



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

Company: LAMBDA ENERGY RESOURCES, LLC

Site Addr: RUDY 1-24

Name:

ClientProj: 201810015.01

Sampled By: JOSHUA GERRIE/GCES

GTA ProjNo: 081319-15

Date Rec: 8/13/2019

Time Rec: 4:16 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	MW-1	8/13/2019	11:09 AM	WATER
2	MW-5	8/13/2019	11:32 AM	WATER
3	MW-5D	8/13/2019	11:58 AM	WATER
4	MW-6	8/13/2019	12:28 PM	WATER
5	MW-12	8/13/2019	1:01 PM	WATER
6	MW-13	8/13/2019	1:26 PM	WATER
7	MW-14	8/13/2019	1:55 PM	WATER
8	MW-16	8/13/2019	2:26 PM	WATER
9	FIELD BLANK	8/13/2019	3:10 PM	WATER
10	MW-8	8/13/2019	2:56 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
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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-1

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 1
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 11:09 AM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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

COMPANY: LAMBDA ENERGY RESOURCES, LLC
PROJECT NO: 2018100115.01
LOCATION: RUDY 1-24
MI
SAMPLE MATRIX: WATER
SAMPLE ID: MW-5

GTA PROJECT NO: 081319-15
GTA SAMPLE NO: 2
DATE SAMPLED: 8/13/2019
TIME SAMPLED: 11:32 AM
DATE RECEIVED: 8/13/2019
TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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	1.0	ug/L (PPB)	MR		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-5D

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 3
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 11:58 AM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-6

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 4
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 12:28 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-12

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 5
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 1:01 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-13

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 6
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 1:26 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-14

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 7
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 1:55 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-16

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 8
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 2:26 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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 LOD = LIMIT OF DETECTION

COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: FIELD BLANK

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 9
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 3:10 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
 ND = NOT DETECTED, RESULT < LOD
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COMPANY: LAMBDA ENERGY RESOURCES, LLC
 PROJECT NO: 2018100115.01
 LOCATION: RUDY 1-24
 MI
 SAMPLE MATRIX: WATER
 SAMPLE ID: MW-8

GTA PROJECT NO: 081319-15
 GTA SAMPLE NO: 10
 DATE SAMPLED: 8/13/2019
 TIME SAMPLED: 2:56 PM
 DATE RECEIVED: 8/13/2019
 TIME RECEIVED: 4:16 PM

SAMPLED BY: JOSHUA GERRIE/GCES

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		8/15/2019	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	9.0	3.0					
1,2,4-Trimethylbenzene	9.6	1.0					
1,3,5-Trimethylbenzene	2.0	1.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					

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 LOD = LIMIT OF DETECTION



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COMPANY: LAMBDA ENERGY RESOURCES, LLC
NAME:
PROJECT NO: 2018100115.01
LOCATION: RUDY 1-24
MI
SAMPLED BY: JOSHUA GERRIE/GCES

GTA PROJECT NO: 081319-15
GTA SAMPLE NO: 10
DATE SAMPLED: 8/13/2019
TIME SAMPLED: 2:56 PM
DATE RECEIVED: 8/13/2019
TIME RECEIVED: 4:16 PM

ORGANICS

<u>No:</u>	<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>
SAMPLE ID:	MW-8							
SAMPLE MATRIX:	WATER							
METHANE RSK-175		390	25	ug/L (PPB)	ALS		8/16/2019	

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COMPANY: LAMBDA ENERGY RESOURCES, LLC GTA PROJECT NO: 081319-15
PROJECT NO: 2018100115.01 GTA SAMPLE NO: 10
LOCATION: RUDY 1-24 DATE RECEIVED: 8/13/2019
MI TIME RECEIVED: 4:16 PM
SAMPLED BY: JOSHUA GERRIE/GCES DATE SAMPLED: 8/13/2019
MI TIME SAMPLED: 2:56 PM
SAMPLE ID: MW-8 SAMPLE MATRIX: WATER

SAMPLE RESULTS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	220	10	mg/L (PPM)	TR	8/18/2019
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	8/18/2019
AMMONIA-N EPA 350.1	0.019	0.015	mg/L (PPM)	KC	8/31/2019
BIOLOGICAL OXYGEN DEMAN EPA 405.1	ND	5.0	mg/L (PPM)	LV	8/18/2019
CHEMICAL OXYGEN DEMAND SM5220D	ND	5.0	mg/L (PPM)	LV	8/23/2019
CHLORIDE EPA 300.0	ND	10	mg/L (PPM)	LV	8/13/2019
NITRATE-N EPA 300.0	ND	0.10	mg/L (PPM)	LV	8/13/2019
SULFATE EPA 300.0	2.3	1.0	mg/L (PPM)	LV	8/13/2019

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 2018100115.01	SITE NAME/ADDRESS Rudy 1-24	COMPANY/NAME Lambda Energy Resources
SAMPLED BY Joshua Genie	COMPANY Gosling Czubak	GTA PROJECT # 081319-15

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS			
1	MW-1	8-13-15	1109	GW	BTEX+4 & Chloride			
2	MW-5	↓	1132	↓	↓			
3	MW-5D		1158					
4	MW-6		1228					
5	MW-12		1301					
6	MW-13		1326					
7	MW-14		1355					
8	MW-16		1426					
9	Field Blank		1510					
10	MW-8		1456			↓	↓	BTEX+4, Chloride, Diss. Iron, Total Iron, Carbonate, Bicarbonate, Nitrate, Ammonia, Methane, Sulfate, BOD, & COD
* Diss. Iron sample was field filtered *								

BILL TO:

Lambda Energy Resources

REPORT TO:

Adam Biteman

RELEASED BY

DATE/TIME

RECEIVED BY

DATE/TIME

[Signature] 8-13-15/1109

[Signature] 8/13/15 1610
see 0.7°

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