



Donny Juarez  
Energy Laboratories  
2393 Salt Creek Hwy  
Casper, WY 82601  
USA

**WS-312**  **Final Report**

**WatR™ Supply Proficiency Testing**

**WatR™ Supply Study**

**Open Date: 07/11/2022**

**Close Date: 08/25/2022**

**Report Issued Date: 08/29/2022**



A Waters Company

August 29, 2022

Donny Juarez  
Energy Laboratories  
2393 Salt Creek Hwy  
Casper, WY 82601

Enclosed is your final report for ERA's WS-312 WatR™ Supply Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's WS-312 WatR™ Supply Proficiency Testing (PT) study have been evaluated using the following tiered approach. If the analyte is listed in the most current TNI Fields of Proficiency Testing (FoPT) table the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the table and the evaluation criteria contained in the 2016 TNI Standard, Volume 3. If the analyte is not included in the TNI FoPT table, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™ Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

Thank you for your participation in ERA's WS-312 WatR™ Supply Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Huff", with a horizontal line drawn through it.

Craig Huff  
Senior Technical Manager

attachments





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<b>Report Recipient</b>	<b>Contact/Phone Number</b>	<b>Reporting Type</b>
Alabama	Benny Laughlin / 334-271-7775	All Analytes
ANAB	Zaneta Popovska / 414-501-5341	All Analytes
California ELAP	Christine Sotelo / 916-341-5175	All Analytes
Colorado	Thomas Lill / 303-692-3045	All Analytes
EPA Region 8	Marcie Tidd / (303) 462-9476	All Analytes
Florida	Vanessa Soto / 904-791-1599	All Analytes
Idaho	Ernie Bader / 208-334-2235 x 290	All Analytes
Louisiana (WS)	Grant Aucoin / 225-219-5235	All Analytes
Montana	Russell Leu / 406-444-5259	All Analytes
Nebraska	Tara Wulfekoetter / 402-471-8439	All Analytes
Nevada	Paige Menicucci / 775-687-9311	All Analytes
Oregon	Travis Bartholomew / 503-693-4122	All Analytes
South Dakota	Rea Riggle / 605-773-3368	All Analytes
Texas	Frank Jamison / (512) 239-3754	All Analytes
Washington	Rebecca Wood / 360-871-8811	All Analytes



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# WS-312 Definitions & Study Discussion

Study Dates: 07/11/2022 - 08/25/2022

Report Issued: 08/29/2022

## WS Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the most current TNI Fields of Proficiency Testing (FoPT) table. A parameter not added to the standard is given an Assigned Value of "< PTRL" per the guidelines contained in the 2016 TNI Standard. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current TNI FoPT table or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

- Acceptable = Reported Value falls within the Acceptance Limits.
- Not Acceptable = Reported Value falls outside the Acceptance Limits.
- No Evaluation = Reported Value cannot be evaluated.
- Not Reported = No Value reported.

The Method Description is the method the laboratory reported to ERA.

## WS Study Discussion

ERA's WS-312 WatR™ Supply Proficiency Testing study has been reviewed by ERA senior management and certified compliant with the requirements of the 2016 TNI Standard and the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) table.

ERA's WS-312 WatR™ Supply study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2016 TNI Standard and the criteria contained in the most current TNI FoPT table.

All activities associated with this proficiency testing study were performed by Waters/ERA with the exception of those noted below. The following physical samples/products were manufactured for Waters/ERA by a subcontractor:

Microbiology products with the following catalog numbers:  
880, 935, 079, 077, 080, 595, 595A, 576, 576A

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's WS-312 WatR™ Supply study reports shall not be reproduced except in their entirety and not without the permission of the participating laboratories. The report must not be used by the participating laboratories to claim product endorsement by any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's WatR™ Supply Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





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# WS-312 Laboratory Exception Report

Donny Juarez  
Quality Assurance Manager  
Energy Laboratories  
2393 Salt Creek Hwy  
Casper, WY 82601  
307-235-0515 x3244

EPA ID: WY00002  
ERA Customer Number: E772828  
Report Issued: 08/29/2022  
Study Dates: 07/11/2022 - 08/25/2022

## Not Acceptable Evaluations

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
<b>WS Metals (cat# 590, lot# S312-697)</b>							
1020	Beryllium	µg/L	< 13	4.29	3.65 - 4.93	Not Acceptable	EPA 200.7 4.4 1994
<b>WS Inorganic Disinfection #2 (cat# 5260, lot# S312-5262)</b>							
1540	Bromide	µg/L	176	237	201 - 273	Not Acceptable	EPA 300.0 2.1 1993
<b>WS Carbamate/Carbamoxylxime Pesticides (cat# 846, lot# S312-707)</b>							
7805	Methomyl	µg/L	24.5	20.1	16.1 - 24.1	Not Acceptable	EPA 531.1 3.1 1995
<b>WS Regulated Semivolatiles #2 Herbicides (cat# 849, lot# S312-691)</b>							
9390	Diquat	µg/L	10.2	24.3	12.2 - 36.4	Not Acceptable	EPA 549.2 1 1997
9411	Glyphosate	µg/L	572	459	367 - 551	Not Acceptable	EPA 547 1990



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





# Final Report Results For Laboratory Energy Laboratories



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

16341 Table Mountain Pkwy • Golden, CO 80403 • 800.372.0122 • 303.431.8454 • fax 303.421.0159 • [www.eraqc.com](http://www.eraqc.com)

Study # : WS-312





# Final Evaluation Report

## Study: **WS-312**

ERA Customer Number: **E772828**

Laboratory Name: **Energy Laboratories**

## Inorganic Results



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : WS-312





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# WS-312 Final Evaluation Report

**Donny Juarez**  
**Quality Assurance Manager**  
**Energy Laboratories**  
**2393 Salt Creek Hwy**  
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**WY00002**  
**E772828**  
**08/29/2022**  
**07/11/2022 - 08/25/2022**

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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**WS Hardness (cat# 555, lot# S312-693)**

1035	Calcium	mg/L	48.3	46.9	39.9 - 53.9	Acceptable	EPA 200.7 4.4 1994	8/9/2022	1.13	45.7	2.30	jcg
1085	Magnesium	mg/L	4.84	4.59	3.90 - 5.28	Acceptable	EPA 200.7 4.4 1994	8/9/2022	1.16	4.54	0.256	jcg
1155	Sodium	mg/L	43.4	41.5	35.3 - 47.7	Acceptable	EPA 200.7 4.4 1994	8/9/2022	1.02	41.2	2.17	jcg
1550	Calcium Hardness as CaCO3	mg/L	121	117	99.4 - 135	Acceptable	SM2340B 22nd ED 2011	8/17/2022	1.45	114	4.73	tlf
1755	Total Hardness as CaCO3	mg/L	140	136	116 - 156	Acceptable	SM2340B 22nd ED 2011	8/17/2022	1.47	133	4.75	tlf

**WS Inorganics (cat# 591, lot# S312-698)**

1505	Alkalinity as CaCO3	mg/L	80.7	77.2	69.5 - 84.9	Acceptable	SM2320B 22nd ED 2011	7/22/2022	1.15	77.6	2.65	dmb
1575	Chloride	mg/L	68.8	66.4	56.4 - 76.4	Acceptable	EPA 300.0 2.1 1993	7/30/2022	0.733	67.3	2.05	dmb
1610	Conductivity at 25°C	µmhos/cm	500	503	453 - 553	Acceptable	SM2510B 22nd ED 2011	7/27/2022	0.121	499	12.3	mnm
1730	Fluoride	mg/L	3.6	3.65	3.28 - 4.02	Acceptable	EPA 300.0 2.1 1993	7/30/2022	-0.511	3.68	0.166	dmb
1820	Nitrate + Nitrite as N	mg/L	5.1	5.36	4.56 - 6.16	Acceptable	EPA 353.2 2 1993	8/1/2022	-1.06	5.37	0.251	erc
1810	Nitrate as N	mg/L	5.48	5.36	4.82 - 5.90	Acceptable	EPA 300.0 2.1 1993	7/30/2022	0.504	5.36	0.243	dmb
1125	Potassium	mg/L	24.3	22.5	19.1 - 25.9	Acceptable	EPA 200.7 4.4 1994	8/9/2022	1.58	22.8	0.969	jcg
2000	Sulfate	mg/L	28.1	28.9	24.6 - 33.2	Acceptable	EPA 300.0 2.1 1993	7/30/2022	-0.653	29.0	1.39	dmb
1955	Total Dissolved Solids at 180°C	mg/L	376	374	299 - 449	Acceptable	SM2540C 23rd ED 2015	7/28/2022	0.738	362	18.6	mnm

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01







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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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**WS Inorganics (cat# 591, lot# S312-698)**

1505	Alkalinity as CaCO3	mg/L		77.2	69.5 - 84.9	Not Reported				77.6	2.65	
1575	Chloride	mg/L		66.4	56.4 - 76.4	Not Reported				67.3	2.05	
1610	Conductivity at 25°C	µmhos/cm		503	453 - 553	Not Reported				499	12.3	
1730	Fluoride	mg/L	3.72	3.65	3.28 - 4.02	Acceptable	SM4500F- C 22nd ED 2011	7/28/2022	0.213	3.68	0.166	slf
1820	Nitrate + Nitrite as N	mg/L		5.36	4.56 - 6.16	Not Reported				5.37	0.251	
1810	Nitrate as N	mg/L	5.1	5.36	4.82 - 5.90	Acceptable	EPA 353.2 (calc)	8/3/2022	-1.06	5.36	0.243	tlf
1125	Potassium	mg/L		22.5	19.1 - 25.9	Not Reported				22.8	0.969	
2000	Sulfate	mg/L		28.9	24.6 - 33.2	Not Reported				29.0	1.39	
1955	Total Dissolved Solids at 180°C	mg/L		374	299 - 449	Not Reported				362	18.6	

**WS pH (cat# 552, lot# S312-779)**

1900	pH	S.U.	6.12	6.07	5.87 - 6.27	Acceptable	SM4500H+ B 22nd ED 2011	7/27/2022	1.17	6.08	0.0350	mnm
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**WS Metals (cat# 590, lot# S312-697)**

1000	Aluminum	µg/L	787	806	685 - 927	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-0.563	812	43.7	jcg
1005	Antimony	µg/L		31.9	22.3 - 41.5	Not Reported				32.0	1.45	
1010	Arsenic	µg/L		13.1	9.17 - 17.0	Not Reported				13.7	1.18	
1015	Barium	µg/L	1707	1560	1330 - 1790	Acceptable	EPA 200.7 4.4 1994	8/9/2022	2.41	1550	65.0	jcg
1020	Beryllium	µg/L	< 13	4.29	3.65 - 4.93	Not Acceptable	EPA 200.7 4.4 1994	8/11/2022		4.22	0.243	jcg
1025	Boron	µg/L	1242	1100	935 - 1260	Acceptable	EPA 200.7 4.4 1994	8/11/2022	2.30	1100	63.9	jcg
1030	Cadmium	µg/L	26.6	29.1	23.3 - 34.9	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-1.48	28.5	1.25	jcg
1040	Chromium	µg/L	29	28.6	24.3 - 32.9	Acceptable	EPA 200.7 4.4 1994	8/11/2022	0.547	28.4	1.12	jcg
1055	Copper	µg/L	426	407	366 - 448	Acceptable	EPA 200.7 4.4 1994	8/11/2022	1.10	406	18.1	jcg
1070	Iron	µg/L	386	398	338 - 458	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-0.429	396	23.0	jcg
1075	Lead	µg/L		44.7	31.3 - 58.1	Not Reported				44.7	2.44	
1090	Manganese	µg/L	189	168	143 - 193	Acceptable	EPA 200.7 4.4 1994	8/9/2022	2.20	171	8.20	jcg
1100	Molybdenum	µg/L		94.8	80.6 - 109	Not Reported				93.2	4.14	
1105	Nickel	µg/L	280	298	253 - 343	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-1.24	296	12.9	jcg
1140	Selenium	µg/L		87.4	69.9 - 105	Not Reported				87.9	5.54	
1150	Silver	µg/L	137	167	117 - 217	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-3.61	168	8.48	jcg
1165	Thallium	µg/L		3.50	2.45 - 4.55	Not Reported				3.43	0.219	
1185	Vanadium	µg/L	644	664	564 - 764	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-0.490	659	30.3	jcg
1190	Zinc	µg/L	1331	1420	1210 - 1630	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-1.47	1420	59.3	jcg



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**WS Metals (cat# 590, lot# S312-697)**

1000	Aluminum	µg/L	785	806	685 - 927	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-0.609	812	43.7	jcg
1005	Antimony	µg/L	31.1	31.9	22.3 - 41.5	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-0.641	32.0	1.45	jcg
1010	Arsenic	µg/L	14.1	13.1	9.17 - 17.0	Acceptable	EPA 200.8 5.4 1994	8/5/2022	0.350	13.7	1.18	jcg
1015	Barium	µg/L	1600	1560	1330 - 1790	Acceptable	EPA 200.8 5.4 1994	8/5/2022	0.766	1550	65.0	jcg
1020	Beryllium	µg/L	4.12	4.29	3.65 - 4.93	Acceptable	EPA 200.8 5.4 1994	8/9/2022	-0.398	4.22	0.243	jcg
1025	Boron	µg/L		1100	935 - 1260	Not Reported				1100	63.9	
1030	Cadmium	µg/L	26.9	29.1	23.3 - 34.9	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-1.24	28.5	1.25	jcg
1040	Chromium	µg/L	28.8	28.6	24.3 - 32.9	Acceptable	EPA 200.8 5.4 1994	8/5/2022	0.369	28.4	1.12	jcg
1055	Copper	µg/L	417	407	366 - 448	Acceptable	EPA 200.8 5.4 1994	8/5/2022	0.602	406	18.1	jcg
1070	Iron	µg/L		398	338 - 458	Not Reported				396	23.0	
1075	Lead	µg/L	43.4	44.7	31.3 - 58.1	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-0.518	44.7	2.44	jcg
1090	Manganese	µg/L	175	168	143 - 193	Acceptable	EPA 200.8 5.4 1994	8/5/2022	0.490	171	8.20	jcg
1100	Molybdenum	µg/L	87.6	94.8	80.6 - 109	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-1.34	93.2	4.14	jcg
1105	Nickel	µg/L	291	298	253 - 343	Acceptable	EPA 200.8 5.4 1994	8/9/2022	-0.393	296	12.9	jcg
1140	Selenium	µg/L	80	87.4	69.9 - 105	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-1.42	87.9	5.54	jcg
1150	Silver	µg/L	166	167	117 - 217	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-0.189	168	8.48	jcg
1165	Thallium	µg/L	3.22	3.50	2.45 - 4.55	Acceptable	EPA 200.8 5.4 1994	8/9/2022	-0.957	3.43	0.219	jcg
1185	Vanadium	µg/L	609	664	564 - 764	Acceptable	EPA 200.8 5.4 1994	8/5/2022	-1.64	659	30.3	jcg
1190	Zinc	µg/L	1479	1420	1210 - 1630	Acceptable	EPA 200.8 5.4 1994	8/22/2022	1.02	1420	59.3	jcg

**WS Uranium (cat# 858, lot# S312-930)**

1184	Uranium (mass)	µg/L	8.05	9.11	6.87 - 10.8	Acceptable	EPA 200.8 5.4 1994	8/9/2022	-1.28	8.80	0.591	jcg
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All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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**WS Inorganic Disinfection #2 (cat# 5260, lot# S312-5262)**

1535	Bromate	µg/L		29.7	20.8 - 38.6	Not Reported				28.8	2.39	
1540	Bromide	µg/L	176	237	201 - 273	Not Acceptable	EPA 300.0 2.1 1993	7/29/2022	-3.23	234	18.0	slf

**WS Nitrite (cat# 594, lot# S312-695)**

1840	Nitrite as N	mg/L	1.14	1.29	1.10 - 1.48	Acceptable	SM4500NO2- B 22nd ED 2011	7/28/2022	-2.02	1.28	0.0695	nts
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**WS o-Phosphate Nutrients (cat# 558, lot# S312-667)**

1870	ortho-Phosphate as P	mg/L	4.4	4.50	3.82 - 5.18	Acceptable	EPA 365.1 2 1993	8/3/2022	-0.312	4.48	0.271	nts
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**WS Organic Carbon (cat# 557, lot# S312-669)**

1710	Dissolved Organic Carbon (DOC)	mg/L		12.0	10.7 - 13.2	Not Reported				12.0	0.684	
2040	Total Organic Carbon (TOC)	mg/L	12.5	12.0	9.60 - 14.4	Acceptable	EPA 9060A 2004	8/11/2022	0.734	12.1	0.538	mm

**WS Organic Carbon (cat# 557, lot# S312-669)**

1710	Dissolved Organic Carbon (DOC)	mg/L	12.7	12.0	10.7 - 13.2	Acceptable	SM 5310 C-2014 2014	8/6/2022	0.959	12.0	0.684	nts
2040	Total Organic Carbon (TOC)	mg/L	12.6	12.0	9.60 - 14.4	Acceptable	SM 5310 C-2014 2014	8/6/2022	0.919	12.1	0.538	nts

**WS Silica (cat# 902, lot# S312-785)**

1990	Silica as SiO2	mg/L	45.4	45.5	38.7 - 52.3	Acceptable	EPA 200.7 4.4 1994	8/11/2022	-0.135	45.8	3.15	jcg
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**WS Corrosivity (cat# 900, lot# S312-980)**

1620	Corrosivity	S.I. @ 20°C	1.76	1.58	1.18 - 1.98	Acceptable	SM2330B 21st ED 2000	8/24/2022	1.14	1.54	0.193	jlw
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**WS Turbidity (cat# 592, lot# S312-699)**

2055	Turbidity	NTU	1.56	1.48	1.20 - 1.80	Acceptable	SM2130B 22nd ED 2011	8/11/2022	-0.308	1.60	0.134	nts
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All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





# Final Evaluation Report

## Study: **WS-312**

ERA Customer Number: **E772828**

Laboratory Name: **Energy Laboratories**

## Microbiology Results



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : WS-312





A Waters Company

# WS-312 Final Evaluation Report

**Donny Juarez**  
**Quality Assurance Manager**  
**Energy Laboratories**  
**2393 Salt Creek Hwy**  
**Casper, WY 82601**  
**307-235-0515 x3244**

**EPA ID:**  
**ERA Customer Number:**  
**Report Issued:**  
**Study Dates:**

**WY00002**  
**E772828**  
**08/29/2022**  
**07/11/2022 - 08/25/2022**

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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**WS MicrobE™ (Coliforms) (cat# 080A, lot# S312-085A)**

2500	Total Coliforms - Sample 1	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 2	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 3	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 4	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 5	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 6	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 7	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 8	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 9	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				
2500	Total Coliforms - Sample 10	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd Ed	7/25/2022				

**Total Coliforms Evaluation : Acceptable**  
**Fecal Coliforms Evaluation : Not Reported**  
**E.coli Evaluation : Acceptable**

Fecal Coliform Organism - Escherichia coli (ATCC 35421), Samples 3, 4 and 8  
 Total Coliform Organism - Enterobacter cloacae (NCTC 10005), Samples 1, 6 and 9  
 Negative (1) Coliform Organism - Proteus mirabilis ( NCIMB 13283), Sample 10  
 Negative (2) Coliform Organism - Pseudomonas aeruginosa ( NCIMB 12469), Sample 7  
 Blank - Blank Pellet (Qualitative), Samples 2 and 5

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





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**WS MicroB™ (Coliforms) (cat# 080A, lot# S312-085A) (Continued)**

2530	Fecal Coliforms - Sample 1	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 2	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 3	CFU/100mL		Presence	Presence	Not Reported						
2530	Fecal Coliforms - Sample 4	CFU/100mL		Presence	Presence	Not Reported						
2530	Fecal Coliforms - Sample 5	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 6	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 7	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 8	CFU/100mL		Presence	Presence	Not Reported						
2530	Fecal Coliforms - Sample 9	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 10	CFU/100mL		Absence	Absence	Not Reported						

**Total Coliforms Evaluation : Acceptable**  
**Fecal Coliforms Evaluation : Not Reported**  
**E.coli Evaluation : Acceptable**

Fecal Coliform Organism - Escherichia coli (ATCC 35421), Samples 3, 4 and 8  
 Total Coliform Organism - Enterobacter cloacae (NCTC 10005), Samples 1, 6 and 9  
 Negative (1) Coliform Organism - Proteus mirabilis ( NCIMB 13283), Sample 10  
 Negative (2) Coliform Organism - Pseudomonas aeruginosa ( NCIMB 12469), Sample 7  
 Blank - Blank Pellet (Qualitative), Samples 2 and 5



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**WS MicrobE™ (Coliforms) (cat# 080A, lot# S312-085A) (Continued)**

2525	E.coli - Sample 1	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 2	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 3	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 4	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 5	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 6	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 7	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 8	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 9	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				
2525	E.coli - Sample 10	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 2016	7/25/2022				

**Total Coliforms Evaluation : Acceptable**  
**Fecal Coliforms Evaluation : Not Reported**  
**E.coli Evaluation : Acceptable**

Fecal Coliform Organism - Escherichia coli (ATCC 35421), Samples 3, 4 and 8  
 Total Coliform Organism - Enterobacter cloacae (NCTC 10005), Samples 1, 6 and 9  
 Negative (1) Coliform Organism - Proteus mirabilis ( NCIMB 13283), Sample 10  
 Negative (2) Coliform Organism - Pseudomonas aeruginosa ( NCIMB 12469), Sample 7  
 Blank - Blank Pellet (Qualitative), Samples 2 and 5

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**08/29/2022**  
**07/11/2022 - 08/25/2022**

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**WS MicrobE™ (Coliforms) (cat# 080B, lot# S312-085B)**

2500	Total Coliforms - Sample 1	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 2	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 3	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 4	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 5	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 6	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 7	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 8	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 9	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2500	Total Coliforms - Sample 10	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				

**Total Coliforms Evaluation : Acceptable**  
**Fecal Coliforms Evaluation : Not Reported**  
**E.coli Evaluation : Acceptable**

Fecal Coliform Organism - Escherichia coli (ATCC 35421), Samples 1, 4 and 7  
 Total Coliform Organism - Enterobacter cloacae (NCTC 10005), Samples 2, 8 and 10  
 Negative (1) Coliform Organism - Proteus mirabilis ( NCIMB 13283), Sample 5  
 Negative (2) Coliform Organism - Pseudomonas aeruginosa ( NCIMB 12469), Sample 3  
 Blank - Blank Pellet (Qualitative), Samples 6 and 9

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**WS MicrobE™ (Coliforms) (cat# 080B, lot# S312-085B) (Continued)**

2530	Fecal Coliforms - Sample 1	CFU/100mL		Presence	Presence	Not Reported						
2530	Fecal Coliforms - Sample 2	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 3	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 4	CFU/100mL		Presence	Presence	Not Reported						
2530	Fecal Coliforms - Sample 5	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 6	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 7	CFU/100mL		Presence	Presence	Not Reported						
2530	Fecal Coliforms - Sample 8	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 9	CFU/100mL		Absence	Absence	Not Reported						
2530	Fecal Coliforms - Sample 10	CFU/100mL		Absence	Absence	Not Reported						

**Total Coliforms Evaluation : Acceptable**  
**Fecal Coliforms Evaluation : Not Reported**  
**E.coli Evaluation : Acceptable**

Fecal Coliform Organism - Escherichia coli (ATCC 35421), Samples 1, 4 and 7  
 Total Coliform Organism - Enterobacter cloacae (NCTC 10005), Samples 2, 8 and 10  
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**WS MicrobE™ (Coliforms) (cat# 080B, lot# S312-085B) (Continued)**

2525	E.coli - Sample 1	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 2	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 3	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 4	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 5	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 6	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 7	CFU/100mL	Presence	Presence	Presence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 8	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 9	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				
2525	E.coli - Sample 10	CFU/100mL	Absence	Absence	Absence	Acceptable	SM 9223 B-2016 23rd ED	7/25/2022				

**Total Coliforms Evaluation : Acceptable**  
**Fecal Coliforms Evaluation : Not Reported**  
**E.coli Evaluation : Acceptable**

Fecal Coliform Organism - Escherichia coli (ATCC 35421), Samples 1, 4 and 7  
 Total Coliform Organism - Enterobacter cloacae (NCTC 10005), Samples 2, 8 and 10  
 Negative (1) Coliform Organism - Proteus mirabilis ( NCIMB 13283), Sample 5  
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 Blank - Blank Pellet (Qualitative), Samples 6 and 9

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**WS WS SourceWatR™ MicrobE™ (cat# 595, lot# S312-078)**

2500	Total Coliforms (MF)	CFU/100mL		107	66.0 - 172	Not Reported				107	26.5	
2530	Fecal Coliforms (MF)	CFU/100mL		70.0	21.0 - 231	Not Reported				70.4	52.5	
2525	E.coli (MF)	CFU/100mL		90.0	57.0 - 143	Not Reported				90.1	21.6	
2500	Total Coliform (MPN-Multiple Well)	MPN/100mL	102	120	75.2 - 191	Acceptable	SM9223 COLertQT 23rd ED 2016	7/25/2022	-0.0477	120	28.9	
2530	Fecal Coliform (MPN-Multiple Well)	MPN/100mL		99.9	56.3 - 177	Not Reported				99.9	30.2	
2525	E.coli (MPN-Multiple Well)	MPN/100mL	102	120	77.0 - 187	Acceptable	SM9223 COLertQT 23rd ED 2016	7/25/2022	-0.0493	120	27.6	

**WS WS SourceWatR™ MicrobE™ (cat# 595, lot# S312-078)**

2500	Total Coliforms (MF)	CFU/100mL		107	66.0 - 172	Not Reported				107	26.5	
2530	Fecal Coliforms (MF)	CFU/100mL		70.0	21.0 - 231	Not Reported				70.4	52.5	
2525	E.coli (MF)	CFU/100mL		90.0	57.0 - 143	Not Reported				90.1	21.6	
2500	Total Coliform (MPN-Multiple Well)	MPN/100mL	120	120	75.2 - 191	Acceptable	SM9223 COLert18 23rd ED 2016	7/25/2022	0.000584	120	28.9	
2530	Fecal Coliform (MPN-Multiple Well)	MPN/100mL		99.9	56.3 - 177	Not Reported				99.9	30.2	
2525	E.coli (MPN-Multiple Well)	MPN/100mL	120	120	77.0 - 187	Acceptable	SM9223 COLert18 23rd ED 2016	7/25/2022	-0.000311	120	27.6	

**WS Heterotrophic Plate Count (cat# 079, lot# S312-084)**

2555	Heterotrophic Plate Count (MF, PP)	CFU/mL		61.0	47.0 - 80.0	Not Reported				61.1	8.19	
2555	Heterotrophic Plate Count (MPN)	MPN/mL	66	64.5	41.4 - 101	Acceptable	Simplate 2000	7/25/2022	0.00854	64.5	14.8	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





# Final Evaluation Report

Study: **WS-312**

ERA Customer Number: **E772828**

Laboratory Name: **Energy Laboratories**

## Organic Results



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : WS-312





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# WS-312 Final Evaluation Report

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**Energy Laboratories**  
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**WS Carbamate/Carbamoyloxime Pesticides (cat# 846, lot# S312-707)**

7010	Aldicarb	µg/L	64.9	59.3	44.5 - 74.1	Acceptable	EPA 531.1 3.1 1995	8/1/2022	1.00	57.7	7.16	ljl
7015	Aldicarb sulfone	µg/L	99.3	91.0	68.2 - 114	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.703	92.2	10.1	ljl
7020	Aldicarb sulfoxide	µg/L	76.2	70.4	52.8 - 88.0	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.922	68.4	8.42	ljl
8080	Baygon	µg/L	136	119	97.6 - 140	Acceptable	EPA 531.1 3.1 1995	8/1/2022	1.30	122	10.5	ljl
7195	Carbaryl	µg/L	83	79.8	59.8 - 99.8	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.718	76.8	8.69	ljl
7205	Carbofuran	µg/L	36.7	33.2	18.3 - 48.1	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.741	33.8	3.93	ljl
7710	3-Hydroxycarbofuran	µg/L	70.9	69.1	55.3 - 82.9	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.523	67.3	6.93	ljl
7800	Methiocarb	µg/L	101	98.9	76.7 - 116	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.513	95.8	10.2	ljl
7805	Methomyl	µg/L	24.5	20.1	16.1 - 24.1	Not Acceptable	EPA 531.1 3.1 1995	8/1/2022	1.85	21.6	1.59	ljl
7940	Oxamyl (vydate)	µg/L	28.2	23.6	17.7 - 29.5	Acceptable	EPA 531.1 3.1 1995	8/1/2022	0.995	24.6	3.59	ljl

**WS Regulated Semivolatiles #2 Herbicides (cat# 849, lot# S312-691)**

9390	Diquat	µg/L	10.2	24.3	12.2 - 36.4	Not Acceptable	EPA 549.2 1 1997	7/30/2022	-5.68	21.4	1.97	ljl
7525	Endothall	µg/L		460	230 - 690	Not Reported				394	95.3	
9411	Glyphosate	µg/L	572	459	367 - 551	Not Acceptable	EPA 547 1990	7/29/2022	2.12	475	45.7	ljl
9528	Paraquat	µg/L		70.5	33.5 - 78.6	Not Reported				48.1	8.54	



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# CERTIFICATE OF RECOGNITION

ERA congratulates  
Energy Laboratories  
WS-312

For your participation and successful evaluation, we recognize the performance of this laboratory for achieving acceptable evaluation in the following standards.

Corrosivity

Hardness

Heterotrophic Plate  
Count

Inorganics

MicrobE™ (Coliforms)

Nitrite

o-Phosphate Nutrients

Organic Carbon

pH

Silica

Turbidity

Uranium

WS SourceWatR™

MicrobE™



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Craig Huff  
Senior Technical Manager