



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

**Laboratory Services & Applied Science Division
Water Quality Section
980 College Station Road
Athens, Georgia 30605-2720**

November 22, 2021

MEMORANDUM

SUBJECT: Gunnison POTW Final Report
Gunnison, MS
LSASD Project ID: 21-0362

FROM: Chris McHugh, Environmental Engineer *Christopher McHugh*
Water Quality Section

THRU: Greg White, Chief
Water Quality Section

TO: Jairo Castillo-Valenzuela, P.E., Chief
Wastewater Enforcement Section
Enforcement & Compliance Assistance Division

Attached is the Final Report for the Gunnison POTW NPDES Reconnaissance Inspection.

If you have any questions concerning the sampling event, please call me at (706) 410-4082 or email me at mchugh.christopher@epa.gov.

Attachments:

cc (via email): Dennis Sayre, ECAD
Sandra Aker, LSASD

Mission: To provide sound Science to our customers through superior environmental evaluation

Vision: To be a solutions-oriented organization, and seen as a leader in sound science through innovation, responsive customer service, and cutting-edge expertise

Project ID: 21-0362

**NPDES Reconnaissance Inspection
Report**

Gunnison POTW

**Mike Thompson Rd
Gunnison, MS**

Project Date: September 22, 2021

Report Date: November 22, 2021

Project Leader: Chris McHugh
Environmental Engineer
Water Quality Section
Field Services Branch
Laboratory Services and Applied Science Division
USEPA – Region 4
980 College Station Road
Athens, Georgia 30605-2720

The ANSI National Accreditation Board attests that U.S. EPA Region 4 Laboratory Services and Applied Science Division fulfills the requirements of ISO/IEC 17025:2017 ANAB Forensic Testing & Calibration AR 3125:2019 in the field of Forensic Testing. The activities contained in this report fall within the scope of accreditation, Certificate Number: FT-0330. Expires 31 July 2022.



LSASD
LABORATORY SERVICES & APPLIED SCIENCE DIVISION

Requestor:

Jairo Castillo, Chief
Water Enforcement Branch
Enforcement and Compliance Assurance Division
USEPA – Region 4
61 Forsyth Street SW
Atlanta, GA, 30303-8960

Analytical Support:

Inorganic Chemistry Section
Laboratory Services and Applied Science
Division
980 College Station Rd Athens, GA 30605

Approvals:

LSASD Project Leader:



Chris McHugh
Water Quality Section
Field Services Branch
Laboratory Services and Applied Science Division

Approving Official:

Greg White, Chief
Water Quality Section
Field Services Branch
Laboratory Services and Applied Science Division

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**NPDES Reconnaissance Inspection
Gunnison POTW (Permit No. MS0042943)**

1. Introduction

On September 22, 2021, a representative of the U.S. Environmental Protection Agency (USEPA) Region 4 Laboratory Services and Applied Science Division (LSASD) conducted a National Pollutant Discharge Elimination System (NPDES) Reconnaissance Inspection at Gunnison Publicly Owned Treatment Works (POTW) in Gunnison, Mississippi. The evaluation was requested by the ECAD Water Enforcement Branch as part of the agency's goal to address significant non-compliance (SNC) facilities. A grab sample was collected at 10:40 am and analyzed for Total Suspended Solids (TSS), Ammonia (NH₃), and Biochemical Oxygen Demand (BOD₅), listed on the issued NPDES Permit MS0042943. The inspection followed the procedures listed in the LSASD Project No. 21-0362 and 21-0363 Sample and Analysis Plan (SAP). Table 1 lists the sampling participants.

Table 1 – Inspection Personnel

Inspector	Organization	Date(s) on site
Chris McHugh	USEPA Region 4 LSASD	9/22/21

2. Summary

The facility was accessed via gate and the facility grounds around the lagoon were heavily impacted by vegetation. Some attempt to clear the entrance was made prior to the inspection by city employees; however, access to the lagoon was limited due to overgrowth of vegetation. The operator of the facility was not present during the inspection. It was not evident that there was any disinfection of the lagoon effluent before leaving the treatment system. Because there was not a clear effluent discharge location, the sample was collected on the front edge of the lagoon as shown in Figure 1. The sample was analyzed for the parameters listed on the facility's NPDES permit (Total Suspended Solids, Ammonia, and Biochemical Oxygen Demand).

It is recommended that ECAD work with the Mississippi Department of Environmental Quality (MDEQ) to determine the appropriate response to address the lack of disinfection and upkeep of the Gunnison POTW.

3. Grab Sampling Results

Since there was not an effluent discharge location found on the property, the grab sample was collected at the location in Figure 1 (33°56'38" N, -90°55'52" W) below at the edge of the lagoon. Note, effort was made to locate the permitted EFF001 location via Aerial maps, and but there isn't any indication on historic maps of a disinfection chamber or discharge location.)

The sample results for TSS and BOD₅ exceeded the permitted limits that are permissible to be discharged. Note, there was no discharge location found

Table 2 – EPA Sample Results vs. Permitted Limits

Analyte	EPA Analytical Results	Permitted Limit	Sample Location
TSS	1400 mg/L	45 mg/L Weekly Avg.	Lagoon edge
NH ₃	1.6 mg/L	3.0 mg/L Weekly Avg.	Lagoon edge
BOD ₅	89 mg/L *A	45 mg/L Weekly Avg.	Lagoon edge

DATA QUALIFIER DEFINITIONS

*A - The analyte was analyzed in replicate. Reported value is an average value of the replicates.

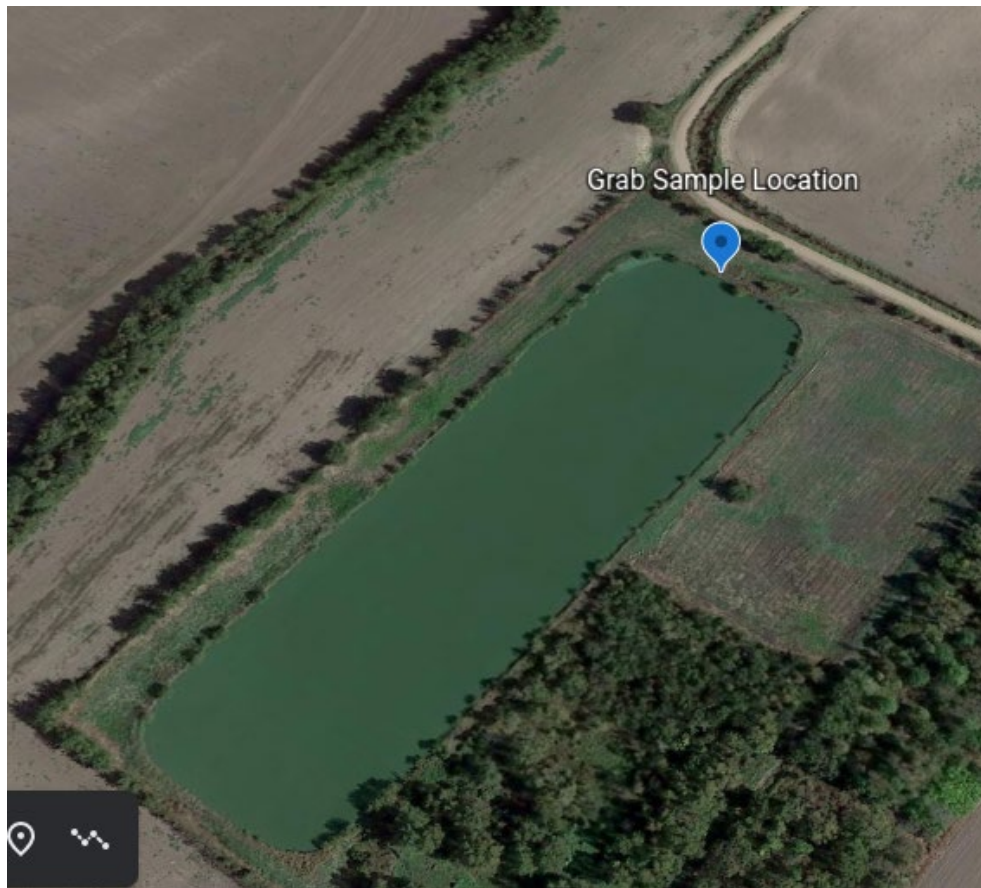


Figure 1 – Sample Collection Point
33°56'38" N, -90°55'52" W

Appendix A

The following table lists the total number of pages for each of the Analytical Datasheets for this report. Each document is contained in the PDF portfolio.

R4LIMS ID	Lab ID	Analysis	Total Pages
21-0362	E213907-01	TSS	7
21-0362	E213907-01	Ammonia as N	7
21-0362	E213907-01	BOD ₅	7

End of Report



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

October 1, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 21-0362, Gunnison POTW

FROM: Laura Ackerman
LSB Inorganic Chemistry Section Chief

THRU: John Deatrck, Chief
Laboratory Services Branch

TO: Christopher McHugh

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:

Method Used:

Accreditations:

Classical/Nutrient Analyses (CNA)

Solids

USGS I-3765-85 (Water)

ISO



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980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

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980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

SAMPLES INCLUDED IN THIS REPORT

Project: 21-0362, Gunnison POTW

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
21-0362-0001	E213907-01	Wastewater	9/21/21 10:40	9/23/21 7:45



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980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

DATA QUALIFIER DEFINITIONS

None

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories.

Refer to the certificate and scope of accreditation FT-0330 at:

<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

NR Not accredited for this test.

DW Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005.

Refer to the certificate and scope of accreditation AT-2628 at:

<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

ISO/DW Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Classical/Nutrient Analyses

Project: 21-0362, Gunnison POTW

Sample ID: 21-0362-0001

Lab ID: E213907-01

Station ID: EFF001

Matrix: Wastewater

Date Collected: 9/21/21 10:40

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
E1642818	Total Suspended Solids	1400		mg/L	5.0	9/23/21 10:00	9/23/21 10:00	USGS I-3765-85



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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Classical/Nutrient Analyses (CNA) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2109047 - C 2540 Solids										
Blank (2109047-BLK1)				Prepared & Analyzed: 09/23/21						
USGS I-3765-85										
Total Suspended Solids	U	5.0	mg/L							U
LCS (2109047-BS1)				Prepared & Analyzed: 09/23/21						
USGS I-3765-85										
Total Suspended Solids	99.100	5.0	mg/L	100.00		99.1	77.1-110			
LCS Dup (2109047-BSD1)				Prepared & Analyzed: 09/23/21						
USGS I-3765-85										
Total Suspended Solids	96.900	5.0	mg/L	100.00		96.9	77.1-110	2.24	10	
Duplicate (2109047-DUP1)				Source: E213906-01		Prepared & Analyzed: 09/23/21				
USGS I-3765-85										
Total Suspended Solids	28.800	5.0	mg/L		26.900			6.82	10	
MRL Verification (2109047-PS1)				Prepared & Analyzed: 09/23/21						
USGS I-3765-85										
Total Suspended Solids	3.5000	5.0	mg/L	5.0000		70.0	57.1-130			MRL-2,



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Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

MRL-2 MRL verification for Non-Potable Water matrix



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Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

October 1, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 21-0362, Gunnison POTW

FROM: Laura Ackerman
LSB Inorganic Chemistry Section Chief

THRU: John Deatrck, Chief
Laboratory Services Branch

TO: Christopher McHugh

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:

Method Used:

Accreditations:

Classical/Nutrient Analyses (CNA)

Demand

SM 5210B (Water)

ISO



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

SAMPLES INCLUDED IN THIS REPORT

Project: 21-0362, Gunnison POTW

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
21-0362-0001	E213907-01	Wastewater	9/21/21 10:40	9/23/21 7:45



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

DATA QUALIFIER DEFINITIONS

A The analyte was analyzed in replicate. Reported value is an average value of the replicates.

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

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NR Not accredited for this test.

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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Classical/Nutrient Analyses

Project: 21-0362, Gunnison POTW

Sample ID: 21-0362-0001

Lab ID: E213907-01

Station ID: EFF001

Matrix: Wastewater

Date Collected: 9/21/21 10:40

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
E1640606	BOD, 5 Day	89	A	mg/L	2.0	9/23/21 9:46	9/28/21 10:45	SM 5210B



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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Classical/Nutrient Analyses (CNA) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2109048 - C SM5210 BOD

Blank (2109048-BLK1)

Prepared: 09/23/21 Analyzed: 09/28/21

SM 5210B

BOD, 5 Day	U	2.0	mg/L							U
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LCS (2109048-BS1)

Prepared: 09/23/21 Analyzed: 09/28/21

SM 5210B

BOD, 5 Day	173.00	2.0	mg/L	198.00		87.4	84.6-115.4			A
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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Notes and Definitions for QC Samples

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October 12, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 21-0362, Gunnison POTW

FROM: Laura Ackerman
LSB Inorganic Chemistry Section Chief

THRU: John Deatrck, Chief
Laboratory Services Branch

TO: Christopher McHugh

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Analyses Included in this report:

Method Used:

Accreditations:

Classical/Nutrient Analyses (CNA)

Ammonia as N

EPA 350.1 (Water)

ISO



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SAMPLES INCLUDED IN THIS REPORT

Project: 21-0362, Gunnison POTW

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
21-0362-0001	E213907-01	Wastewater	9/21/21 10:40	9/23/21 7:45



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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

DATA QUALIFIER DEFINITIONS

None

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

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D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Classical/Nutrient Analyses

Project: 21-0362, Gunnison POTW

Sample ID: 21-0362-0001

Lab ID: E213907-01

Station ID: EFF001

Matrix: Wastewater

Date Collected: 9/21/21 10:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7664-41-7	Ammonia as N	1.6		mg/L	0.050	9/28/21 16:28	9/30/21 12:44	EPA 350.1



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Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Classical/Nutrient Analyses (CNA) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2109051 - C 350.1 Ammonia										
Blank (2109051-BLK1)					Prepared: 09/28/21 Analyzed: 09/30/21					
EPA 350.1										
Ammonia as N	U	0.050	mg/L							U
LCS (2109051-BS1)					Prepared: 09/28/21 Analyzed: 09/30/21					
EPA 350.1										
Ammonia as N	0.98400	0.050	mg/L	1.0000		98.4	90-110			
Matrix Spike (2109051-MS1)					Source: E213907-01 Prepared: 09/28/21 Analyzed: 09/30/21					
EPA 350.1										
Ammonia as N	2.6370	0.050	mg/L	1.0000	1.6490	98.8	90-110			
Matrix Spike Dup (2109051-MSD1)					Source: E213907-01 Prepared: 09/28/21 Analyzed: 09/30/21					
EPA 350.1										
Ammonia as N	2.6280	0.050	mg/L	1.0000	1.6490	97.9	90-110	0.342	10	
MRL Verification (2109051-PS1)					Prepared: 09/28/21 Analyzed: 09/30/21					
EPA 350.1										
Ammonia as N	0.035000	0.050	mg/L	0.050000		70.0	70-130			MRL-2, U



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0362

Project: 21-0362, Gunnison POTW - Reported by Laura Ackerman

Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

MRL-2 MRL verification for Non-Potable Water matrix