

Report to:
Jay Rector



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

IKAV Energy Inc.

Project Name: Bradenhead

Work Order: E410136

Job Number: 20095-0001

Received: 10/14/2024

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
10/23/24

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.



Date Reported: 10/23/24

Jay Rector
1199 Main Ave. Suite 242
Durango, CO 81301

Project Name: Bradenhead
Workorder: E410136
Date Received: 10/14/2024 12:17:00PM

Jay Rector,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 10/14/2024 12:17:00PM, under the Project Name: Bradenhead.

The analytical test results summarized in this report with the Project Name: Bradenhead apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
rainaschwanz@envirotech-inc.com

Field Offices:

Southern New Mexico Area

Lynn Jarboe
Laboratory Technical Representative
Office: 505-421-LABS(5227)
Cell: 505-320-4759
ljjarboe@envirotech-inc.com

Michelle Gonzales
Client Representative
Office: 505-421-LABS(5227)
Cell: 505-947-8222
mgonzales@envirotech-inc.com

Envirotech Web Address: www.envirotech-inc.com

Table of Contents

Title Page	1
Cover Page	2
Table of Contents	3
Sample Summary	4
Sample Data	5
Tapp Com #5	5
QC Summary Data	6
QC - Wet Chem/Gravimetric by SM2540C	6
QC - Wet Chemistry by 9040C/4500H+B	7
QC - Wet Chemistry by SM2320B	8
QC - Wet Chemistry by 9050A/2510B	9
QC - Dissolved Metals by EPA 6010C	10
QC - Anions by EPA 300.0/9056A	11
Definitions and Notes	12
Chain of Custody etc.	13

Sample Summary

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/24 10:05
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Tapp Com #5	E410136-01A	Aqueous	10/14/24	10/14/24	Poly 500mL



Sample Data

IKAV Energy Inc.
1199 Main Ave. Suite 242
Durango CO, 81301

Project Name: Bradenhead
Project Number: 20095-0001
Project Manager: Jay Rector

Reported:
10/23/2024 10:05:07AM

Tapp Com #5

E410136-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Wet Chem/Gravimetric by SM2540C	mg/L	mg/L		Analyst: RAS		Batch: 2442161
Total Dissolved Solids	4460	25.0	1	10/18/24	10/23/24	
Wet Chemistry by 9040C/4500H+B	pH Units	pH Units		Analyst: WF		Batch: 2442157
pH @25°C	9.98		1	10/18/24 10:15	10/18/24 14:49	H5
Wet Chemistry by SM2320B	mg/L	mg/L		Analyst: KH		Batch: 2442030
Total Alkalinity (as CaCO ₃ at pH 4.5)	110	10.0	1	10/14/24	10/15/24	
Wet Chemistry by 9050A/2510B	uS/cm	uS/cm		Analyst: BA		Batch: 2442059
Specific Conductance (@ 25 C)	6310	10.0	1	10/15/24	10/15/24	
Dissolved Metals by EPA 6010C	mg/L	mg/L		Analyst: LS		Batch: 2442110
Calcium	9.87	5.00	5	10/16/24	10/16/24	
Iron	ND	10.0	5	10/16/24	10/16/24	
Magnesium	ND	5.00	5	10/16/24	10/16/24	
Potassium	8.51	5.00	5	10/16/24	10/16/24	
Sodium	1730	50.0	30	10/16/24	10/18/24	
Sodium Absorption Ratio (CALC)	152		1	10/23/24	10/23/24	
Anions by EPA 300.0/9056A	mg/L	mg/L		Analyst: IY		Batch: 2442029
Fluoride	ND	5.00	20	10/14/24	10/14/24	
Chloride	ND	40.0	20	10/14/24	10/14/24	
Nitrite-N	ND	5.00	20	10/14/24 13:03	10/14/24 16:02	
Nitrate-N	ND	5.00	20	10/14/24 13:03	10/14/24 16:02	
o-Phosphate-P	ND	5.00	20	10/14/24 13:03	10/14/24 16:02	
Sulfate	2940	40.0	20	10/14/24	10/14/24	



QC Summary Data

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/2024 10:05:07AM
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Wet Chem/Gravimetric by SM2540C

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/L	mg/L	mg/L	mg/L	%	%	%	%	

Blank (2442161-BLK1)					Prepared: 10/18/24 Analyzed: 10/23/24				
Total Dissolved Solids	ND	10.0							
LCS (2442161-BS1)					Prepared: 10/18/24 Analyzed: 10/23/24				
Total Dissolved Solids	96.0	10.0	100		96.0	55-134			
Duplicate (2442161-DUP1)					Source: E410155-02		Prepared: 10/18/24 Analyzed: 10/23/24		
Total Dissolved Solids	4100	25.0		4060			0.797	5	



QC Summary Data

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/2024 10:05:07AM
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Wet Chemistry by 9040C/4500H+B

Analyst: WF

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	pH Units	pH Units	pH Units	pH Units	%	%	%	%	

LCS (2442157-BS1)					Prepared: 10/18/24 Analyzed: 10/18/24				
pH	8.01		8.00		100	98.75-101.25			
Duplicate (2442157-DUP1)					Source: E410135-01		Prepared: 10/18/24 Analyzed: 10/18/24		
pH	0.407			0.421		3.38	20		



QC Summary Data

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/2024 10:05:07AM
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Wet Chemistry by SM2320B

Analyst: KH

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/L	mg/L	mg/L	mg/L	%	%	%	%	

LCS (2442030-BS1)					Prepared: 10/14/24 Analyzed: 10/15/24				
Total Alkalinity (as CaCO3 at pH 4.5)	252	10.0	250		101	70-130			
Duplicate (2442030-DUP1)					Source: E410134-01		Prepared: 10/14/24 Analyzed: 10/15/24		
Total Alkalinity (as CaCO3 at pH 4.5)	232	10.0		232			0.00	20	



QC Summary Data

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/2024 10:05:07AM
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Wet Chemistry by 9050A/2510B

Analyst: BA

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	uS/cm	uS/cm	uS/cm	uS/cm	%	%	%	%	

Blank (2442059-BLK1)					Prepared: 10/15/24 Analyzed: 10/15/24				
Specific Conductance (@ 25 C)	ND	10.0							
LCS (2442059-BS1)					Prepared: 10/15/24 Analyzed: 10/15/24				
Specific Conductance (@ 25 C)	1420	10.0	1410		101	98-102			
Duplicate (2442059-DUP1)					Source: E410134-01		Prepared: 10/15/24 Analyzed: 10/15/24		
Specific Conductance (@ 25 C)	6850	10.0		6700			2.18	20	



QC Summary Data

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/2024 10:05:07AM
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Dissolved Metals by EPA 6010C

Analyst: LS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/L	mg/L	mg/L	mg/L	%	%	%	%	

Blank (2442110-BLK1)

Prepared: 10/16/24 Analyzed: 10/16/24

Calcium	ND	1.00
Iron	ND	2.00
Magnesium	ND	1.00
Potassium	ND	1.00
Sodium	ND	2.00

LCS (2442110-BS1)

Prepared: 10/16/24 Analyzed: 10/16/24

Calcium	53.8	1.00	50.0	108	80-120
Iron	110	2.00	100	110	80-120
Magnesium	53.8	1.00	50.0	108	80-120
Potassium	5.75	1.00	5.00	115	80-120
Sodium	20.5	2.00	20.0	102	80-120

Matrix Spike (2442110-MS1)

Source: E410155-01

Prepared: 10/16/24 Analyzed: 10/16/24

Calcium	114	5.00	50.0	48.6	131	75-125	M2
Iron	122	10.0	100	ND	122	75-125	
Magnesium	56.6	5.00	50.0	ND	113	75-125	
Potassium	16.5	5.00	5.00	6.55	198	75-125	M2
Sodium	1530	50.0	20.0	1450	416	75-125	M4

Matrix Spike Dup (2442110-MSD1)

Source: E410155-01

Prepared: 10/16/24 Analyzed: 10/16/24

Calcium	110	5.00	50.0	48.6	122	75-125	3.93	20	
Iron	119	10.0	100	ND	119	75-125	3.07	20	
Magnesium	55.1	5.00	50.0	ND	110	75-125	2.60	20	
Potassium	16.7	5.00	5.00	6.55	202	75-125	1.24	20	M2
Sodium	1510	50.0	20.0	1450	320	75-125	1.27	20	M4



QC Summary Data

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/2024 10:05:07AM
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/L	mg/L	mg/L	mg/L	%	%	%	%	

Blank (2442029-BLK1) Prepared: 10/14/24 Analyzed: 10/14/24

Fluoride	ND	0.250
Chloride	ND	2.00
Nitrite-N	ND	0.250
Nitrate-N	ND	0.250
o-Phosphate-P	ND	0.250
Sulfate	ND	2.00

LCS (2442029-BS1) Prepared: 10/14/24 Analyzed: 10/14/24

Fluoride	2.64	0.250	2.50	106	90-110
Chloride	25.2	2.00	25.0	101	90-110
Nitrite-N	2.58	0.250	2.50	103	90-110
Nitrate-N	2.58	0.250	2.50	103	90-110
o-Phosphate-P	13.0	0.250	12.5	104	90-110
Sulfate	24.4	2.00	25.0	97.6	90-110

LCS Dup (2442029-BSD1) Prepared: 10/14/24 Analyzed: 10/14/24

Fluoride	2.62	0.250	2.50	105	90-110	0.981	20
Chloride	24.9	2.00	25.0	99.6	90-110	1.01	20
Nitrite-N	2.52	0.250	2.50	101	90-110	2.09	20
Nitrate-N	2.55	0.250	2.50	102	90-110	1.08	20
o-Phosphate-P	12.9	0.250	12.5	103	90-110	0.652	20
Sulfate	24.2	2.00	25.0	96.7	90-110	0.921	20

QC Summary Report Comment:
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures.
Therefore, hand calculated values may differ slightly.



Definitions and Notes

IKAV Energy Inc. 1199 Main Ave. Suite 242 Durango CO, 81301	Project Name:	Bradenhead	Reported: 10/23/24 10:05
	Project Number:	20095-0001	
	Project Manager:	Jay Rector	

- H5 pH is specified to be performed in the field within 15 minutes of sampling. The sample analysis was performed as quickly as possible.
- M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.
- M4 Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite
- DNR Did not react with the addition of acid or base.

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.





Envirotech Analytical Laboratory

Printed: 10/14/2024 12:42:05PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	IKAV Energy Inc.	Date Received:	10/14/24 12:17	Work Order ID:	E410136
Phone:	505-793-2834	Date Logged In:	10/14/24 12:34	Logged In By:	Caitlin Mars
Email:	jeremiah.rector@ikavenergy.com	Due Date:	10/21/24 17:00 (5 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

Carrier: Heather AlexanderComments/ResolutionSample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

7. Was a sample cooler received? No
8. If yes, was cooler received in good condition? NA
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C No

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 17.1°C

Sample Container

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

20. Were field sample labels filled out with the minimum information:
Sample ID? Yes
Date/Time Collected? Yes
Collectors name? Yes

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? Yes

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 412160

CONDITIONS

Operator: SIMCOE LLC 1199 Main Ave., Suite 101 Durango, CO 81301	OGRID: 329736
	Action Number: 412160
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	TDS 4460 - produced water on bradenhead	12/16/2024
mkuehling	for record only	12/16/2024