



**INDEPENDENT TESTING LAB**

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

[www.gtanalytical.com](http://www.gtanalytical.com)

Company: MILLER ENERGY COMPANY II, LLC  
Name:  
ClientProj: ANNUAL INJECTION FLUID ANALYSIS-  
GTA ProjNo: 112222-20

Site Addr: EPA-UIC ANNUAL SAMPLES  
Sampled By: MARTY KIDDER/MECII  
Date Rec: 11/22/2022  
Time Rec: 4:34 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	CURT PFUHL 2	11/17/2022	3:41 PM	WATER
2	GERNAAT 1-24	11/17/2022	1:00 PM	WATER
3	L.H. WALKER 2	11/17/2022	11:00 AM	WATER
4	MARK BOERSMA 1	11/17/2022	12:15 PM	WATER
5	ALF ZIMMERMAN 2	11/17/2022	10:42 AM	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 Chase*

Kirk L. Chase/Chemist  
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COMPANY: MILLER ENERGY COMPANY II, LLC  
PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-  
LOCATION: EPA-UIC ANNUAL SAMPLES  
MI  
SAMPLED BY: MARTY KIDDER/MECII  
SAMPLE ID: CURT PFUHL 2

GTA PROJECT NO: 112222-20  
GTA SAMPLE NO: 1  
DATE SAMPLED: 11/17/2022  
TIME SAMPLED: 3:41 PM  
DATE RECEIVED: 11/22/2022  
TIME RECEIVED: 4:34 PM  
SAMPLE MATRIX: WATER

**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	ND	1.0	mg/L (PPM)	MR	12/7/2022	EPA 3005A
CALCIUM DISS EPA 6020A	34,000	100	mg/L (PPM)	MR	12/7/2022	EPA 3005A
IRON TOTAL EPA 6020A	31	10	mg/L (PPM)	MR	12/7/2022	EPA 3020A
MAGNESIUM DISS EPA 6020A	6,400	100	mg/L (PPM)	MR	12/7/2022	EPA 3020A
SODIUM DISS EPA 6020A	31,000	100	mg/L (PPM)	MR	12/7/2022	EPA 3020A

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	112222-20
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	1
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE RECEIVED:	11/22/2022
		TIME RECEIVED:	4:34 PM
	MI	DATE SAMPLED:	11/17/2022
SAMPLED BY:	MARTY KIDDER/MECII	TIME SAMPLED:	3:41 PM
		SAMPLE MATRIX:	WATER
SAMPLE ID:	CURT PFUHL 2		

**SAMPLE ANALYSIS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	100	10	mg/L (PPM)	TR	12/20/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/20/2022
CHLORIDE EPA 300.0	280,000	2,000	mg/L (PPM)	KC/TR	12/21/2022
pH EPA 150.1 - LAB	5.9	0.10	s.u.	TR	12/20/2022
RESISTIVITY SM 2510A	1.8	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.177	-	-	TR	12/20/2022
SULFATE EPA 300.0	120	50	mg/L (PPM)	KC/TR	12/21/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/25/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	290,000	5.0	mg/L (PPM)	TR	12/16/2022

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COMPANY: MILLER ENERGY COMPANY II, LLC  
 PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-  
 LOCATION: EPA-UIC ANNUAL SAMPLES  
 MI  
 SAMPLED BY: MARTY KIDDER/MECII  
 SAMPLE ID: GERNAAT 1-24

GTA PROJECT NO: 112222-20  
 GTA SAMPLE NO: 2  
 DATE RECEIVED: 11/22/2022  
 TIME RECEIVED: 4:34 PM  
 DATE SAMPLED: 11/17/2022  
 TIME SAMPLED: 1:00 PM  
 SAMPLE MATRIX: WATER

**SAMPLE ANALYSIS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	33	10	mg/L (PPM)	TR	12/20/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/20/2022
CHLORIDE EPA 300.0	270,000	2,000	mg/L (PPM)	KC/TR	12/21/2022
pH EPA 150.1 - LAB	6.1	0.10	s.u.	TR	12/20/2022
RESISTIVITY SM 2510A	8.9	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.194	-	-	TR	12/20/2022
SULFATE EPA 300.0	250	50	mg/L (PPM)	KC/TR	12/21/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/25/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	300,000	5.0	mg/L (PPM)	TR	12/16/2022

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	112222-20
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	3
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE RECEIVED:	11/22/2022
		TIME RECEIVED:	4:34 PM
	MI	DATE SAMPLED:	11/17/2022
SAMPLED BY:	MARTY KIDDER/MECII	TIME SAMPLED:	11:00 AM
SAMPLE ID:	L.H. WALKER 2	SAMPLE MATRIX:	WATER

**SAMPLE ANALYSIS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	44	10	mg/L (PPM)	TR	12/20/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/20/2022
CHLORIDE EPA 300.0	160,000	2,000	mg/L (PPM)	KC/TR	12/21/2022
pH EPA 150.1 - LAB	6.7	0.10	s.u.	TR	12/20/2022
RESISTIVITY SM 2510A	2.6	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.127	-	-	TR	12/20/2022
SULFATE EPA 300.0	370	50	mg/L (PPM)	KC/TR	12/21/2022
SULFIDE SM 4500S D	6.2	1.0	mg/L (PPM)	KC	11/25/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	200,000	5.0	mg/L (PPM)	TR	12/16/2022

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COMPANY: MILLER ENERGY COMPANY II, LLC  
 PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-  
 LOCATION: EPA-UIC ANNUAL SAMPLES  
 MI  
 SAMPLED BY: MARTY KIDDER/MECII  
 SAMPLE ID: MARK BOERSMA 1

GTA PROJECT NO: 112222-20  
 GTA SAMPLE NO: 4  
 DATE RECEIVED: 11/22/2022  
 TIME RECEIVED: 4:34 PM  
 DATE SAMPLED: 11/17/2022  
 TIME SAMPLED: 12:15 PM  
 SAMPLE MATRIX: WATER

**SAMPLE ANALYSIS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	33	10	mg/L (PPM)	TR	12/20/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/20/2022
CHLORIDE EPA 300.0	300,000	2,000	mg/L (PPM)	KC/TR	12/21/2022
pH EPA 150.1 - LAB	6.0	0.10	s.u.	TR	12/20/2022
RESISTIVITY SM 2510A	1.5	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.187	-	-	TR	12/20/2022
SULFATE EPA 300.0	250	50	mg/L (PPM)	KC/TR	12/21/2022
SULFIDE SM 4500S D	10	1.0	mg/L (PPM)	KC	11/25/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	310,000	5.0	mg/L (PPM)	TR	12/16/2022

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	112222-20
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	5
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE RECEIVED:	11/22/2022
		TIME RECEIVED:	4:34 PM
	MI	DATE SAMPLED:	11/17/2022
SAMPLED BY:	MARTY KIDDER/MECII	TIME SAMPLED:	10:42 AM
SAMPLE ID:	ALF ZIMMERMAN 2	SAMPLE MATRIX:	WATER

**SAMPLE ANALYSIS**

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	ND	10	mg/L (PPM)	TR	12/20/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/20/2022
CHLORIDE EPA 300.0	280,000	2,000	mg/L (PPM)	KC/TR	12/21/2022
pH EPA 150.1 - LAB	3.8	0.10	s.u.	TR	12/20/2022
RESISTIVITY SM 2510A	2.3	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.152	-	-	TR	12/20/2022
SULFATE EPA 300.0	100	50	mg/L (PPM)	KC/TR	12/21/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/25/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	320,000	5.0	mg/L (PPM)	TR	12/16/2022

ND = NOT DETECTED, RESULT < LOD  
 LOD = LIMIT OF DETECTION  
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 DISS = DISSOLVED

