

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

Company: BREITBURN OPERATING
Name:
ClientProj: 20-032
GTA ProjNo: 021020-3

Site Addr: ST. KALKASKA 1-27

Sampled By: STEVE NIEHAUS/OMPC
Date Rec: 2/10/2020
Time Rec: 2:20 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	E. BOTTOM @ 18'	2/6/2020		SOIL
2	7 BOTTOM	2/6/2020		SOIL
3	8 WALL	2/7/2020		SOIL
4	9 WALL	2/7/2020		SOIL
5	10 WALL	2/7/2020		SOIL
6	11 WALL	2/7/2020		SOIL
7	12 BOTTOM	2/7/2020		SOIL

ELECTRONIC SIGNATURE REPORT. This is a final report for the following pages of data for the samples specified above. All analysis was performed by the methods stated and all quality control measures required were completed. All quality control information is available upon request.

Kirk Chase

Kirk L. Chase/Chemist
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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: E. BOTTOM @ 18'

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 1

DATE SAMPLED: 2/6/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLED BY: STEVE NIEHAUS/OMPC

**THIS SAMPLE WAS RECEIVED MEOH PRESERVED.

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
Benzene	200	50	ug/Kg (PPB)	MR	2/6/2020	2/11/2020	EPA 5035A
Toluene	3,200	50					
Ethylbenzene	2,800	50					
Xylene(Total)	16,000	500					
1,2,4-Trimethylbenzene	15,000	430					
1,3,5-Trimethylbenzene	4,300	50					
Naphthalene	1,100	250					
2-Methylnaphthalene	5,800	250					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: 7 BOTTOM

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 2

DATE SAMPLED: 2/6/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

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**THIS SAMPLE WAS RECEIVED MEOH PRESERVED.

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
Benzene	65	50	ug/Kg (PPB)	MR	2/6/2020	2/11/2020	EPA 5035A
Toluene	380	50					
Ethylbenzene	86	50					
Xylene(Total)	380	150					
1,2,4-Trimethylbenzene	110	50					
1,3,5-Trimethylbenzene	ND	50					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: 8 WALL

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 3

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

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EPA 8260B VOLATILE ORGANICS

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Benzene	ND	50	ug/Kg (PPB)	MR	2/7/2020	2/11/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	ND	50					
1,3,5-Trimethylbenzene	ND	50					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: 9 WALL

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 4

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

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Benzene	ND	50	ug/Kg (PPB)	MR	2/7/2020	2/11/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	ND	50					
1,3,5-Trimethylbenzene	ND	50					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: 10 WALL

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 5

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

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Benzene	ND	50	ug/Kg (PPB)	MR	2/7/2020	2/11/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	ND	50					
1,3,5-Trimethylbenzene	ND	50					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: 11 WALL

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 6

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

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Benzene	ND	50	ug/Kg (PPB) MR		2/7/2020	2/11/2020	EPA 5035A
Toluene	300	50					
Ethylbenzene	84	50					
Xylene(Total)	370	150					
1,2,4-Trimethylbenzene	110	50					
1,3,5-Trimethylbenzene	65	50					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: 12 BOTTOM

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 7

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLED BY: STEVE NIEHAUS/OMPC

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EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
Benzene	190	50	ug/Kg (PPB)	MR	2/7/2020	2/11/2020	EPA 5035A
Toluene	1,800	50					
Ethylbenzene	1,000	50					
Xylene(Total)	5,600	150					
1,2,4-Trimethylbenzene	5,500	450					
1,3,5-Trimethylbenzene	1,500	50					
Naphthalene	410	250					
2-Methylnaphthalene	2,200	250					

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LOCATION: ST. KALKASKA 1-27

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 1

DATE SAMPLED: 2/6/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLED BY: MI
STEVE NIEHAUS/OMPC**SAMPLE ANALYSIS****No: Analysis**

SAMPLE ID: E. BOTTOM @ 18'

CHLORIDE EPA 300.0

Concentration

6,700

LOD

100

Units

mg/Kg (PPM) LV

Analyst**Date**

2/11/2020

Sample

SOIL

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 2

DATE SAMPLED: 2/6/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLED BY: MI
STEVE NIEHAUS/OMPC

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u>	<u>Sample</u>
	SAMPLE ID: 7 BOTTOM						
	CHLORIDE EPA 300.0	360	50	mg/Kg (PPM)	LV	2/11/2020	SOIL

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

SAMPLED BY: MI
STEVE NIEHAUS/OMPC

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 3

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u>	<u>Sample</u>
	SAMPLE ID: 8 WALL CHLORIDE EPA 300.0	ND	51	mg/Kg (PPM)	LV	2/11/2020	SOIL

ND = NOT DETECTED, RESULT < LOD

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s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI
SAMPLED BY: STEVE NIEHAUS/OMPC

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 4

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u>	<u>Sample</u>
	SAMPLE ID: 9 WALL						
	CHLORIDE EPA 300.0	ND	50	mg/Kg (PPM)	LV	2/11/2020	SOIL

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s.u. = STANDARD pH UNITS REPORTED AT 25 C

COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 5

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLED BY: MI
STEVE NIEHAUS/OMPC

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u>	<u>Sample</u>
SAMPLE ID: 10	WALL						
CHLORIDE EPA 300.0		ND	50	mg/Kg (PPM)	LV	2/11/2020	SOIL

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 6

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLED BY: MI
STEVE NIEHAUS/OMPC

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u>	<u>Sample</u>
SAMPLE ID: 11	WALL						
CHLORIDE EPA 300.0		ND	52	mg/Kg (PPM)	LV	2/11/2020	SOIL

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COMPANY: BREITBURN OPERATING

PROJECT NO: 20-032

LOCATION: ST. KALKASKA 1-27

MI
SAMPLED BY: STEVE NIEHAUS/OMPC

GTA PROJECT NO: 021020-3

GTA SAMPLE NO: 7

DATE SAMPLED: 2/7/2020

TIME SAMPLED:

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u>	<u>Sample</u>
	SAMPLE ID: 12 BOTTOM						
	CHLORIDE EPA 300.0	14,000	510	mg/Kg (PPM)	LV	2/11/2020	SOIL

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NAME:

SAMPLED BY: STEVE NIEHAUS/OMPC

PROJECT NO: 20-032

DATE SAMPLED: 2/6/2020

TIME SAMPLED:

LOCATION: ST. KALKASKA 1-27

SAMPLE MATRIX: SOIL

DATE RECEIVED: 2/10/2020

TIME RECEIVED: 2:20 PM

MI

MOISTURE

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>
	SAMPLE ID: E. BOTTOM @ 18'					
	% MOISTURE EPA 3550C	3.5	0.050	% OF SAMPLE	AS	2/11/2020
	SAMPLE ID: 7 BOTTOM					
	% MOISTURE EPA 3550C	3.4	0.050	% OF SAMPLE	AS	2/11/2020
	SAMPLE ID: 8 WALL					
	% MOISTURE EPA 3550C	3.4	0.050	% OF SAMPLE	AS	2/11/2020
	SAMPLE ID: 9 WALL					
	% MOISTURE EPA 3550C	3.4	0.050	% OF SAMPLE	AS	2/11/2020
	SAMPLE ID: 10 WALL					
	% MOISTURE EPA 3550C	3.4	0.050	% OF SAMPLE	AS	2/11/2020
	SAMPLE ID: 11 WALL					
	% MOISTURE EPA 3550C	5.3	0.050	% OF SAMPLE	AS	2/11/2020
	SAMPLE ID: 12 BOTTOM					
	% MOISTURE EPA 3550C	3.0	0.050	% OF SAMPLE	AS	2/11/2020

