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Corrective action for repairs shall be completed for approval by the Office of Oil and Gas and be conducted within ninety (90) days of the failure date. If repaired, the well must be re-tested and an updated WR-37 Form must be submitted to the Office of Oil and Gas for approval.

- 13. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from the well, the packer is replaced or reseated, if well failure is likely, or as requested by the Chief. The Permittee may continue operation only if he or she has successfully demonstrated to the Chief the mechanical integrity of the permitted well. The Permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. The Permittee must send a written notification to OOG within 24 hours if mechanical integrity of the well is lost. The notification must include a plan to address the failure within 90 days. The plan must either outline a repair and retest of the well or to plug the well within 90 days.
- 14. The Permittee shall utilize a pressure recording device with a resolution of one tenth (0.1) psi to continuously record the annulus pressure. Prior to injection the operator shall note the daily annulus pressure (daily baseline). Any deviation plus or minus 25 psi during injection of the daily baseline annulus pressure shall be considered a MIT failure.
- 15. Within sixty (60) days of the issuance date of this permit, UIC 2D04103175003, the injection fluid shall be sampled for all of the following required baseline parameters: TPH GRO, TPH DRO, TPH ORO, BTEX, pH, Aluminum, Arsenic, Barium, Calcium, Chloride, Detergents (MBAS), Iron, Manganese, Sodium, Sulfate, Total Dissolved Solids, Total Suspended Solids, Total Organic Carbon, Dissolved Methane, Dissolved Ethane, Dissolved Butane, Dissolved Propane, Bacteria (Total Coliform), Specific Gravity and Radiation (NORM). Upon receipt of the laboratory analysis data, a complete copy must be submitted to the Office of Oil and Gas for review.
- 16. The Permittee shall, at least monthly, monitor any production wells in the Area of Review with a lack of cement across the injection zone (Gordon and Fifth Sand at the depth interval of 2,326' 2,504'). All monitoring records must be retained and presented if request is made. Should any communication result from fluid migration then the Permittee must immediately cease operations and shut-in the injection well and contact the Office of Oil and Gas.

C. REPORTING AND NOTIFICATION REQUIREMENTS

- Anticipated Noncompliance. The Permittee shall give advance notice to the Chief of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- 2. Other Noncompliance. The Permittee shall report all instances of noncompliance not reported under paragraphs Part I Section B, and Part II Section C Paragraph 3 of this permit, at the time monitoring reports are submitted. The report shall contain the information listed in Part I Section B of this permit. The Permittee shall report all other instances of noncompliance in writing within ten (10) days of the time the Permittee becomes aware of the circumstances. The reports shall contain the information listed in this permit.
- Planned Changes. The Permittee shall give notice to the Chief as soon as possible of any planned significant physical alterations, additions to the permitted facility, and/or any significant changes planned in the operation of the facility.
- 4. The Permittee shall provide written notification to the Chief prior to conversion or abandonment of the well or in the case of area permits before closure of the project, per Legislative Rule 47 CSR 13-13.6.e. Notice should be given at least thirty (30) days prior to any conversion, abandonment or alteration. Notice should also be given prior to the addition or reduction of wells within an area permit.
- 5. Cessation of Injection Activity. Any well which is not in use for a period of twelve (12) consecutive months shall be presumed to have been abandoned and shall promptly be plugged by the operator in accordance with the provisions in Chapter 22, Article 6 Section 24 of the West Virginia Code, unless the operator furnishes satisfactory proof to the Chief that there is a bona fide future use for such well. All lines shall be completely

8. Injection fluids from sources will be analyzed at least once every five (5) years, or upon request of the Chief, to yield representative data on their physical, chemical, or other relevant characteristics. The Permittee shall take samples at or before the wellhead for analysis. Samples and measurements shall be representative of the monitored activity. The Permittee shall utilize applicable analytical methods. The Permittee shall sample, analyze and record the nature of all the injected fluid for the parameters listed in TABLE 1 below at the initiation of the injection operation, on an annual basis, and upon request by the Chief or whenever the operator observes or anticipates a change in the injection fluid. Test results shall be submitted to the Office of Oil and Gas with laboratory analysis data-sheets (report).

TABLE 1

pН	Manganese
Specific Gravity	Total Dissolved Solids
Barium	Hydrogen Sulfide
Specific Conductance	Alkalinity
Iron	Dissolved Oxygen
Magnesium	Total Organic Carbon (TOC)
Chloride	· Hardness
Sodium	

- A wellhead pressure gauge shall be maintained on the injection tubing to facilitate inspection and ensure
 compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the
 injection pressure shall be taken and reported on Form WR-40.
- 10. The Permittee shall maintain a record (manifest) of every load of fluid received. The record shall include the hauler's name and signature, the Operator's name and signature, API number for the well the fluid was collected, the location from where the load was obtained and the volume of the load and whether the load of fluid delivered was a split load. If the load was a split load, each Operator's name and location shall be listed and, if possible, the volumes of fluid received from each Operator documented. This information shall be maintained on the Class II disposal manifest attached to this permit and maintained at the facility.
- 11. All pipelines shall be tested for integrity at least once every five (5) years, or upon request by the Chief, or following a failure and repair with the results reported on WR-37 Form along with any and all pressure test recording graph and then submitted to the Office of Oil and Gas within five (5) days. The pipeline integrity test shall pressurize the injection pipeline(s) to one hundred (100) psi greater than the maximum permitted wellhead injection pressure for a minimum of twenty (20) minutes, allowing for no more than five (5%) percent loss after the test completion. The Permittee shall notify the Chief (County Inspector) of his or her intent to conduct an integrity test of the pipeline(s) no less than twenty-four (24) hours prior to such test. Upon failure of a mechanical integrity test or expiration of the five (5) year mechanical integrity test regulatory period, the Permittee shall cease injection operations and shut-in the well immediately until successfully tested with written approval on the WR-37 Form "Pre-Authorization Certification Form". Repairs shall be completed by the Permittee and approved by the Office of Oil and Gas, All repairs shall be completed within ninety (90) days of the failure date. If repaired, the well must be re-tested and an updated WR-37 Form must be submitted to the Office of Oil and Gas for approval. Any change made to the pipeline fittings or piping will require integrity testing.
- 12. The Permittee shall conduct a mechanical integrity test (see Attachment 3) of the injection well at a minimum frequency of once every five (5) years per Legislative Rule 35 CSR 4-7.7.b or upon request by the Chief. The Permittee shall notify the Chief (County Inspector) of his or her intent to conduct a mechanical integrity test no less than twenty-four (24) hours prior to such demonstration. The Permittee must submit the test results on the WR-37 Form with each mechanical integrity test along with the pressure test recording graph and then submitted to the Office of Oil and Gas within thirty (30) days. Upon failure of a mechanical integrity test or expiration of the five (5) year mechanical integrity test regulatory period, the Permittee shall cease operation/injection and shut-in the well immediately until successfully repaired, tested or permanently plugged and abandoned per regulation.



2044 Meadowbrook Road | P.O. Box 4657 Bridgeport, WV 26330 Phone: 304.842.5285 | Fax: 304.842.5351

Martinsburg Laboratory

Ridgefield Business Center | 25 Crimson Circle Martinsburg, WV 25403 Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181 MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

LABORATORY REPORT SUMMARY

Client: C05493

Wednesday, December 27, 2017

ANGLE RIGHT SURVEYING 1584 ROAD FORK ROAD Total Number of Pages: 5 (Not Including C.O.C.)

P.O. BOX 681 GRANTSVILLE

WV 26147-

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Lab ID Sample ID Sample ID 2 Sample Date UPSTREAM (LAW WELL) 278153-2017-W PERMIT #2D4103175003 12/4/2017 278154-2017-W DOWNSTREAM (LAW WELL) PERMIT #2D4103175003 12/4/2017 278155-2017-W INJECTION WELL (LAW WELL) PERMIT #2D4103175003 12/4/2017

The enclosed results have been analyzed according to the referenced method and SOP. Any deviations to the method have been noted on the report. Unless otherwise noted, all results have been verified to meet quality control requirements of the method. All analysis performed by Reliance Laboratories, Bridgeport, WV unless otherwise noted. Parameters analyzed by Reliance Laboratories, Martinsburg, WV are noted with @ on laboratory report. This report may not be reproduced, except in full, without written approval of Reliance Laboratories, Inc.

Report Reviewed By

Digitally signed by Tenley Miller Date: 2018.01.02 22:47:15 -05'00'



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Phone: 304.842.5285 | Fax: 304.842.5351

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ANGLE RIGHT SURVEYING 1584 ROAD FORK ROAD P.O. BOX 681 GRANTSVILLE,

26147-

Wednesday, December 27, 2017

Page 2 of 5

Lab Number: 278153-2017-W

Sample ID:

UPSTREAM (LAW WELL)

PERMIT #2D4103175003

Parameter	Value	Units	Method	Date/Time A	nalyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>								
Total Alkalinity	60.9	mg CaCO3/I	SM2320B-97	12/5/2017	13:32	JL	1.55	5
Total Organic Carbon	1.26	mg/l	SM5310C-00	12/11/2017	10:11	TH	0.1	0.5
pH	# 7.16	S.U.	SM4500H+B-00	12/5/2017	13:32	JL		
Total Hardness	125	mg CaCO3/I	SM2340C-97	12/5/2017	13:30	CP	0.31	1
Total Dissolved Solids	116	mg/l	SM2540C-97	12/5/2017	10:30	JL	10	20
Total Chloride	13.5	mg/l	SM4500CLB-97	12/19/2017	13:45	CP	2.52	5
Total Sulfide	ND	mg/l	SM4500SF-00	12/5/2017	9:00	TM	11	1
Total Iron	2.08	mg/l	EPA 200.7 R4.4	12/15/2017	13:17	TH	0.004	0.05
Total Manganese	0.52	mg/l	EPA 200.7 R4.4	12/15/2017	13:17	TH	0.007	0.05
Dissolved Oxygen	# 8.96	mg/l	SM4500OG-01	12/8/2017	10:26	CP	0.12	1
Specific Conductivity	230	umhos/cm	EPA 120.1 (1982)	12/5/2017	13:31	JL		
Total Barium	0.05	mg/l	EPA 200.7 R4.4	12/15/2017	13:17	TH	0.003	0.05
Specific Gravity	1.094	g/cc	ASTM D1429-08	12/14/2017	10:00	TH		
Total Sodium	12.4	mg/l	EPA 200.7 R4.4	12/15/2017	13:17	TH	0.011	0.5
Total Magnesium	7.32	mg/l	EPA 200.7 R4.4	12/15/2017	13:17	TH	0.03	0.5

Remarks:

Date Sample Collected:

12/4/2017 K. SHREVE 12:11

Sample Submitted By: Date Sample Received:

12/4/2017

14:00

Sample temp. upon receipt: 9.8 Deg C

ND = Not Detected at the MDL or MRL

MDL - Minimum Detectable Limit

MRL - Minimum Reporting Limit

MCL - Maximum Contaminant Level, USEPA Regulated

J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: #Holding time exceeded for this analysis. This falls outside criteria set by 40CFR136.

NOTE: Sample analyzed was improperly preserved or received in an improper container.



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ANGLE RIGHT SURVEYING 1584 ROAD FORK ROAD P.O. BOX 681

Wednesday, December 27, 2017

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GRANTSVILLE,

WV

26147-

Lab Number: 278154-2017-W

Sample ID:

DOWNSTREAM (LAW WELL) PERMIT #2D4103175003

Parameter		Value	Units	Method	Date/Time A	nalyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>									
Total Alkalinity		81.1	mg CaCO3/I	SM2320B-97	12/5/2017	13:28	JL	1.55	5
Total Organic Carbon		0.98	mg/l	SM5310C-00	12/11/2017	10:11	TH	0.1	0.5
pH		# 7.83	S.U.	SM4500H+B-00	12/5/2017	13:28	JL		
Total Hardness		185	mg CaCO3/I	SM2340C-97	12/5/2017	13:30	CP	0.31	1
Total Dissolved Solids	4	202	mg/l	SM2540C-97	12/5/2017	10:30	JL	10	20
Total Chloride		11.0	mg/l	SM4500CLB-97	12/19/2017	13:45	CP	2.52	5
Total Sulfide		ND	mg/l	SM4500SF-00	12/5/2017	9:00	TM	1	1
Total Iron		0.06	mg/l	EPA 200.7 R4.4	12/15/2017	13:24	TH	0.004	0.05
Total Manganese		0.10	mg/l	EPA 200.7 R4.4	12/15/2017	13:24	TH	0.007	0.05
Dissolved Oxygen		# 9.15	mg/l	SM4500OG-01	12/8/2017	10:27	CP	0.12	1
Specific Conductivity		339	umhos/cm	EPA 120.1 (1982)	12/5/2017	13:27	JL		
Total Barium	J	0.04	mg/l	EPA 200.7 R4.4	12/15/2017	13:24	TH	0.003	0.05
Specific Gravity		1.098	g/cc	ASTM D1429-08	12/14/2017	10:00	TH	THE RESERVE OF THE PARTY OF THE	
Total Sodium		11.6	mg/l	EPA 200.7 R4.4	12/15/2017	13:24	TH	0.011	0.5
Total Magnesium	and the second second second	13.1	mg/l	EPA 200.7 R4.4	12/15/2017	13:24	TH	0.03	0.5

Remarks:

Date Sample Collected:

12/4/2017

12:22

Sample Submitted By:

K. SHREVE

Date Sample Received:

12/4/2017

MCL - Maximum Contaminant Level, USEPA Regulated

14:00

Sample temp. upon receipt: 9.8 Deg C MDL - Minimum Detectable Limit

ND = Not Detected at the MDL or MRL

MRL - Minimum Reporting Limit

J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: #Holding time exceeded for this analysis. This falls outside criteria set by 40CFR136.

NOTE: Sample analyzed was improperly preserved or received in an improper container



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ANGLE RIGHT SURVEYING 1584 ROAD FORK ROAD P.O. BOX 681 Wednesday, December 27, 2017

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GRANTSVILLE,

WV

26147-

Lab Number: 278155-2017-W

Sample ID: INJECTION WELL (LAW WELL)

PERMIT #2D4103175003

Parameter	Value	Units	Method	Date/Time A	nalyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>								
Total Organic Carbon	ND	mg/l	SM5310C-00	12/11/2017	10:11	TH	0.1	0.5
Total Suspended Solids	2180	mg/l	SM2540D-97	12/6/2017	10:00	JL	4	5
Specific Gravity	1.124	g/cc	ASTM D1429-08	12/14/2017	10:00	TH		
E.coli(MPN)**	< 1	Index/100ml	SM9223B-97	12/4/2017	16:58	CP		
pH	# 4.27	S.U.	SM4500H+B-00	12/11/2017	16:00	JL		
Total Aluminum	ND	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.009	0.05
Total Arsenic	ND	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.007	0.05
Total Barium	142	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.003	0.05
Total Calcium	15190	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.078	0.5
Total Chloride	147034	mg/l	EPA 300.0 R2.1	12/6/2017	23:47	TM	0.15	0.5
Total Coliform(MPN)**	< 1	Index/100ml	SM9223B-97	12/4/2017	16:58	CP		
Total Dissolved Solids	142960	mg/l	SM2540C-97	12/6/2017	10:00	JL	10	20
Total Iron	334	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.004	0.05
Total Manganese	21.7	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.007	0.05
Total Sodium	43800	mg/l	EPA 200.7 R4.4	12/15/2017	13:26	TH	0.011	0.5
Total Sulfate	27.3	mg/l	EPA 300.0 R2.1	12/6/2017	23:47	TM	0.12	0.5
Total Surfactant	8.05	mg/l	SM5540C-00	12/5/2017	14:45	JL	0.05	0.2

Remarks:

Date Sample Collected:

12/4/2017

12:30

Sample Submitted By: Date Sample Received: K, SHREVE 12/4/2017

14:00

Sample temp. upon receipt: 9.8 Deg C

ND = Not De

MDL - Minimum Detectable Limit

ND = Not Detected at the MDL or MRL

MRL - Minimum Reporting Limit

MCL - Maximum Contaminant Level, USEPA Regulated

J = Reported value is an estimate because concentration is less than the MRL

"Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: #Holding time exceeded for this analysis. This falls outside criteria set by 40CFR136.

NOTE: Sample analyzed was improperly preserved or received in an improper container.



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Wednesday, December 27, 2017

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WV

26147-

Lab Number: 278155-2017-W

Sample ID:

INJECTION WELL (LAW WELL)

PERMIT #2D4103175003

Parameter		Value	Units	Method	Date/Time A	nalyzed	Analyst	MDL	MRL
Analyte Group: To	otal Petroleum	Hydrocarbons							
TPH - DRO		57.6	mg/l	SW8015B/3535A	12/11/2017	15:25	JL	0.68	1
TPH - ORO	gija et gegen geha gene demokratie e angengemen eng na memo yan et a kelitik et e	13.8	mg/l	SW8015B/3535A	12/11/2017	15:25	JL	0.54	1
o-Terphenyl (Surrogate	9)	110	%	SW8015B	12/11/2017	15:25	JL		
Benzene		ND	mg/l	SW8021B/5030B	12/13/2017	14:58	TM	0.0007	0.01
Ethylbenzene		ND	mg/l	SW8021B/5030B	12/13/2017	14:58	TM	0.0014	0.01
Toluene		ND	mg/l	SW8021B/5030B	12/13/2017	14:58	TM	0.002	0.01
TPH - GRO		36.6	mg/l	SW8015B/5030B	12/13/2017	14:58	TM	0.04	0.5
Xylene		ND	mg/l	SW8021B/5030B	12/13/2017	14:58	TM	0.003	0.01
4-Bromochlorobenzen	e (Surrogate	104	%	SW8021B/8015B	12/13/2017	14:58	TM		

Remarks:

Date Sample Collected:

12/4/2017

12:30

Sample Submitted By: Date Sample Received: K. SHREVE 12/4/2017

14:00

Sample temp. upon receipt: 9.8 Deg C

ND = Not Detected at the MDL or MRL

MDL - Minimum Detectable Limit

MRL - Minimum Reporting Limit

MCL - Maximum Contaminant Level, USEPA Regulated

 ${f J}$ = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: #Holding time exceeded for this analysis. This falls outside criteria set by 40CFR136.

NOTE: Sample analyzed was improperly preserved or received in an improper container.



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204 Tel: (615)726-0177

TestAmerica Job ID: 490-142482-1

Client Project/Site: Reliance Laboratories

For:

Reliance Laboratories Inc PO BOX 4657 Bridgeport, West Virginia 26330

Attn: Tenley Miller

Mark Swefford

Authorized for release by: 12/20/2017 9:32:49 AM Mark Swafford, Project Manager I (850)471-6207 mark.swafford@testamericainc.com

Designee for

Jennifer Gambill, Project Manager I (615)301-5044 jennifer.gambill@testamericainc.com

Review your project results through Total Access

..... LINKS

Have a Question?

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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	00:71 11 (00.71	Water	W-7102-221872	490-142482-1
Received 10:10	Collected 12:30	Matrix	Client Sample ID	Lab Sample ID

Job ID: 490-142482-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative r-satstr-0et Comments
No additional comments.

Receipt

The sample was received on 12/6/2017 10:10 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

GC Semi VOA

Method RSK-175: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 490-483680.

Method RSK-175: The Acetylene (Surr) recovery for the following sample was outside control limits: 278155-2017-W (490-142482-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Toxicity Equivalent Quotient (Dioxin)

Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin)

TEQ

TEF

RPD

RER

ВГ

Laborator	Reliance	Project/Site:

σc	Quality Control	
ЬŐГ	Practical Quantitation Limit	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NC	Not Calculated	
ML	Minimum Level (Dioxin)	
MDF	Method Detection Limit	
MDC	Minimum Detectable Concentration (Radiochemistry)	
AdM	Minimum Detectable Activity (Radiochemistry)	
ГОО	Limit of Quantitation (DoD/DOE)	
LOD	Limit of Detection (DoD/DOE)	
EDF	Estimated Detection Limit (Dioxin)	
DFC	Decision Level Concentration (Radiochemistry)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DF	Detection Limit (DoD/DOE)	
Dil Fac	Dilution Factor	
DER	Duplicate Error Ratio (normalized absolute difference)	
CNE	Contains No Free Liquid	
CEL	Contains Free Liquid	
Я%	Percent Recovery	
n	Listed under the "D" column to designate that the result is reported on a dry weight basis	2 —
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
Glossary		
Х	Surrogate is outside control limits	9
Qualifier	Qualifier Description	
GC VOA		
Qualifiers		
Project/Site. r	Zelisuce rapolatones	

Client Sample Results

Client: Reliance Laboratories Inc Project/Site: Reliance Laboratories TestAmerica Job ID: 490-142482-1

Client Sample ID: 278155-2017-W

Date Collected: 12/04/17 12:30 Date Received: 12/06/17 10:10 Lab Sample ID: 490-142482-1

Matrix: Water

Method: RSK-175 - Dis Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	43.3		10.0	5.80	ug/L			12/15/17 17:35	1
Butane	388		5.00	2.70	ug/L			12/15/17 17:35	1
Ethane	1420		25.0	8.50	ug/L			12/15/17 17:29	5
Methane			5.00		ug/L			12/15/17 17:35	1
Propane	131		3.00	3.50	ugic				
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Acetylene (Surr)	191	X	62 - 124					12/15/17 17:35	1

QC Sample Results

Client: Reliance Laboratories Inc Project/Site: Reliance Laboratories TestAmerica Job ID: 490-142482-1

Method: RSK-175 - Dissolved Gases in Water

Lab Sample ID: MB 490-483680/51

Matrix: Water

Analysis Batch: 483680

Client	Sample	ID:	Meth	od	Blank
	Pr	ep 1	Гуре:	To	tal/NA

-	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butane	ND		10.0	5.80	ug/L			12/15/17 16:42	1
Ethane	ND		5.00	2.70	ug/L			12/15/17 16:42	1
Methane	ND		5.00	1.70	ug/L			12/15/17 16:42	1
Propane	ND		5.00	3.30	ug/L			12/15/17 16:42	1

MB MB

Dil Fac Prepared Analyzed Limits %Recovery Qualifier Surrogate 12/15/17 16:42 62 - 124 Acetylene (Surr) 88

> Client Sample ID: Lab Control Sample Prep Type: Total/NA

Lab Sample ID: LCS 490-483680/52

Matrix: Water

Analysis Batch: 483680

Analysis Luisin 1919	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Butane	1020	1002		ug/L		98	80 - 120
Ethane	527	539.3		ug/L		102	80 - 120
Methane	287	297.2		ug/L		104	80 - 120
Propane	771	783.6		ug/L		102	80 - 120

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Acetylene (Surr)	98		62 - 124

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Lab Sample ID: LCSD 490-483680/53

Matrix: Water

Analysis Ratch: 483680

Analysis Batch: 403000	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Butane	1020	1054		ug/L		103	80 - 120	5	33
Ethane	527	551.6		ug/L		105	80 - 120	2	30
	287	303.3		ug/L		106	80 - 120	2	33
Methane Propane	771	808.2		ug/L		105	80 - 120	3	33

LCSD LCSD Limits %Recovery Qualifier Surrogate 94 62 - 124 Acetylene (Surr)

QC Association Summary

Client: Reliance Laboratories Inc Project/Site: Reliance Laboratories TestAmerica Job ID: 490-142482-1

GC VOA

Analysis Batch: 483680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-142482-1	278155-2017-W	Total/NA	Water	RSK-175	***
490-142482-1	278155-2017-W	Total/NA	Water	RSK-175	
MB 490-483680/51	Method Blank	Total/NA	Water	RSK-175	
LCS 490-483680/52	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 490-483680/53	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Lab Chronicle

Client: Reliance Laboratories Inc Project/Site: Reliance Laboratories TestAmerica Job ID: 490-142482-1

Lab Sample ID: 490-142482-1

Matrix: Water

Client Sample ID: 278155-2017-W

Date Collected: 12/04/17 12:30 Date Received: 12/06/17 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		1
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		5	21 mL	21 mL	483680	12/15/17 17:29	AAB	TAL NSH
Total/NA	Analysis	RSK-175		1	21 mL	21 mL	483680	12/15/17 17:35	AAB	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TestAmerica Nashville

Method Summary

Client: Reliance Laboratories Inc Project/Site: Reliance Laboratories TestAmerica Job ID: 490-142482-1

MethodMethod DescriptionProtocolLaboratoryRSK-175Dissolved Gases in WaterRSKTAL NSH

Protocol References:

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TestAmerica Nashville

Accreditation/Certification Summary

Client: Reliance Laboratories Inc Project/Site: Reliance Laboratories TestAmerica Job ID: 490-142482-1

Laboratory: TestAmerica Nashville

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
West Virginia DEP	State Program	3	219	02-28-18

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THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN

COOLER RECEIPT FORM



Cooler Received/Opened On 12/06/17 1010 1010	
Time Samples Removed From Cooler 1556 Time Samples Placed In Storage 155	(2 Hour Window)
1. Tracking # 1962 (last 4 digits, FedEx) Courier: _FedEx_	
IR Gun ID 31470368 pH Strip Lot NIA Chlorine Strip Lot N/	4
2. Temperature of rep. sample or temp blank when opened: 3 - 2 Degrees Celsius	
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen?	YES NO. WA
Were custody seals on outside of cooler?	YES (NO NA
If yes, how many and where:	
5. Were the seals intact, signed, and dated correctly?	YESNO(NA)
6. Were custody papers inside cooler?	YES NO NA
I certify that I opened the cooler and answered questions 1-6 (intial)	
7. Were custody seals on containers: YES NO and Intact	YESNONA
Were these signed and dated correctly?	YESNO.CNA
8. Packing mat'l used? Subblewrap Plastic bag Peanuts Vermiculite Foam Insert I	Paper Other None
9. Cooling process: dce lce-pack lce (direct contact) Dry i	ce Other None
10. Did all containers arrive in good condition (unbroken)?	YES NO NA
11. Were all container labels complete (#, date, signed, pres., etc)?	YES .NONA
12. Did all container labels and tags agree with custody papers?	(ESNONA
13a. Were VOA vials received?	YE8NONA
b. Was there any observable headspace present in any VOA vial?	YES. NA
Larger than this.	
14. Was there a Trip Blank in this cooler? YESNO/NA If multiple coolers, sequ	ience#
14. Was there a Trip Blank in this cooler? YES(NONA If multiple coolers, sequence of the cooler and answered guestions 7-14 (Intial)	uence #
14. Was there a Trip Blank in this cooler? YES(10)NA If multiple coolers, sequence of the cooler and answered questions 7-14 (Initial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level?	YESNO (NA)
I certify that I unloaded the cooler and answered guestions 7-14 (intial)	
1 certify that I unloaded the cooler and answered questions 7-14 (intial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level?	YESNO.ANA
1 certify that I unloaded the cooler and enswered questions 7-14 (Initial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used	YESNONA
1 certify that I unloaded the cooler and answered questions 7-14 (initial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used 16. Was residual chlorine present?	YESNONA
1 certify that I unloaded the cooler and answered questions 7-14 (intial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used 16. Was residual chlorine present? I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)	YESNO.ANA YESNONA
1 certify that I unloaded the cooler and answered questions 7-14 (initial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used 16. Was residual chlorine present? I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) 17. Were custody papers properly filled out (ink, signed, etc)?	YESNONA YESNONA (YESNONA
1 certify that I unloaded the cooler and answered questions 7-14 (intial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used 16. Was residual chlorine present? I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) 17. Were custody papers properly filled out (ink, signed, etc)? 18. Did you sign the custody papers in the appropriate place?	YESNONA YESNONA YESNONA NESNONA
1 certify that I unloaded the cooler and answered questions 7-14 (initial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used 16. Was residual chlorine present? I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) 17. Were custody papers properly filled out (ink, signed, etc)? 18. Did you sign the custody papers in the appropriate place? 19. Were correct containers used for the analysis requested?	YESNONA YESNONA YESNONA NESNONA
1 certify that I unloaded the cooler and answered questions 7-14 (initial) 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? b. Did the bottle labels indicate that the correct preservatives were used 16. Was residual chlorine present? 1 certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) 17. Were custody papers properly filled out (ink, signed, etc)? 18. Did you sign the custody papers in the appropriate place? 19. Were correct containers used for the analysis requested? 20. Was sufficient amount of sample sent in each container?	YESNONA YESNONA YESNONA NESNONA

BIS = Broken in shipment Cooler Receipt Form.doc

LF-I End of Form Revised 8/23/17

YELLOW - CLIENT

WHITE - LABORATORY

*PROJECT/REMARKS W-176-321816 142482 Loc: 490 SHEET NO. 596-2086 RELIANCE LABORATORIES, INC. - CHAIN OF CUSTODY RECORD PWS# PRIDGEFIELD BUSINESS CENTER 25 CRIMSON CIRCLE MARTINSBURG, WV 25403 TEL. (304) 596-2084 • FAX (304) 59 WEATHER/TEMPERATURE: REMARKS: NaOH BAC-T FAX# MEET USEPA GUIDELINES FOR CHEMICAL PRESERVATIVES MEET USEPA GUIDELINES FOR SAMPLE CONTAINERS 보 RECEIVED BY: でるで FOR REGULATORY COMPLIANCE PURPOSES MEET USEPA GUIDELINES FOR HOLDING TIMES H2S04 POST OFFICE BOX 4657 BRIDGEPORT, WV 26330 TEL. (304) 842-5285 • FAX (304) 842-5351 E-MAIL reliancelabs@wvdsl.net INTERNEJ www.ReliancqLabs.net HNO3 anoratories PRINT: TEMP. ≤ 4°C *# OF Yes No CONTAIN. *TEL.# E-MAIL 2044 MEADOWBROOK ROAD SATETIME (600 DATETIME MATRIX W, DW, S, O, M DATE: 12 Reliance 'GRAB NARE NOT TIME Y DO NOT TON OOT TON OU

P

* TO BE COMPLETED BY CLIENT ORIGINAL CHAIN OF CUSTODY DOCUMENT MUST BE EXECUTED IN INK

SIGN:

PRINT

DATE: 12/C/7

TIME

CUO

TRACKING#

*COURIER:

SHOULD RELANCE LABORATORIES, INC. BE AT FAULT AND ANY DISPUTE ARISE REGARDING ANALYTICAL DATA GENERATED 8Y THE LABORATORY, THE EXTENT OF THE LABULTY OF DEELANGES WILL BE A DIPLICATE FARMYINSO OF THAY SAMPLE PROVIDING ADGIUATE SAMPLE REMAINS) OR A REFUND OF THE AMALYTICAL FEE. IN NO EVENT WILL RELANGE LABORATORIES BE LABLE FOR DAMAGES INCLUDING BIT NOT LIMITED TO DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES ARBING FORD SUPPLY. NOTE. TYPICAL SAMPLE TURN AROUND FOR ROUTINE SAMPLES IS 5 TO 10 WORKING DAYS. THIS IN NOT A GUARANTEE THAT SAMPLES WILL BE COMPLETED IN THIS TIME FRAME HOWEVER. NON-ROUTINE SAMPLES MAY RECUME ADDITIONAL TIME.

*** ADDITIONAL LABORATORY FEES MAY APPLY***

EXTENT OF LIABILITY

*RECEIVED BY:

PRINT:

*RECEIVED BY:

SIGN:

PRINT:

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*DATE/TIME

TIME DATE

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SAMPLES ARE

SAMPLES DO SAMPLES DO SAMPLES DO_ ☐ RUSH STATUS (INITIAL ACCEPTANCE.

LABORATORY # | *DATE

SAMPLER (S) CUSTOMER #

CLIENT NAME

*ADDRESS



RELIANCE LABORATORIES, INC.

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT. WV

www.RelianceLabs.net

MARTINSBURG, WV

Certifications: WV Department of Health #: 00354, 00493. | WV Department of Environmental Protection #: 158, 181 | MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00801.

Tuesday, December 05, 2017

TestAmerica - Nashville 2960 Foster Creighton Drive Nashville, TN 37204

Please analyze the following sample(s) for: Dissolved Methane/Ethane/Butane/Propane

Please identify as:

278155-2017-W

DATE/TIME SAMPLED: 12/4/2017 12:30

Sampled by: K.Shreve

PLEASE SEND RESULTS & INVOICE TO:

RELIANCE LABORATORIES, INC. ATTN: TENLEY MILLER P.O. BOX 4657 BRIDGEPORT, WV 26330 tmiller@wvdsl.net 142482

Thank You

2044 MEADOWBROOK ROAD | P.O. BOX 4657 | BRIDGEPORT, WV 26330 | VOICE: 304-842-5265 | FAX: 304-842-5351 RIDGEFIELD BUSINESS CENTER | 25 CRIMSON CIRCLE | MARTINSBURG; WV 26403 | VOICE: 304-596-2084 | FAX: 304-696-2086





December 28, 2017

Ms. Tenley Miller Reliance Laboratories, Inc. 2044 Meadowbrook Road P.O. Box 4657 Bridgeport, WV 26330

RE: Project: 278155

Pace Project No.: 30237781

Dear Ms. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on December 06, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Laura M. Pirilla

laura.pirilla@pacelabs.com

Laura Piulla

(724)850-5616 Project Manager

Enclosures







CERTIFICATIONS

Project:

278155

Pace Project No.:

30237781

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143 West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L





SAMPLE SUMMARY

Project:

278155

Pace Project No.:

30237781

Lab ID

Sample ID

Matrix

Date Collected

Date Received

30237781001

278155-2017-W

Water

12/04/17 12:30

12/06/17 10:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:

278155

30237781001

Pace Project No.: 30237781

278155-2017-W

Lab ID Sample ID Method

EPA 901.1

Analysts

Analytes Reported

MAH

8

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project:

278155

Pace Project No.:

30237781

Method:

EPA 901.1

Description: 901.1 Gamma Spec

Client:

Reliance Laboratories, Inc.

Date:

December 28, 2017

General Information:

1 sample was analyzed for EPA 901.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

(724)850-5600



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project:

278155

Pace Project No.: 30237781

Sample: 278155-2017-W

Lab ID: 30237781001

Collected: 12/04/17 12:30 Received: 12/06/17 10:10 Matrix: Water

PWS:

Sample Type:

Comments:
• Sample collection dates and times were not present on the sample containers.
• 12/6/17 - Added 3ml HNO3 to bottles prior to analysis. pH <2.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Bismuth-212	EPA 901.1	425.490 ± 111.140 (96.790) C:NA T:NA	pCi/L	12/27/17 13:04	14913-49-6	
Bismuth-214	EPA 901.1	309.700 ± 41.578 (19.090) C:NA T:NA	pCi/L	12/27/17 13:04	14733-03-0	
Lead-212	EPA 901.1	334.940 ± 40.434 (18.850) C:NA T:NA	pCi/L	12/27/17 13:04	15092-94-1	
Lead-214	EPA 901.1	293.000 ± 39.292 (20.290) C:NA T:NA	pCi/L	12/27/17 13:04	15067-28-4	
Potassium-40	EPA 901.1	239.230 ± 76.750 (64.880) C:NA T:NA	pCi/L	12/27/17 13:04	13966-00-2	
Radium-226	EPA 901.1	1003.500 ± 265.350 (253.900) C:NA T:NA	pCi/L	12/27/17 13:04	13982-63-3	
Radium-228	EPA 901.1	573.570 ± 70.576 (30.620) C:NA T:NA	pCi/L	12/27/17 13:04	15262-20-1	
Thallium-208	EPA 901.1	115.210 ± 17.401 (10.050) C:NA T:NA	pCi/L	12/27/17 13:04	14913-50-9	



Thallium-208

Radium-228

Radium-226

Lead-214

Lead-212

₽r2-dtumeia

Potassium-40

QUALITY CONTROL - RADIOCHEMISTRY

	12/22/17 11:07		J\iOq	± 15,907 (152,900) C:NA T:NA	000.0	StS-dlumsi8
	Qualifiers	bezylsnA	stinU	Act ± Unc (MDC) Carr Trac	eţet	Param
					oles: 30237781001	Associated Lab Sam
			The second second	Matrix: Water	1389161	WETHOD BLANK:
					100187781001	Associated Lab Sam
		ia Spec	901.1 Gamn	Analysis Description:	F.106 A93	QC Batch Method:
898/07 (1110 CHRISTOCK) (121 CHRISTOCK)			1.106 A93	:hodysis Method	282984	QC Batch:
					18775208	Pace Project No.:
					578155	Project:

DCi/L

DCi/L

J\iDq

DCi/L

DCi/L

DCi/L

DCi/L

12/22/17 11:07

12/22/17 11:07

12/22/17 11:07

12/22/17 11:07

12/22/17 11:07

12/22/17 11:07

12/22/17 11:07

1.522 ± 6.684 (8.414) C:NAT:NA

17.104 ± 19.284 (27.730) C:NA T:NA

140.320 ± 131.780 (156.100) C:NA

0.000 ± 57.696 (145.700) C:NAT:NA

0.000 ± 10.176 (22.120) C:NA T:NA

0.000 ± 6.688 (17.120) C:NA T:NA

0.000 ± 14.733 (26.290) C:NA T:NA

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.





QUALIFIERS

Project:

278155

Pace Project No.:

30237781

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Date: 12/28/2017 11:45 AM

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

	SHEET NO. OF	MO#:30237781 MO#:30237781	PWS# WEATHER/TEMPERATURE: *** ADDITIONAL LABORATORY FEES MAY APPLY*** EXTENT OF LIABILITY SHOULD RELANCE LABORATORY FEES MAY APPLY*** EXTENT OF LIABILITY SHOULD RELANCE LABORATORIES, INC. BE AT FAULT AND ANY DISPUTE ARBES REGARDING ANALYTICAL DATA GENERATED BY THE LABORATORY, THE EXTENT OF THE LABURITY OF ELABLE. IN THE LABURITY OF ELABLE, CHECKNOWING AND SHOULD ARBEST OF THAT SAMPLE RELANGE NOTHER ANALYTICAL FEE. IN NO EVENT WILL RELLANGE LEAGRACORIES BE LABLE FOR DAMAGES INCLUDING BUT NOT IMPRED TO DIRECT INDIRECT OR CONSEQUENTIAL DAMAGES ARBING FROM SUCH DISPUTE. NOTE: TYPICAL SAMPLE THAN AROUND FOR BOYING SAMPLES BY REQUIRE ADDITIONAL TIME. *** TO BE CONSTORY DOCUMENT MUST BE EXECUTED IN INK WHITE-LABORATORY YELLOW-CLIENT WHITE-LABORATORY YELLOW-CLIENT
RELIANCE LABORATORIES, INC CHAIN OF CUSTODY RECORD 2044 MEADOWBROOK ROAD POST OFFICE BOX 4657 BRIDGEPORT, WV 26330 TEL. (304) 842-5351 FEL. (304) 842-5351	*TEL_# FAX#FAX#	CONTAIN. HN03 H2S04 HCL NaOH BAC-7 PRES.	ERVATIVES NERS S
	(s) H. Shreve	ABORATORY# *DATE TIME S S W. DM, S, O, M Yes No CONTAIN. THE S S S W. DW, S, O, M Yes No CONTAIN. A CONTAIN. A CONTAIN.	SAMPLES DO DO NOT MEET USEPA GUIDELINES FOR HOLDING TIMES SAMPLES DO DO NOT MEET USEPA GUIDELINES FOR HOLDING TIMES SAMPLES DO DO NOT MEET USEPA GUIDELINES FOR HOLDING TIMES SAMPLES DO DO NOT MEET USEPA GUIDELINES FOR HOLDING TIMES SAMPLES DO DO NOT MEET USEPA GUIDELINES FOR HOLDING TIMES PRINT: FOR REGULATORY COMPLIANCE PURPOSES SIGN: TRECINQUISHED BY: "DATE: 12-6-17 SIGN: "RECEIVED BY TIME: LO IO TIME: LO IO TIME: "DATE: TIME: "DATE: "SIGN: "RECEIVED BY TRACKING#: "TIME: "DATE: TIME: "SIGN: "RECEIVED BY TRACKING#: "TIME: "DATE: TIME: "SIGN: "RECEIVED BY TRACKING#: TIME: "DATE: TIME: "SIGN: "RECEIVED BY TIME: "DATE: "TIME: "SIGN: "RECEIVED BY TIME: "DATE: TIME: "SIGN: "RECEIVED BY TIME: "DATE: TIME: "SIGN: "RECEIVED BY TIME: "DATE: TIME: "DATE: "TIME: "SIGN: "RECEIVED BY TIME: "DATE: "TIME: "DATE: "TIME: "DATE: "TIME: "DATE: "TIME: "TIME: "DATE: "TIME: "DATE: "TIME: "DATE: "TIME: "



RELIANCE LABORATORIES, HVC2 37781_

ENVIRONMENTAL ANALYSTS AND CONSULTANTS

BRIDGEPORT, WV.

www.RelianceLabs.net

MARTINSBURG, WV

Certifications: WV Department of Health #: 00354, 00433 | WV Department of Environmental Protection #: 158, 181

MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

Tuesday, December 05, 2017

Pace Analytical Services 1638 Roseytown Road Suites 2,3,4 Greensburg, PA 15601

Please analyze the following sample for: Radiation (NORM)

Please identify as:

278155-2017-W

Date/Time Sampled: 12/4/2017 12:30

Sampled by: K.Shreve

PLEASE SEND RESULTS & INVOICE TO:

RELIANCE LABORATORIES, INC. ATTN: TENLEY MILLER P.O. BOX 4657 BRIDGEPORT, WV 26330 tmiller@wvdsl.net

Thank You

Pittsburgh Lab Sample Condition Upon Receipt							
Pace Analytical Client Name:	<u>R</u>	elie	anc	e (abs Projet) 237781			
Courier: A Fed Ex UPS USPS Client Commercial Pace Other Label /// LIMS Login							
Clastical Series None							
Thermometer Used Type of ice: Well Blue None Compared to the Section Compare							
Cooler Temperature Observed Temp 26 °C Correction Factor: O.C5 °C Final Temp: 2.6 °C							
Temp should be above freezing to 6°C				Date and Initials of person examining contents:			
Comments	Yes	No	N/A	contents: ///C. 12 U.			
Chain of Custody Present	Z			1.			
Chain of Custody Present:		-		2.			
Chain of Custody Filled Out:				3.			
Chain of Custody Relinquished:		Z		4.			
Sampler Name & Signature on COC:				5. No clate/time on samples			
Sample Labels match COC: -Includes date/time/ID Matrix:	Inda.		Ļ	100 600,011			
		ľ	Ī	6.			
Samples Arrived within Hold Time:				7.			
Short Hold Time Analysis (<72hr remaining):		\bigcirc		8.			
Rush Turn Around Time Requested:	X			9,			
Sufficient Volume:		7		10.			
Correct Containers Used:	\Diamond	*		10.			
-Pace Containers Used:				11.			
Containers Intact:				12.			
Orthophosphate field filtered			>				
Hex Cr Aqueous Compliance/NPDES sample field filtered				13.			
Organic Samples checked for dechlorination:				14.			
Filtered volume received for Dissolved tests			\times	15.			
All containers have been checked for preservation.				16. Added 3 ML HNO, to All Sampler			
All containers needing preservation are found to be in compliance with EPA recommendation.		\times					
				Initial when Completed Date/time of 2 6-17 1530			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Lot # of added 117 1331			
				preservative Land Land			
Headspace in VOA Vials (>6mm):				17.			
Trip Blank Present:		\times		18.			
Trip Blank Custody Seals Present			\succeq	Initial when 40/ 10/10/17			
Rad Aqueous Samples Screened > 0.5 mrem/hr	-	X		Initial when completed: MC Date: 2-6-17			
Client Notification/ Resolution:							
Person Contacted: Date/Time: Contacted By:							
Comments/ Resolution:							

☐ A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.