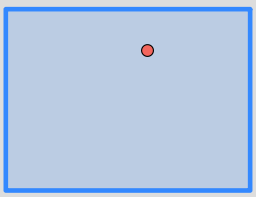
TABLE 2 - GROUNDWATER ANALYTICAL RESULTS
CRESTONE PEAK RESOURCES

Billings 1

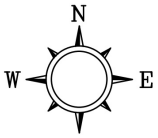
Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Table 910-1 Limit		**5**	**560**	**700**	**1,400**
TMW-1	8/29/2019	NS	NS	NS	NS
	10/23/2019	NS	NS	NS	NS
	11/6/2019	NS	NS	NS	NS
	1/15/2020	<1.0	<1.0	<1.0	<3.0
TMW-2	8/29/2019	<1.0	<1.0	<1.0	<1.0
	10/23/2019	Sample lost at lab	Sample lost at lab	Sample lost at lab	Sample lost at lab
	11/6/2019	NS	NS	NS	NS
	1/15/2020	NS	NS	NS	NS
TMW-3	8/29/2019	NS	NS	NS	NS
	10/23/2019	NS	NS	NS	NS
	11/6/2019	NS	NS	NS	NS
	1/15/2020	**7.58**	<1.0	81.5	<3.0
TMW-4	8/29/2019	**227**	<1.0	390	10
	10/23/2019	NS	NS	NS	NS
	11/6/2019	NS	NS	NS	NS
	1/15/2020	NS	NS	NS	NS

NOTES:
µg/L - micrograms per liter
BOLD - indicates result exceeds the applicable standard
< - indicates result is less than the stated laboratory reporting limit
NS - Not Sampled
COGCC Table 910-1 - Colorado Oil and Gas CoNServation Commission Table 910-1
Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B





Latitude: 40.099394
Longitude: -104.983999



CRESTONE PEAK RESOURCES

Crestone Peak Resources
Billings

FIGURE 1
SITE LOCATION MAP

40.099394, -104.983999
Frederick, Colorado

PROJECT NUMBER	BILLINGS
APPROVED BY	
CHECKED BY	
DRAWN BY	ICD 2/19/2020
FILENAME	BILLINGS_1903_2.DWG

N
W E
S

LEGEND

TMW-1/ B-1 ⊕	APPROXIMATE TEMPORARY MONITORING WELL LOCATION
B-5 ●	SOIL SAMPLE LOCATION
———	BERM
—x—x—x—x—	FENCE

NOTES

1. LOCATIONS ARE APPROXIMATE
2. COORDINATE SYSTEM: WGS 1984
   PROJECTION: TRANSVERSE MERCATOR

0 15 30
SCALE IN FEET

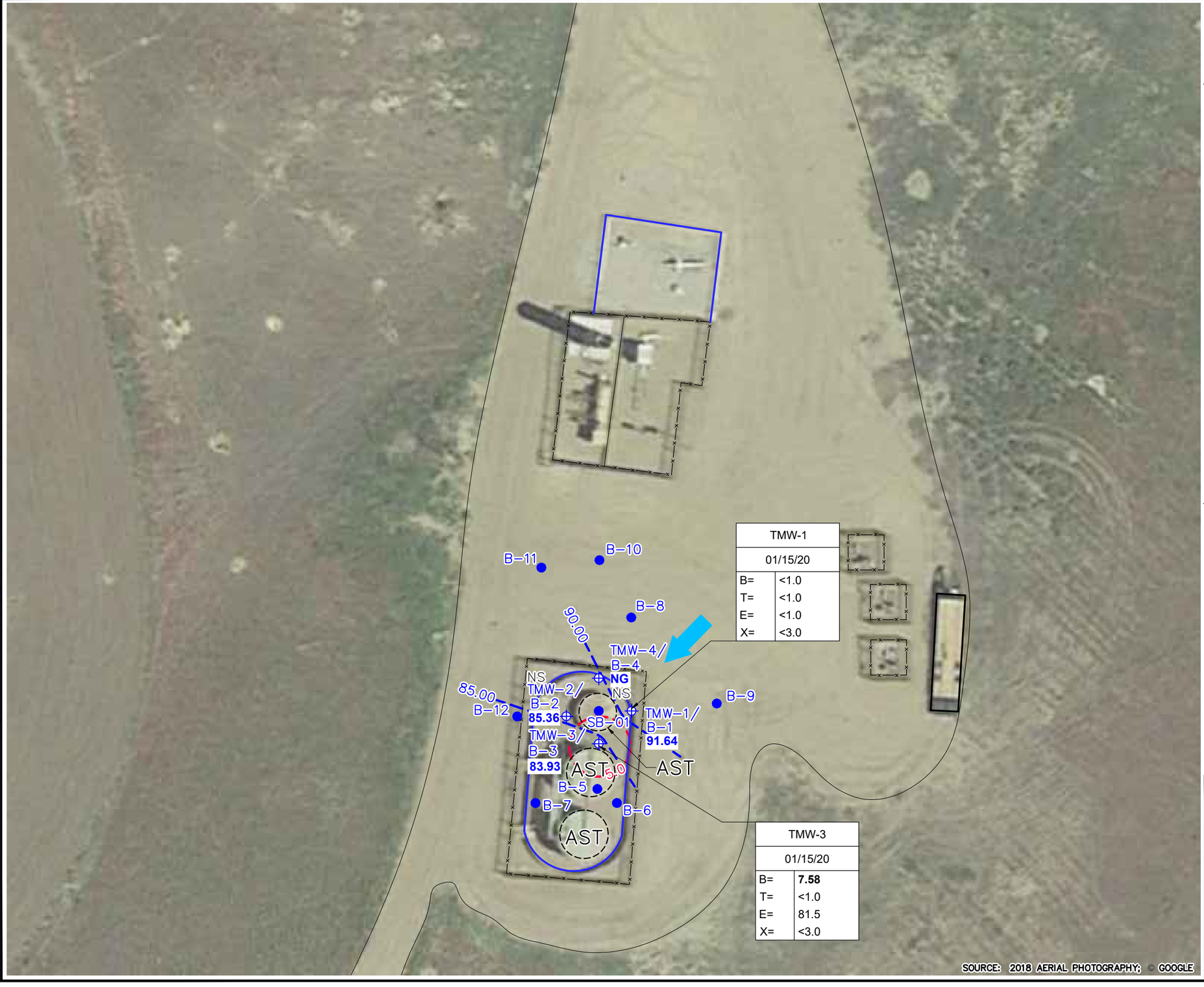
CRESTONE PEAK RESOURCES

FIGURE 2

SITE MAP

BILLINGS
40.099394, -104.983999
WELD COUNTY, COLORADO

PROJECT NUMBER	BILLINGS
APPROVED BY	
CHECKED BY	
DRAWN BY	ICD 2/20/2020
FILENAME	BILLINGS_2001.DWG



N
W E
S

LEGEND

TMW-1/B-1	APPROXIMATE TEMPORARY MONITORING WELL LOCATION
B-5	SOIL SAMPLE LOCATION
	BERM
—x—x—x—x—	FENCE
91.64	GROUNDWATER ELEVATION (FEET)
90.00	GROUNDWATER ELEVATION CONTOUR LINE (FEET)
	CONTOUR INTERVAL=5.00 FEET
	APPROXIMATE GROUNDWATER FLOW DIRECTION
NG	NOT GAUGED
5.0	BENZENE ISOCONCENTRATION CONTOUR LINE (µg/L)
B	BENZENE (µg/L)
T	TOLUENE (µg/L)
E	ETHYLBENZENE (µg/L)
X	TOTAL XYLENES (µg/L)
µg/L	MICROGRAMS PER LITER
<	NOT DETECTED ABOVE LIMIT NOTED
NS	NOT SAMPLED

BOLD VALUES INDICATE EXCEEDANCE OF APPLICABLE STANDARDS

NOTES

1. LOCATIONS ARE APPROXIMATE
2. COORDINATE SYSTEM: WGS 1984
   PROJECTION: TRANSVERSE MERCATOR

0 15 30
SCALE IN FEET

CRESTONE PEAK RESOURCES

FIGURE 3

GROUNDWATER MONITORING MAP
01/15/2020

BILLINGS
40.099394, -104.983999
WELD COUNTY, COLORADO

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 23, 2020

Crestone Peak Resources

Sample Delivery Group:	L1180991
Samples Received:	01/18/2020
Project Number:	
Description:	Billings 1

Report To: Lonnie Dent
10188 E. I-25 Frontage Road
Fireston, CO, CO 80504

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

TABLE OF CONTENTS

TMW-1 L1180991-01 GW

Collected by: Jeff Carlo
Collected date/time: 01/15/20 11:08
Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1413802	1	01/19/20 16:00	01/19/20 16:00	JCP	Mt. Juliet, TN

TMW-3 L1180991-02 GW

Collected by: Jeff Carlo
Collected date/time: 01/15/20 11:05
Received date/time: 01/18/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1413802	1	01/19/20 16:20	01/19/20 16:20	JCP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward

Chris Ward
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	01/19/2020 16:00	WG1413802
Toluene	ND		0.00100	1	01/19/2020 16:00	WG1413802
Ethylbenzene	ND		0.00100	1	01/19/2020 16:00	WG1413802
o-Xylene	ND		0.00100	1	01/19/2020 16:00	WG1413802
m&p-Xylene	ND		0.00200	1	01/19/2020 16:00	WG1413802
Total Xylenes	ND		0.00300	1	01/19/2020 16:00	WG1413802
(S) Toluene-d8	*93.1*		*80.0-120*		*01/19/2020 16:00*	WG1413802
(S) 4-Bromofluorobenzene	*90.9*		*77.0-126*		*01/19/2020 16:00*	WG1413802
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*01/19/2020 16:00*	WG1413802

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.00758		0.00100	1	01/19/2020 16:20	WG1413802
Toluene	ND		0.00100	1	01/19/2020 16:20	WG1413802
Ethylbenzene	0.0815		0.00100	1	01/19/2020 16:20	WG1413802
o-Xylene	ND		0.00100	1	01/19/2020 16:20	WG1413802
m&p-Xylene	ND		0.00200	1	01/19/2020 16:20	WG1413802
Total Xylenes	ND		0.00300	1	01/19/2020 16:20	WG1413802
(S) Toluene-d8	*86.8*		*80.0-120*		*01/19/2020 16:20*	WG1413802
(S) 4-Bromofluorobenzene	*86.1*		*77.0-126*		*01/19/2020 16:20*	WG1413802
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*01/19/2020 16:20*	WG1413802

Method Blank (MB)

(MB) R3492395-2 01/19/20 15:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
o-Xylene	U		0.000341	0.00100
m&p-Xylenes	U		0.000719	0.00200
(S) Toluene-d8	*95.4*			*80.0-120*
(S) 4-Bromofluorobenzene	*91.0*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3492395-1 01/19/20 14:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00594	119	70.0-123	
Ethylbenzene	0.00500	0.00473	94.6	79.0-123	
Toluene	0.00500	0.00504	101	79.0-120	
Xylenes, Total	0.0150	0.0148	98.7	79.0-123	
o-Xylene	0.00500	0.00484	96.8	80.0-122	
m&p-Xylenes	0.0100	0.00994	99.4	80.0-122	
(S) Toluene-d8			*93.4*	*80.0-120*	
(S) 4-Bromofluorobenzene			*93.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*107*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

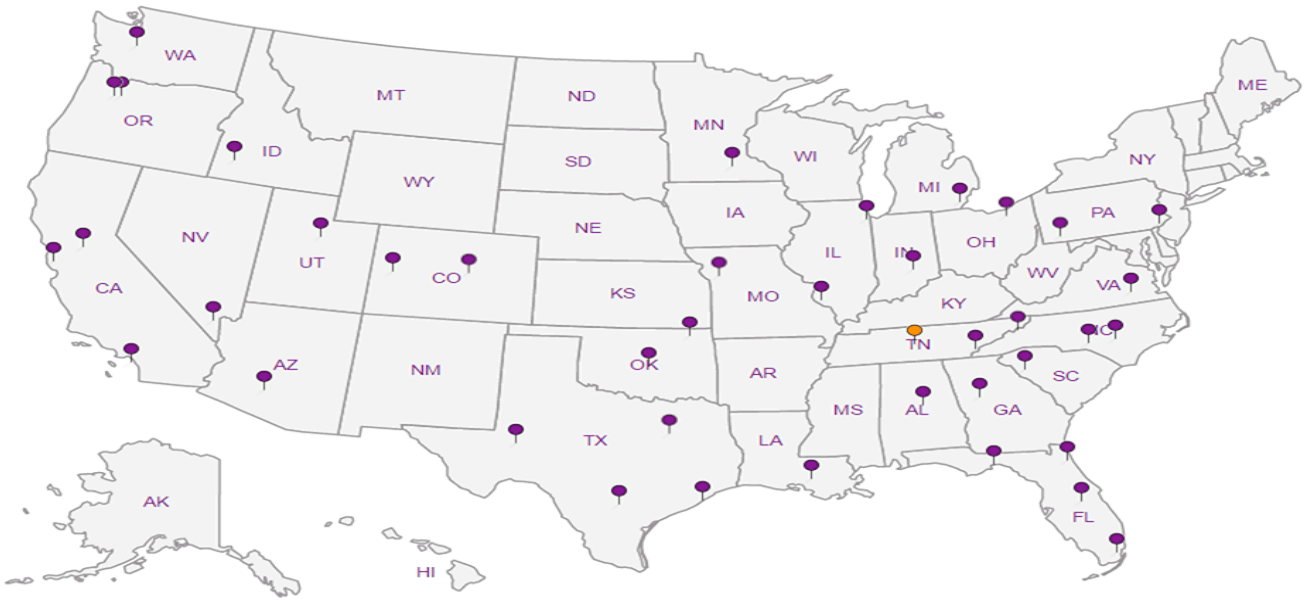
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Crestone Peak Resources

10188 E. I-25 Frontage Road
Firestone, CO 80504

Billing Information:

Report to: **Lonnie Dent**

Email To: **ldent@remingtontech.net**

Project Description: **Billings 1**

City/State Collected:

Phone: **970-278-1646**
Fax: **970-278-1645**

Client Project #

Lab Project #

Collected by (print): **Jeff Carlo**

Site/Facility ID #

P.O. # **Billings 1**

Collected by (signature): JMC

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: **Standard**

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 8260	Remarks	Sample # (lab only)
TMW-1	Grab	GW	NA	1-15-20	1108	3	X		-01
TMW-3	Grab	GW	NA	1-15-20	1105	3	X		-02

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L1180971

Table B186

Acctnum: **CREPEAFCO**

Template:

Prelogin:

TSR:

PB:

Shipped Via:

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 4510 1654 8283

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
JMC	1-15-20	1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 4.6 °C Bottles Received: 6
4.5+.2=.7

If preservation required by Login: Date/Time

Date: 1/18/20 Time: 0900

Hold:

Condition: NCF / OK