



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: 20-260
GTA ProjNo: 071720-5

Site Addr: ST. GARFIELD C4-9

Sampled By: DANIEL BARTON/OMPC
Date Rec: 7/17/2020
Time Rec: 9:15 AM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	VSR-1	7/16/2020	4:50 PM	SOIL
2	VSR-2	7/16/2020	4:55 PM	SOIL
3	VSR-3	7/16/2020	5:00 PM	SOIL
4	VSR-4	7/16/2020	5:05 PM	SOIL
5	VSR-5	7/16/2020	5:10 PM	SOIL
6	VSR-6	7/16/2020	5:15 PM	SOIL
7	VSR-7	7/16/2020	5:20 PM	SOIL
8	BOTTOM CENTER	7/16/2020	5:50 PM	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
Grand Traverse Analytical
830 Robinwood Court
Traverse City, MI 49686
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COMPANY: BREITBURN OPERATING
PROJECT NO: 20-260
LOCATION: ST. GARFIELD C4-9
MI
SAMPLE MATRIX: SOIL
SAMPLE ID: VSR-1

GTA PROJECT NO: 071720-5
GTA SAMPLE NO: 1
DATE SAMPLED: 7/16/2020
TIME SAMPLED: 4:50 PM
DATE RECEIVED: 7/17/2020
TIME RECEIVED: 9:15 AM

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
ND = NOT DETECTED, RESULT < LOD
LOD = LIMIT OF DETECTION

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 2
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 4:55 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLE MATRIX: SOIL
 SAMPLE ID: VSR-2

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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					

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

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LOD = LIMIT OF DETECTION

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 3
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:00 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLE MATRIX: SOIL
 SAMPLE ID: VSR-3

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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: 20-260
 LOCATION: ST. GARFIELD C4-9
 MI
 SAMPLE MATRIX: SOIL
 SAMPLE ID: VSR-4

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 4
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:05 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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: 20-260
 LOCATION: ST. GARFIELD C4-9
 MI
 SAMPLE MATRIX: SOIL
 SAMPLE ID: VSR-5

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 5
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:10 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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: 20-260

LOCATION: ST. GARFIELD C4-9

MI

SAMPLE MATRIX: SOIL

SAMPLE ID: VSR-6

GTA PROJECT NO: 071720-5

GTA SAMPLE NO: 6

DATE SAMPLED: 7/16/2020

TIME SAMPLED: 5:15 PM

DATE RECEIVED: 7/17/2020

TIME RECEIVED: 9:15 AM

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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					

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

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 7

DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:20 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI

SAMPLE MATRIX: SOIL
 SAMPLE ID: VSR-7

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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					

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

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LOD = LIMIT OF DETECTION



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COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 8

DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:50 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI

SAMPLE MATRIX: SOIL
 SAMPLE ID: BOTTOM CENTER

SAMPLED BY: DANIEL BARTON/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	ND	50	ug/Kg (PPB)	MR	7/16/2020	7/18/2020	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					

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

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LOD = LIMIT OF DETECTION



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COMPANY: BREITBURN OPERATING
PROJECT NO: 20-260
LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
GTA SAMPLE NO: 101

DATE SAMPLED: 7/16/2020
TIME SAMPLED: 4:50 PM
DATE RECEIVED: 7/17/2020
TIME RECEIVED: 9:15 AM

MI
SAMPLED BY: DANIEL BARTON/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: VSR-1							
CHLORIDE EPA 300.0		ND	110	mg/Kg (PPM)	LV	7/17/2020	SOIL

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

COMPANY: BREITBURN OPERATING
PROJECT NO: 20-260
LOCATION: ST. GARFIELD C4-9
MI
SAMPLED BY: DANIEL BARTON/OMPC

GTA PROJECT NO: 071720-5
GTA SAMPLE NO: 102
DATE SAMPLED: 7/16/2020
TIME SAMPLED: 4:55 PM
DATE RECEIVED: 7/17/2020
TIME RECEIVED: 9:15 AM

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: VSR-2	CHLORIDE EPA 300.0	ND	100	mg/Kg (PPM)	LV	7/17/2020	SOIL

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

COMPANY: BREITBURN OPERATING
PROJECT NO: 20-260
LOCATION: ST. GARFIELD C4-9
MI
SAMPLED BY: DANIEL BARTON/OMPC

GTA PROJECT NO: 071720-5
GTA SAMPLE NO: 103
DATE SAMPLED: 7/16/2020
TIME SAMPLED: 5:00 PM
DATE RECEIVED: 7/17/2020
TIME RECEIVED: 9:15 AM

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: VSR-3	CHLORIDE EPA 300.0	ND	110	mg/Kg (PPM)	LV	7/17/2020	SOIL

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

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 104

DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:05 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLED BY: DANIEL BARTON/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: VSR-4	CHLORIDE EPA 300.0	ND	100	mg/Kg (PPM)	LV	7/17/2020	SOIL

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

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 105

DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:10 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLED BY: DANIEL BARTON/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:	VSR-5	ND	110	mg/Kg (PPM)	LV	7/17/2020	SOIL
	CHLORIDE EPA 300.0						

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

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 106
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:15 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLED BY: DANIEL BARTON/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:	VSR-6	ND	110	mg/Kg (PPM)	LV	7/17/2020	SOIL
	CHLORIDE EPA 300.0						

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

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 107
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:20 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLED BY: DANIEL BARTON/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:	VSR-7	ND	110	mg/Kg (PPM)	LV	7/17/2020	SOIL
	CHLORIDE EPA 300.0						

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

COMPANY: BREITBURN OPERATING
 PROJECT NO: 20-260
 LOCATION: ST. GARFIELD C4-9

GTA PROJECT NO: 071720-5
 GTA SAMPLE NO: 108
 DATE SAMPLED: 7/16/2020
 TIME SAMPLED: 5:50 PM
 DATE RECEIVED: 7/17/2020
 TIME RECEIVED: 9:15 AM

MI
 SAMPLED BY: DANIEL BARTON/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: BOTTOM CENTER CHLORIDE EPA 300.0	ND	110	mg/Kg (PPM)	LV	7/17/2020	SOIL

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



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COMPANY: BREITBURN OPERATING

NAME:
PROJECT NO: 20-260

LOCATION: ST. GARFIELD C4-9

MI

GTA PROJECT NO: 071720-5
SAMPLED BY: DANIEL BARTON/OMPC

DATE SAMPLED: 7/16/2020
TIME SAMPLED: 4:50 PM

SAMPLE MATRIX: SOIL

DATE RECEIVED: 7/17/2020
TIME RECEIVED: 9:15 AM

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: VSR-1 % MOISTURE EPA 3550C	8.1	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: VSR-2 % MOISTURE EPA 3550C	3.4	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: VSR-3 % MOISTURE EPA 3550C	6.9	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: VSR-4 % MOISTURE EPA 3550C	4.0	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: VSR-5 % MOISTURE EPA 3550C	7.4	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: VSR-6 % MOISTURE EPA 3550C	9.5	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: VSR-7 % MOISTURE EPA 3550C	6.7	0.050	% OF SAMPLE	AS	7/17/2020
SAMPLE ID: BOTTOM CENTER % MOISTURE EPA 3550C	8.7	0.050	% OF SAMPLE	AS	7/17/2020

