

**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: 228907.160
GTA ProjNo: 102819-13

Site Addr: JOSEPH #1

Sampled By: HOLLIS THOMAS/DARCY
Date Rec: 10/28/2019
Time Rec: 10:15 AM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	MW-1D	10/23/2019	3:25 PM	WATER
2	MW-2	10/23/2019	2:55 PM	WATER
3	MW-3D	10/23/2019	3:00 PM	WATER
4	MW-4	10/23/2019	2:45 PM	WATER
5	MW-8	10/23/2019	1:45 PM	WATER
6	MW-9	10/23/2019	1:15 PM	WATER

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 L Chase

Kirk L. Chase/Chemist
Grand Traverse Analytical
830 Robinwood Court
Traverse City, MI 49686
Ph: 231-929-0905
Fx: 231-929-0894
SP: 231-590-0291
kirk@gtanalytical.com

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

MI

SAMPLE MATRIX: WATER

SAMPLE ID: MW-1D

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 1

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 3:25 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

SAMPLED BY: HOLLIS THOMAS/DARCY

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	1,000	25	ug/L (PPB)	MR		10/29/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	230	25					
Xylene(Total)	320	25					

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

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

MI

SAMPLE MATRIX: WATER

SAMPLE ID: MW-2

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 2

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 2:55 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

SAMPLED BY: HOLLIS THOMAS/DARCY

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		10/29/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					

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

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

MI

SAMPLE MATRIX: WATER

SAMPLE ID: MW-3D

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 3

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 3:00 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

SAMPLED BY: HOLLIS THOMAS/DARCY

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		10/29/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					

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

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

MI

SAMPLE MATRIX: WATER

SAMPLE ID: MW-4

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 4

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 2:45 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

SAMPLED BY: HOLLIS THOMAS/DARCY

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	1.8	1.0	ug/L (PPB)	MR		10/29/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	2.9	1.0					
Xylene(Total)	ND	3.0					

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

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

MI

SAMPLE MATRIX: WATER

SAMPLE ID: MW-8

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 5

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 1:45 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

SAMPLED BY: HOLLIS THOMAS/DARCY

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		10/29/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					

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

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

**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: 102819-13

PROJECT NO: 228907.160

GTA SAMPLE NO: 1

LOCATION: JOSEPH #1

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 3:25 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

MI

SAMPLED BY: HOLLIS THOMAS/DARCY

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: MW-1D						
	CHLORIDE EPA 300.0	ND	10	mg/L (PPM)	LV	11/8/2019	WATER
	CONDUCTIVITY SM2510-B	620	1.0	uS/cm@25C	LV	11/8/2019	WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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

DISS = DISSOLVED

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 2

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 2:55 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

MI

SAMPLED BY: HOLLIS THOMAS/DARCY

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: MW-2						
	CHLORIDE EPA 300.0	ND	10	mg/L (PPM)	LV	11/8/2019	WATER
	CONDUCTIVITY SM2510-B	630	1.0	uS/cm@25C	LV	11/8/2019	WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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

DISS = DISSOLVED

**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: 102819-13

PROJECT NO: 228907.160

GTA SAMPLE NO: 3

LOCATION: JOSEPH #1

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 3:00 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

MI

SAMPLED BY: HOLLIS THOMAS/DARCY

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: MW-3D						
	CHLORIDE EPA 300.0	ND	10	mg/L (PPM)	LV	11/8/2019	WATER
	CONDUCTIVITY SM2510-B	240	1.0	uS/cm@25C	LV	11/8/2019	WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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

DISS = DISSOLVED

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 4

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 2:45 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

MI

SAMPLED BY: HOLLIS THOMAS/DARCY

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: MW-4						
	CHLORIDE EPA 300.0	13	10	mg/L (PPM)	LV	11/8/2019	WATER
	CONDUCTIVITY SM2510-B	880	1.0	uS/cm@25C	LV	11/8/2019	WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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

DISS = DISSOLVED

**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: BREITBURN OPERATING

PROJECT NO: 228907.160

LOCATION: JOSEPH #1

GTA PROJECT NO: 102819-13

GTA SAMPLE NO: 5

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 1:45 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

MI

SAMPLED BY: HOLLIS THOMAS/DARCY

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: MW-8						
	CHLORIDE EPA 300.0	31	10	mg/L (PPM)	LV	11/8/2019	WATER
	CONDUCTIVITY SM2510-B	750	1.0	uS/cm@25C	LV	11/8/2019	WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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

DISS = DISSOLVED

**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: 102819-13

PROJECT NO: 228907.160

GTA SAMPLE NO: 6

LOCATION: JOSEPH #1

DATE SAMPLED: 10/23/2019

TIME SAMPLED: 1:15 PM

DATE RECEIVED: 10/28/2019

TIME RECEIVED: 10:15 AM

MI

SAMPLED BY: HOLLIS THOMAS/DARCY

SAMPLE ANALYSIS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Sample Matrix</u>
	SAMPLE ID: MW-9						
	CHLORIDE EPA 300.0	37	10	mg/L (PPM)	LV	11/8/2019	WATER
	CONDUCTIVITY SM2510-B	820	1.0	uS/cm@25C	LV	11/8/2019	WATER

ND = NOT DETECTED, RESULT < LOD

LOD = LIMIT OF DETECTION

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

DISS = DISSOLVED

CHAIN OF CUSTODY

PROJECT NUMBER 228907.160	SITE NAME/ADDRESS JOSEPH #1	COMPANY/NAME Breithorn Ops LP
SAMPLED BY gallis	COMPANY Darcy	GTA PROJECT # 102819-13

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS
1	MW-1D	10/23/19	3:25pm	GW	CI ⁻ & SC & BTEX
2	MW-2		3:55pm		CI ⁻ & SC & BTEX
3	MW-3D		3:00pm		CI ⁻ & SC & BTEX
4	MW-4		2:45pm		CI ⁻ & SC & BTEX
5	MW-8		1:45pm		CI ⁻ & SC & BTEX
6	MW-9		1:15pm		CI ⁻ & SC

BILL TO:

BB

REPORT TO:

Darcy

RELEASED BY gallis	DATE/TIME 10/28/19 10:15am	RECEIVED BY Lee V...	DATE/TIME 10/20/19 10:15

REQUESTED TAT ☒ STANDARD ☐ 1 BUSINESS DAY ☐ 2 BUSINESS DAYS ☐ 3 BUSINESS DAYS