



**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: 120523-9

Site Addr: EPA-UIC SAMPLES

Sampled By: MARTY KIDDER/MECH  
Date Rec: 12/5/2023  
Time Rec: 1:54 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	CURT PFUHL 2	11/22/2023	2:09 PM	WATER
2	GERNAAT 1-24	11/22/2023	12:20 PM	WATER
3	L.H. WALKER 2	11/22/2023	8:07 AM	WATER
4	MARK BOERSMA 1	11/21/2023	11:34 AM	WATER
5	ALF ZIMMERMAN 2	11/21/2023	10:20 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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830 Robinwood Court  
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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	120523-9
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	1
LOCATION:	EPA-UIC SAMPLES	DATE RECEIVED:	12/5/2023
		TIME RECEIVED:	1:54 PM
	MI	DATE SAMPLED:	11/22/2023
SAMPLED BY:	MARTY KIDDER/MECII	TIME SAMPLED:	2:09 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)	44	10	mg/L (PPM)	TR	12/18/2023
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/18/2023
CHLORIDE EPA 300.0	230,000	2,000	mg/L (PPM)	KC/TR	12/14/2023
pH EPA 150.1 - LAB	5.4	0.10	s.u.	TR	12/18/2023
RESISTIVITY SM 2510A	2.2	-	ohms x cm	TR	12/10/2023
SPECIFIC GRAVITY SM 2710F	1.155	-	-	TR	12/18/2023
SULFATE EPA 9038	120	40	mg/L (PPM)	KC/TR	1/2/2024
SULFIDE SM 4500S D	3.3	1.0	mg/L (PPM)	KC/TR	12/8/2023
TOTAL DISSOLVED SOLIDS EPA 160.1	330,000	5.0	mg/L (PPM)	TR	12/20/2023

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

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

GTA PROJECT NO: 120523-9  
 GTA SAMPLE NO: 2  
 DATE SAMPLED: 11/22/2023  
 TIME SAMPLED: 12:20 PM  
 DATE RECEIVED: 12/5/2023  
 TIME RECEIVED: 1:54 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	2.0	mg/L (PPM)	MR	12/11/2023	EPA 3005A
CALCIUM DISS EPA 6020A	6,300	20	mg/L (PPM)	MR	12/11/2023	EPA 3005A
IRON TOTAL EPA 6020A	190	20	mg/L (PPM)	MR	12/11/2023	EPA 3020A
MAGNESIUM DISS EPA 6020A	1,100	20	mg/L (PPM)	MR	12/11/2023	EPA 3005A
SODIUM DISS EPA 6020A	42,000	200	mg/L (PPM)	MR	12/11/2023	EPA 3005A

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

GTA PROJECT NO: 120523-9  
 GTA SAMPLE NO: 2  
 DATE RECEIVED: 12/5/2023  
 TIME RECEIVED: 1:54 PM  
 DATE SAMPLED: 11/22/2023  
 TIME SAMPLED: 12:20 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)	ND	10	mg/L (PPM)	TR	12/18/2023
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/18/2023
CHLORIDE EPA 300.0	240,000	2,000	mg/L (PPM)	KC/TR	12/14/2023
pH EPA 150.1 - LAB	3.2	0.10	s.u.	TR	12/18/2023
RESISTIVITY SM 2510A	2.0	-	ohms x cm	TR	12/10/2023
SPECIFIC GRAVITY SM 2710F	1.214	-	-	TR	12/18/2023
SULFATE EPA 9038	280	40	mg/L (PPM)	KC/TR	1/2/2024
SULFIDE SM 4500S D	1.5	1.0	mg/L (PPM)	KC/TR	12/8/2023
TOTAL DISSOLVED SOLIDS EPA 160.1	360,000	5.0	mg/L (PPM)	TR	12/20/2023

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	120523-9
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	3
LOCATION:	EPA-UIC SAMPLES	DATE RECEIVED:	12/5/2023
		TIME RECEIVED:	1:54 PM
	MI	DATE SAMPLED:	11/22/2023
SAMPLED BY:	MARTY KIDDER/MECII	TIME SAMPLED:	8:07 AM
		SAMPLE MATRIX:	WATER
SAMPLE ID:	L.H. WALKER 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)	130	10	mg/L (PPM)	TR	12/18/2023
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/18/2023
CHLORIDE EPA 300.0	130,000	2,000	mg/L (PPM)	KC/TR	12/14/2023
pH EPA 150.1 - LAB	7.0	0.10	s.u.	TR	12/18/2023
RESISTIVITY SM 2510A	3.5	-	ohms x cm	TR	12/10/2023
SPECIFIC GRAVITY SM 2710F	1.108	-	-	TR	12/18/2023
SULFATE EPA 9038	350	200	mg/L (PPM)	KC/TR	1/2/2024
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC/TR	12/8/2023
TOTAL DISSOLVED SOLIDS EPA 160.1	190,000	5.0	mg/L (PPM)	TR	12/20/2023

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

GTA PROJECT NO: 120523-9  
 GTA SAMPLE NO: 4  
 DATE SAMPLED: 11/21/2023  
 TIME SAMPLED: 11:34 AM  
 DATE RECEIVED: 12/5/2023  
 TIME RECEIVED: 1:54 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	2.0	mg/L (PPM)	MR	12/11/2023	EPA 3005A
CALCIUM DISS EPA 6020A	7,700	20	mg/L (PPM)	MR	12/11/2023	EPA 3005A
IRON TOTAL EPA 6020A	230	20	mg/L (PPM)	MR	12/11/2023	EPA 3020A
MAGNESIUM DISS EPA 6020A	1,400	20	mg/L (PPM)	MR	12/11/2023	EPA 3005A
SODIUM DISS EPA 6020A	48,000	200	mg/L (PPM)	MR	12/11/2023	EPA 3005A

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

GTA PROJECT NO: 120523-9  
 GTA SAMPLE NO: 4  
 DATE RECEIVED: 12/5/2023  
 TIME RECEIVED: 1:54 PM  
 DATE SAMPLED: 11/21/2023  
 TIME SAMPLED: 11:34 AM  
 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	12/18/2023
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/18/2023
CHLORIDE EPA 300.0	240,000	2,000	mg/L (PPM)	KC/TR	12/14/2023
pH EPA 150.1 - LAB	4.6	0.10	s.u.	TR	12/18/2023
RESISTIVITY SM 2510A	2.1	-	ohms x cm	TR	12/10/2023
SPECIFIC GRAVITY SM 2710F	1.170	-	-	TR	12/18/2023
SULFATE EPA 9038	280	40	mg/L (PPM)	KC/TR	1/2/2024
SULFIDE SM 4500S D	19	1.0	mg/L (PPM)	KC/TR	12/8/2023
TOTAL DISSOLVED SOLIDS EPA 160.1	340,000	5.0	mg/L (PPM)	TR	12/20/2023

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 PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-  
 LOCATION: EPA-UIC SAMPLES  
 MI  
 SAMPLED BY: MARTY KIDDER/MECII  
 SAMPLE ID: ALF ZIMMERMAN 2

GTA PROJECT NO: 120523-9  
 GTA SAMPLE NO: 5  
 DATE SAMPLED: 11/21/2023  
 TIME SAMPLED: 10:20 AM  
 DATE RECEIVED: 12/5/2023  
 TIME RECEIVED: 1:54 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	2.0	mg/L (PPM)	MR	12/11/2023	EPA 3005A
CALCIUM DISS EPA 6020A	43,000	200	mg/L (PPM)	MR	12/11/2023	EPA 3005A
IRON TOTAL EPA 6020A	ND	20	mg/L (PPM)	MR	12/11/2023	EPA 3020A
MAGNESIUM DISS EPA 6020A	2,400	20	mg/L (PPM)	MR	12/11/2023	EPA 3005A
SODIUM DISS EPA 6020A	27,000	200	mg/L (PPM)	MR	12/11/2023	EPA 3005A

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 LOCATION: EPA-UIC SAMPLES  
 MI  
 SAMPLED BY: MARTY KIDDER/MECII  
 SAMPLE ID: ALF ZIMMERMAN 2

GTA PROJECT NO: 120523-9  
 GTA SAMPLE NO: 5  
 DATE RECEIVED: 12/5/2023  
 TIME RECEIVED: 1:54 PM  
 DATE SAMPLED: 11/21/2023  
 TIME SAMPLED: 10:20 AM  
 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)	190	10	mg/L (PPM)	TR	12/18/2023
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/18/2023
CHLORIDE EPA 300.0	290,000	2,000	mg/L (PPM)	KC/TR	12/14/2023
pH EPA 150.1 - LAB	5.3	0.10	s.u.	TR	12/18/2023
RESISTIVITY SM 2510A	1.9	-	ohms x cm	TR	12/10/2023
SPECIFIC GRAVITY SM 2710F	1.218	-	-	TR	12/18/2023
SULFATE EPA 9038	110	40	mg/L (PPM)	KC/TR	1/2/2024
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC/TR	12/8/2023
TOTAL DISSOLVED SOLIDS EPA 160.1	370,000	5.0	mg/L (PPM)	TR	12/20/2023

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 DISS = DISSOLVED

