



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY:	BREITBURN OPERATING	GTA PROJECT NO:	012521-9
PROJECT NO:	MI-039-2D-0018	GTA SAMPLE NO:	1
LOCATION:	STATE BEAVER CREEK #15 SWD	DATE SAMPLED:	12/28/2020
		TIME SAMPLED:	9:00 AM
		DATE RECEIVED:	1/25/2021
		TIME RECEIVED:	5:35 PM
SAMPLED BY:	MI GD/BBOP	SAMPLE MATRIX:	WATER
SAMPLE ID:	WELL HEAD		

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
BARIUM DISS EPA 6020A	0.066	0.050	mg/L (PPM)	MR	2/10/2021	EPA 3005A
CALCIUM DISS EPA 6020A	88	0.50	mg/L (PPM)	MR	2/10/2021	EPA 3005A
IRON TOTAL EPA 6020A	18	0.50	mg/L (PPM)	MR	2/10/2021	EPA 3020A
MAGNESIUM DISS EPA 6020A	21	0.50	mg/L (PPM)	MR	2/10/2021	EPA 3005A
POTASSIUM DISS EPA 6020A	4.4	0.50	mg/L (PPM)	MR	2/10/2021	EPA 3005A
SODIUM DISS EPA 6020A	24	0.50	mg/L (PPM)	MR	2/10/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

DISS = DISSOLVED



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SAMPLE RESULTS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	160	10	mg/L (PPM)	TR	2/1/2021
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	2/1/2021
CHLORIDE EPA 300.0	90	10	mg/L (PPM)	LV	1/29/2021
CONDUCTIVITY SM2510-B	840	1.0	uS/cm@25C	LV	1/29/2021
pH EPA 150.1 - LAB	8.6	0.10	s.u.	TR	2/1/2021
RESISTIVITY SM 2510A	1,200	-	ohms x cm	LV	1/29/2021
SPECIFIC GRAVITY SM 2710F	0.9974	-	-	LV	2/3/2021
SULFATE EPA 300.0	11	10	mg/L (PPM)	LV	1/29/2021
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	1/26/2021
TOTAL DISSOLVED SOLIDS EPA 160.1	1,100	5.0	mg/L (PPM)	TR	2/2/2021

ND = NOT DETECTED, RESULT < LOD
 LOD = LIMIT OF DETECTION
 s.u. = STANDARD pH UNITS REPORTED AT 25 C
 DISS = DISSOLVED

YEAR: 2020
**ENVIRONMENTAL PROTECTION AGENCY ANNUAL MONITORING REPORT
 FOR CLASS II TYPE D INJECTION WELLS**

012521-9

UIC PERMIT No: MI-039-2D-0018
WELL NAME: State Beaver Creek #15 SWD
TYPE OF WELL: Salt Water Disposal

WELL LOCATION:

STATE	COUNTY	TOWNSHIP
Michigan	Crawford	25N
RANGE	SECTION	QTR/QTR
4W	7	SW/SW

NATURE OF INJECTED FLUID: Richfield Produced Brine and Oil Contaminated Groundwater

OPERATOR NAME: BREITBURN OPERATING, L.P.
OPERATOR ADDRESS: P.O. BOX 1256
 GAYLORD, MI 49734
PHONE NUMBER: (989) 732-0020

FREQUENCY OF MEASUREMENT: Annually

ANNUAL REQUIREMENTS:


Attached is the actual laboratory analysis of the following parameters: Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Resistivity (ohm-meters @ 25 degrees Centigrade) and Specific Gravity.

DATE OF SAMPLING	TIME OF SAMPLING	SAMPLED BY
12-28-2020	9:00 am	Greg Dudge
SAMPLE LOCATION		
Well Head		
SAMPLE METHODOLOGY AND HANDLING		
Retained in 175 mL bottle and sent to lab on:		

Date analysis was performed, individual who performed analysis, and analytical techniques or methods used is contained within the attached laboratory analysis.

Results of the analysis will be sent to: U.S. Environmental Protection Agency
 Attn: UIC Section Direct Implementation (WU-16J)
 Region V
 77 West Jackson Blvd.
 Chicago, IL 60604

I certify under the law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Signature
Name Printed

12-28-2020

Date Signed 1/25/21 5:35