

Appendix D

Maier Sampling Inspection Report, June 27, 2023



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region8

Ref: 8ENF-W-NW

SENT VIA EMAIL
DIGITAL READ RECEIPT REQUESTED

Patrick Maher
Owner
Maher Cattle, LLC
patrick_maher20@hotmail.com

Re: CAFO Compliance Sampling Inspection, Maher Cattle, LLC, Timber Lake,
South Dakota, NPDES ID# SDU000001

Dear Mr. Maher:

The U.S. Environmental Protection Agency (EPA) conducted a Compliance Sampling Inspection (CSI) at Maher Cattle, LLC, located at 13031 248th Avenue, Timber Lake, South Dakota on June 27, 2023. The objective of the CSI was to gather data upstream, at the discharge point of the facility, and downstream to determine what, if any, impacts the facility has on High Bank Creek. The purpose of the CSI was also to evaluate compliance with the requirements of the CAFO regulations under 40 CFR Part 122.23.

The enclosed CSI report contains the sampling procedure, analytical results, observations, and findings from the sampling conducted on June 27, 2023. If you have any questions, please contact Stephanie Meyers at (303) 312-6938 or meyers.stephanie@epa.gov.

Sincerely,
Meyers,
Stephanie

Digitally signed by Meyers,
Stephanie
Date: 2023.08.29 10:39:58
-06'00'

Stephanie Meyers
NPDES and Wetlands Enforcement Section
Enforcement and Compliance Assurance Division

Enclosures:

1. Maher Cattle CSI Report
2. Maher Cattle CSI Photo Log
3. MVTL Analytical Report

cc: Adam Rookey, Environmental Director, Standing Rock Sioux Tribe

NPDES CAFO Compliance Sampling Inspection (CSI) Report

CAFO Identification Number: SDU000001

Facility Name and Address: Maher Cattle, LLC
13031 248th Avenue
Timber Lake, SD 57656

Applicable CAFO Regulations: 40 CFR Part 122.23 (Concentrated animal feeding operations)

CSI date: June 27, 2023

Report Review		
Drafter Name	Address/Phone Number	Date
Stephanie Meyers	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	8/23/2023
	303-312-6938	
Reviewer Name	Address/Phone Number	Date
Emilio Llamozas	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	8/28/2023
	303-312-6407	
Supervisor Signature/Name	Address/Phone Number	Date
Emilio Llamozas	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	8/28/2023
	303-312-6407	

Section 1.0 – Inspection Narrative

On June 27, 2023, a Concentrated Animal Feeding Operation (CAFO) Compliance Sampling Inspection (CSI) was conducted at Maher Cattle, LLC (facility) in Timber Lake, South Dakota. The objective of the CSI was to gather data upstream, at the discharge point of the facility, and downstream to determine what, if any, impacts the facility has on High Bank Creek. The purpose of the CSI was also to evaluate compliance with the requirements of the CAFO regulations under 40 CFR Part 122.23.

At approximately 6:10 am, inspectors arrived on site and presented credentials to Mr. Maher. The inspectors held an opening conference with Mr. Maher where they explained the purpose of the sampling inspection. Inspectors then proceeded to conduct sampling at seven locations on site (3 upstream, 1 at the discharge point, and 3 downstream). Details on the facility and sampling procedures are described below.

At approximately 9:40 am, inspectors held a closing conference with Mr. Maher to discuss the due date for the Section 308 information request and offered to answer any questions.

Section 2.0 – Participants

EPA:

- Stephanie Meyers, NPDES Inspector
- Emilio Llamozas, NPDES Inspector

Mahe Cattle, LLC:

- Patrick Maher, Owner

Section 3.0 – Facility Description

The Maher Cattle, LLC feedlot was constructed in August 2019 and the facility has been in operation since January 2020. Cattle are confined to open lots within the feedlot holding pens and also graze in surrounding fields, where they have direct access to High Bank Creek from all of the fields used for grazing. Cattle at the feedlot come from the yearling operation, the cow/calf operation, and are also purchased from a sales barn. A facility representative indicated that around 600-700 cow/calf pairs are confined to pens approximately 2 miles southwest of the feedlot for around 15-100 days prior to going to fields for grazing. Yearlings are also confined to the yearling pens located just west of 248th Avenue across from the feedlot holding pens, and these cattle are either purchased at a sales barn or come from the cow/calf pair operation. High Bank Creek flows through the northernmost yearling pen, and runoff flows downhill from the southern pens (photo 67). At the time of the inspection, the facility had 5,934 head of cattle on site. Facility representatives indicated that the maximum capacity of the facility is 12,000 head of cattle.

The production area is approximately 91.4 acres, and over 6,000 acres of cropland is available for land application of manure solids and 76 acres is available for application of liquid waste.

The holding ponds have a capacity of 49 acre-feet to the top and approximately 33.9 acre-feet of capacity to the freeboard.

Just east of 248th Avenue, there are four rows of feedlot pens, each row containing between six and nine pens which drain via gravity flow to the north to settling basins that are along the northern end of each row of pens. Wastewater in settling basin 3 drains to the east to settling basin 4, settling basin 4 drains to settling basin 5, and settling basin 5 drains to holding pond 2. Settling basin 6 drains directly to holding pond 2 via gravity flow. Settling basins 1 and 2 receive manure and wastewater via gravity flow from a separate set of pens to the west of the main holding pens, which drain to the east. Settling basins 1 and 2 drain the holding pond 1. Facility representatives stated the holding ponds do not discharge to High Bank Creek, and that manure is removed from the settling basins for land application via box spreaders.

Also on site is a concrete feed pad, where various types of feed are stored. At the time of the sampling inspection, large hay bales were stored in close proximity to High Bank Creek uncovered (photo 75). Mortality management also occurs on site, where deceased cattle are composted using manure and the manure is land applied once the composting process is completed. There were no mortalities at the time of the sampling inspection.

3.1 Applicable CAFO Regulations

The CAFO regulations found at 40 C.F.R. Part 122.23 impose requirements on facilities that fall under the definition of an animal feeding operation (AFO) and meet the criteria for a CAFO.

40 C.F.R. Part 122.23 states, “AFO means a lot or facility (other than aquatic animal production facility) where the following conditions are met:

- i. Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
- ii. Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.”

40 C.F.R. Part 122.23 also states, “CAFO means an AFO that is defined as a Large CAFO or as a Medium CAFO by the terms of this paragraph, or that is designated as a CAFO in accordance with paragraph (c) of this section. Two or more AFOs under common ownership are considered to be a single AFO for the purposes of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes.”

The large CAFO threshold for cattle is 1,000 cattle; therefore, Maher Cattle, LLC is a large CAFO by definition.

Applicable permitting and NPDES requirements are listed in 40 C.F.R. Part 122.23 as well.

40 C.F.R. Part 412.31 states, “(a) Except as provided in paragraphs (a)(1) through (a)(2) of this section, there must be no discharge of manure, litter, or process wastewater pollutants into waters of the U.S. from the production area.

- (1) Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided:

- (i) The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event;
- (ii) The production area is operated in accordance with the additional measures and records required by § 412.37(a) and (b).”

Section 4.0 – EPA Sampling Objectives

The objective of the sampling was to evaluate the impact of process wastewater discharged by Maher Cattle, LLC into High Bank Creek.

4.1 Sampling Locations

Table 1 – High Bank Creek Sampling Locations

Site ID	Name	Latitude	Longitude	Description
UP1	Upstream 1	45.49425	-101.19785	High Bank Creek upstream of Maher Cattle and cow calf holding pens
UP2	Upstream 2	45.50381	-101.19163	High Bank Creek upstream of Maher Cattle, but downstream of cow calf holding pens
UP3	Upstream 3	45.50399	-101.17428	High Bank Creek upstream of Maher Cattle, but downstream of cow calf holding pens
DP	Discharge Point	45.50846	-101.16197	Discharge point from the yearling pens into High Bank Creek
DP2	Discharge Point Duplicate	45.50846	-101.16197	Discharge point from the yearling pens into High Bank Creek
DS1	Downstream 1	45.50782	-101.15308	High Bank Creek downstream of Maher Cattle discharge point
DS2	Downstream 2	45.50937	-101.14108	High Bank Creek downstream of Maher Cattle discharge point
DS3	Downstream 3	45.51625	-101.13033	High Bank Creek downstream of Maher Cattle discharge point

4.2 Sampling Procedures

EPA collected grab samples in High Bank Creek using 1-gallon cubitainers as subsamplers and filled four separate sample bottles provided by the laboratory for the parameters listed in Table 2. Observations, grab sample times, and photo descriptions were collected in a field notebook maintained for the CSI and are include below Table 2.

Table 2 – Sampling Parameters

Parameter	Method	Container
Kjeldahl Nitrogen, total	PAI-DK01	1L polyethylene
Nitrate – Nitrite Nitrogen	EPA 353.2	
Ammonia Nitrogen	EPA 350.1	
Phosphorous, total	EPA 365.1	
Nitrite – Nitrogen	EPA 353.2	125mL polyethylene
Biochemical Oxygen Demand	SM5210B-2016	1L polyethylene
Total Suspended Solids	USGS I-3765-85	
E. Coli	SM9223B-16 (23 rd Ed)	120mL polypropylene

The following grab samples were gathered on June 27, 2023:

- Upstream 1 – sampled at 6:40 AM by Stephanie Meyers
- Upstream 2 – sampled at 7:03 AM by Stephanie Meyers
- Upstream 3 – sampled at 7:32 AM by Emilio Llamozas
- Discharge Point – sampled at 8:20 AM by Emilio Llamozas
- Discharge Point Duplicate – sampled at 8:22 AM by Emilio Llamozas
- Downstream 1 – sampled at 7:59 AM by Emilio Llamozas
- Downstream 2 – sampled at 8:55 AM by Emilio Llamozas
- Downstream 3 – sampled at 9:14 AM by Emilio Llamozas

Section 5.0 – QA/QC and Data Assessment/Validation

In addition to the sampling event, one QA/QC sample was taken as a duplicate at the discharge point to ensure sampling quality and consistency.

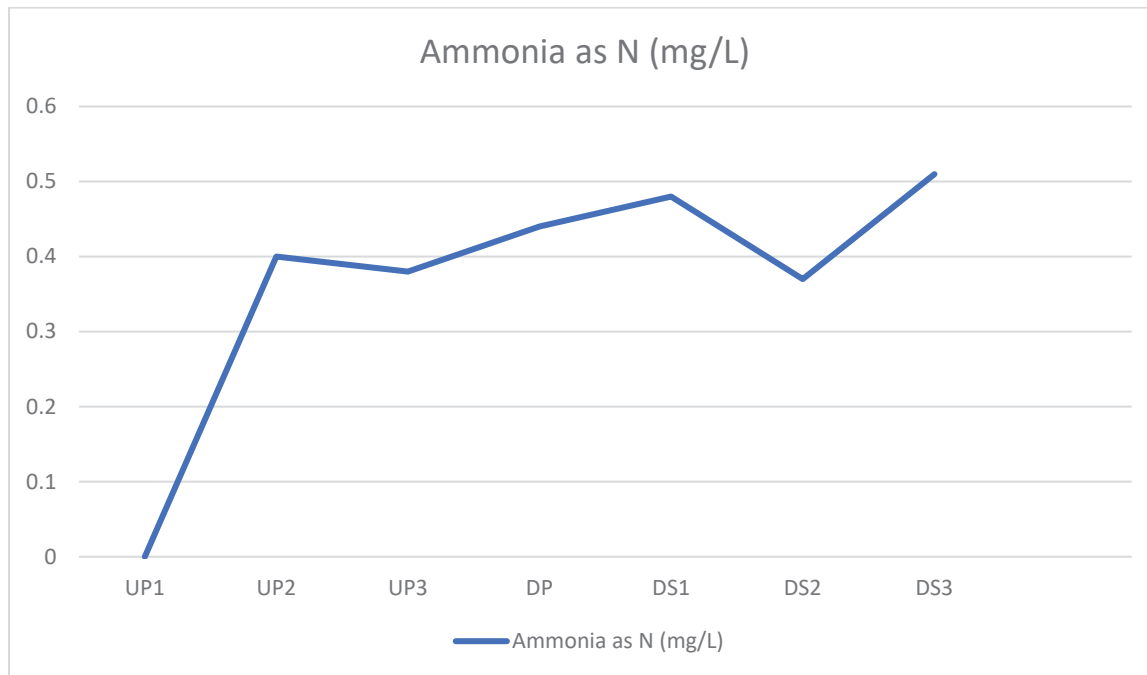
Upon receipt of the analytical data reports, a data validation process was completed to ensure the analytical results met the project objectives and the requirements identified in the Maher Cattle, LLC Sampling and Analysis Plan (SAP). The data validation process included review of all analytical data, any applicable laboratory qualifications, notes from the laboratory chemists, notes from the field sampling staff, and a comparison of the duplicate samples.

Section 6.0 – Analytical Results

The analytical results for each of the parameters listed above in Table 2 from the sampling event conducted by EPA on June 27, 2023 are discussed below. Results are comprehensive of the sampling event and general trends are identified when possible. EPA Water Quality Standards (WQS) Criteria are provided as context for reported concentrations that EPA has developed criteria for.

Ammonia as N

Ammonia Nitrogen was reported below the detection limit of 0.2 mg/L at the Upstream 1 sample point. Concentrations from the Upstream 2 sampling point to the Downstream 3 sampling were all elevated. WQS Criteria for Ammonia Nitrogen are pH and temperature dependent, and pH and temperature were not measured in the field; therefore, the results below are not compared against the WQS Criteria.



Nitrite as N

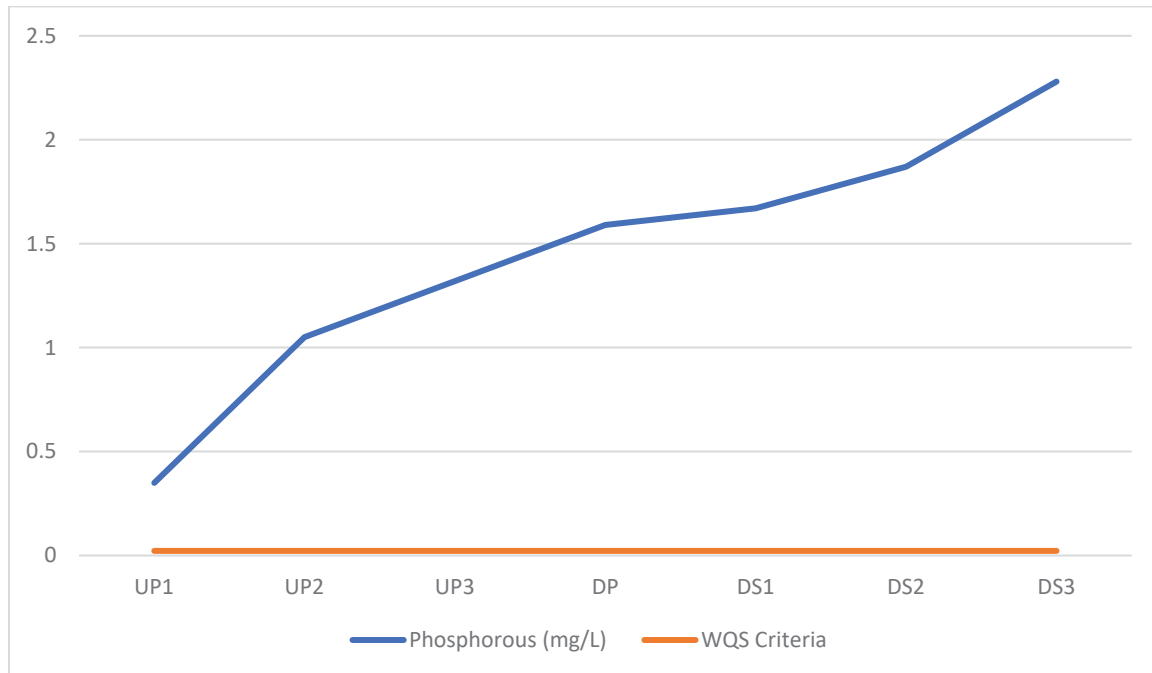
Nitrite as N was below the detection limit of <0.2 mg/L for each of the sampling locations.

Nitrate + Nitrite as N

Nitrate + Nitrite as N was below the detection limit of <0.2 mg/L for each of the sampling locations.

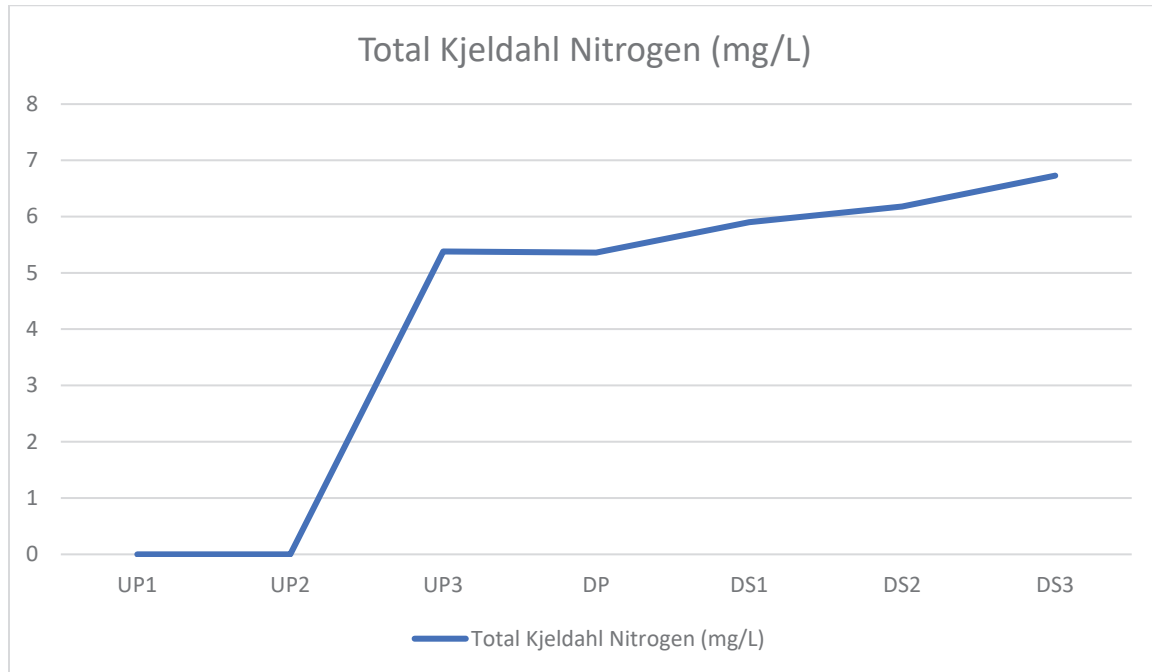
Phosphorous

Phosphorous concentrations show an increasing trend from the Upstream 1 sampling point to the Downstream 3 sampling point. The EPA developed nutrient criteria for rivers and streams in ecoregions across the country. Maher Cattle, LLC falls within ecoregion IV: great plains grass and shrublands. Based on the 25th percentile for ecoregion IV, EPA's recommended WQS Criteria for phosphorous is .023 mg/L. Each sample location exceeded EPA's WQS Criteria recommendation for phosphorous.



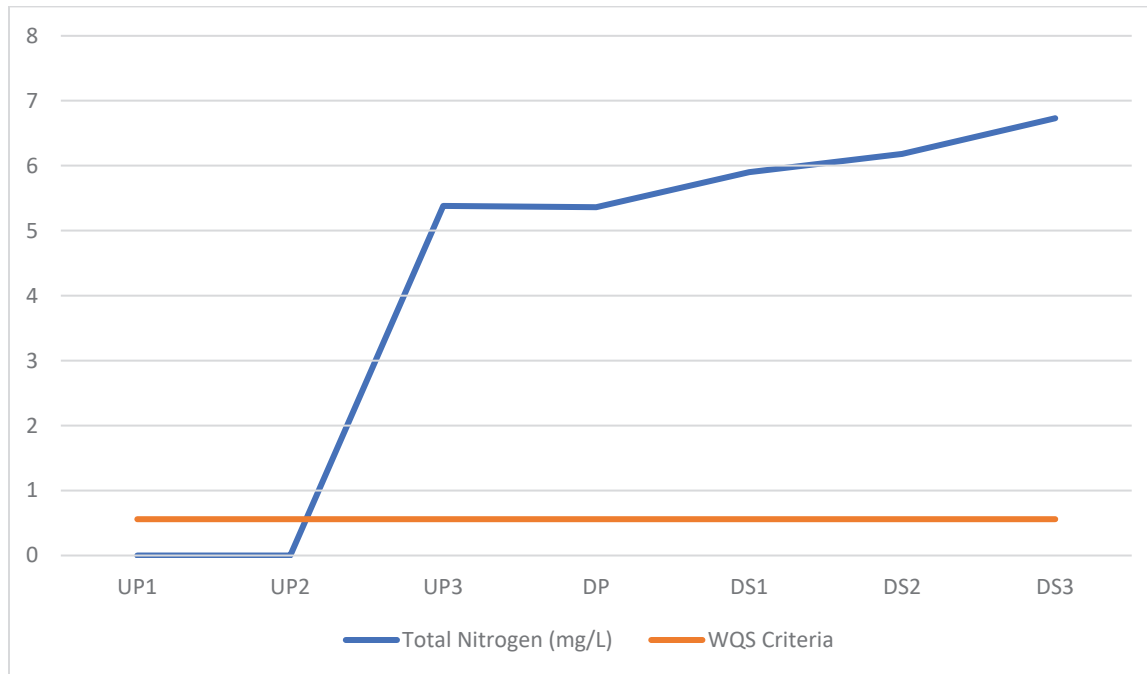
Total Kjeldahl Nitrogen

Total Kjeldahl Nitrogen was reported below the detection limit of 5 mg/L at the Upstream 1 and Upstream 2 sample points. Concentrations from the Upstream 3 sampling point to the Downstream 3 sampling were all elevated and show an increasing trend.



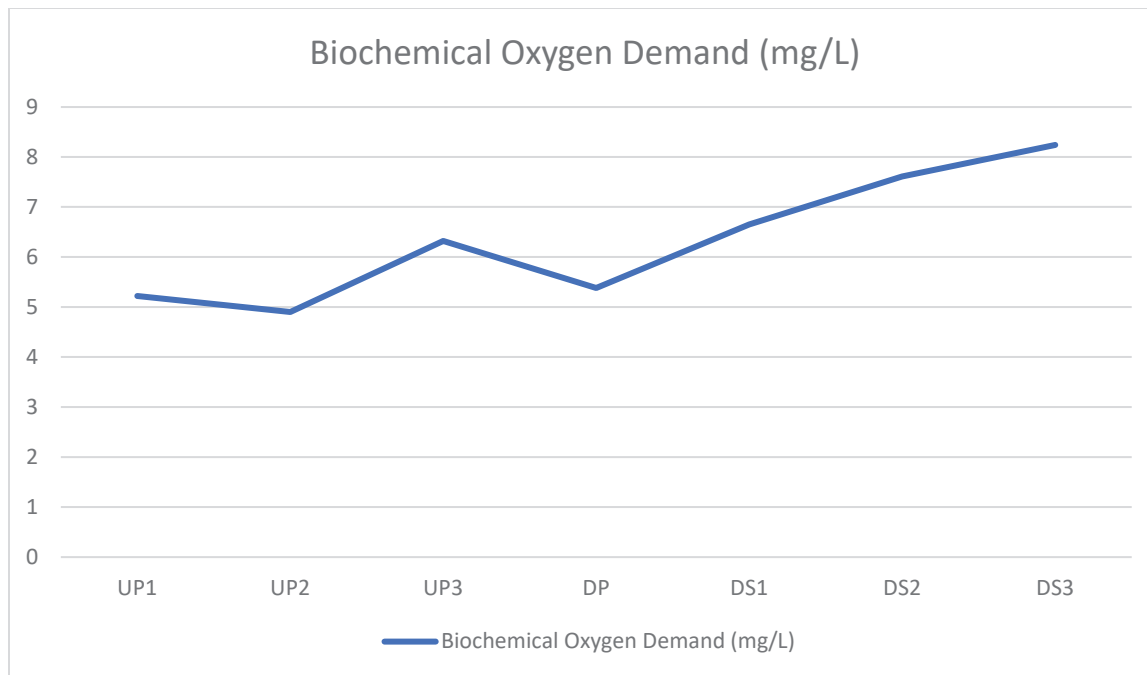
Total Nitrogen

Total Nitrogen is the sum of Total Kjeldahl Nitrogen and Nitrate + Nitrite as Nitrogen, which is shown in the graph below for each sampling location. Due to the Nitrate + Nitrite as Nitrogen values being below the detection limit, the values for Total Nitrogen are the same as the values for Total Kjeldahl Nitrogen. EPA's nutrient criteria for Total Nitrogen based on the 25th percentile is 0.56 mg/L. Concentrations from the Upstream 3 sampling point to the Downstream 3 sampling point all exceeded EPA's nutrient criteria for Total Nitrogen.



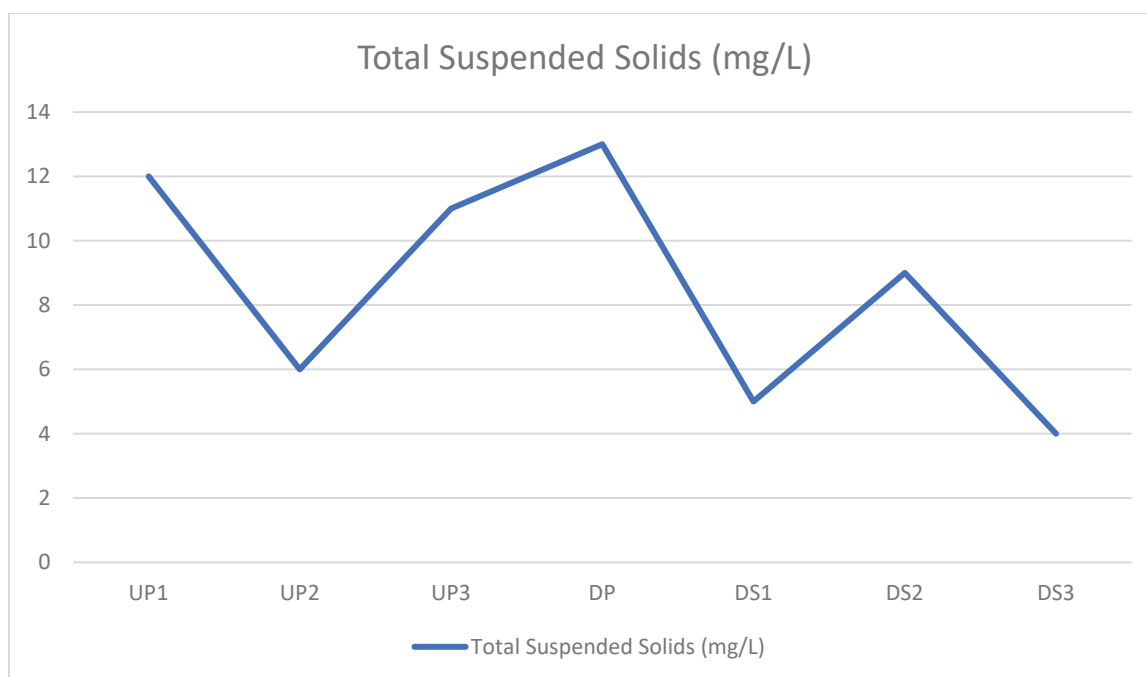
Biochemical Oxygen Demand

The Biochemical Oxygen Demand concentration was lowest at the Upstream 2 sampling location, increased at the Upstream 3 sampling location, decreased slightly at the Discharge Point, and then increased for all Downstream sampling locations.



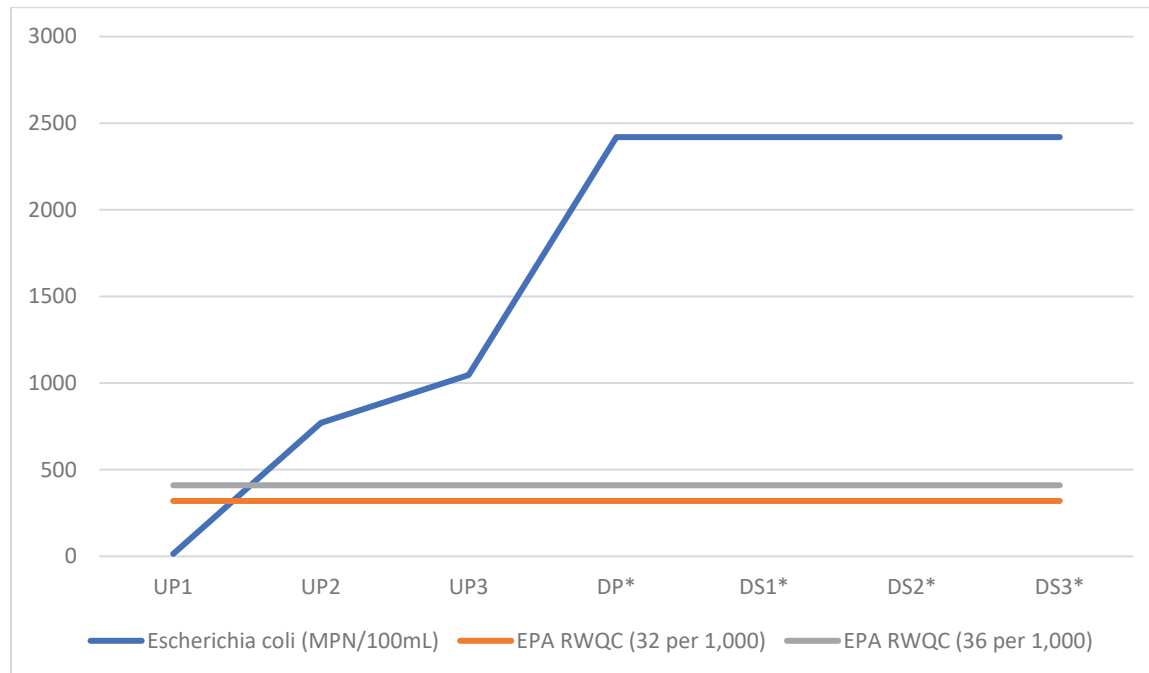
Total Suspended Solids

The Total Suspended Solids concentrations varied across all sampling locations.



Escherichia coli

Escherichia coli (E. coli) concentrations show an increasing trend from the Upstream 1 sampling point to the Downstream 3 sampling point. The sampling locations from the Discharge Point to Upstream 3 sampling point all exceeded the high-end detection limit of 2419.6 MPN/100mL. EPA's Recreational Water Quality Criteria (RWQC) for E. coli based on the 90th percentile for an estimated illness rate of 36 per 1,000 is 410 MPN/100mL and for an estimated illness rate of 32 per 1,000 the RWQC based on the 90th percentile is 320 MPN/100mL. Each sample location except for the Upstream 1 sampling location exceeded EPA's water quality criteria for E. coli.



Section 7.0 – Observations, Findings, and Corrective Actions

Based on the sample results, a general increasing trend was observed for Ammonia as Nitrogen, Phosphorous, Total Kjeldahl Nitrogen, Biochemical Oxygen Demand, and E. coli. EPA's WQS Criteria was exceeded for Phosphorous, Total Nitrogen, and E. coli. These trends and WQS exceedances demonstrate Maher Cattle, LLC is contributing pollutants to High Bank Creek.

Due to the impact on High Bank Creek, EPA requires all process wastewater discharges from Maher Cattle, LLC to High Bank Creek to cease and the facility must submit an NPDES permit application to the EPA.



Photographs for Maher Cattle, LLC Compliance Sampling Inspection

Inspection Type: Concentrated Animal Feeding Operation

Photo number 61 taken by Emilio Llamozas on 6/27/2023.

Description:

Overview of the upstream 1 sampling location



Photo number 62 taken by Emilio Llamozas on 6/27/2023.

The direction of the photo is West.

Description:

Overview of the upstream 2 sampling location





Photographs for Maher Cattle, LLC Compliance Sampling Inspection

Inspection Type: Concentrated Animal Feeding Operation

Photo number 63 taken by Stephanie Meyers on 6/27/2023.

The direction of the photo is West.

Description:

Overview of the upstream 3 sampling location



Photo number 65 taken by Stephanie Meyers on 6/27/2023.

The direction of the photo is East.

Description:

Overview of the downstream 1 sampling location





Photographs for Maher Cattle, LLC Compliance Sampling Inspection

Inspection Type: Concentrated Animal Feeding Operation

Photo number 66 taken by Stephanie Meyers on 6/27/2023.

Description:

Algae growth downstream of the downstream 1 sampling location



Photo number 67 taken by Stephanie Meyers on 6/27/2023.

Description:

Overview of High Bank Creek flowing through the yearling pens





Photographs for Maher Cattle, LLC Compliance Sampling Inspection

Inspection Type: Concentrated Animal Feeding Operation

Photo number 69 taken by Stephanie Meyers on 6/27/2023.

The direction of the photo is East.

Description:

Overview of the discharge point sampling location



Photo number 70 taken by Stephanie Meyers on 6/27/2023.

Description:

Algae growth upstream of the downstream 2 sampling location





Photographs for Maher Cattle, LLC Compliance Sampling Inspection

Inspection Type: Concentrated Animal Feeding Operation

Photo number 72 taken by Stephanie Meyers on 6/27/2023.

The direction of the photo is Southeast.

Description:

Overview of the downstream 2 sampling location



Photo number 74 taken by Stephanie Meyers on 6/27/2023.

The direction of the photo is North.

Description:

Overview of the downstream 3 sampling location





Photographs for Maher Cattle, LLC Compliance Sampling Inspection

Inspection Type: Concentrated Animal Feeding Operation

Photo number 75 taken by Stephanie Meyers on 6/27/2023.

The direction of the photo is Northeast.

Description:

Overview of hay bales stored along High Bank Creek east of the feed pad





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www.MVTL.com



Account #: 78840

Client: US EPA Region 8

Workorder: SDU000001 (19360)

Stephanie Meyers
US EPA Region 8
1595 Wynkoop St
Denver, CO 80202

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

C. Carroll

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:

MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:

MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Report Date: Wednesday, July 12, 2023 1:16:09 PM

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**Account #:** 78840**Client:** US EPA Region 8**Workorder Summary****Workorder Comments**

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

Analysis Results Comments**19360002 (UP2)**

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.(Nitrate + Nitrite as N)

19360004 (DP)

Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory fortified blank recovery was acceptable.(Ammonia as N)

19360008 (DS3)

Sample/sample duplicate relative percent difference exceeded the laboratory acceptance limit. Absolute difference of sample/sample duplicate was within the laboratory acceptance limit.(Total Suspended Solids)

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360001
Sample ID: UP1

Date Collected: 06/27/2023 06:40
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	<0.2	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:05	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:26	06/28/2023 16:26	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:27	06/29/2023 10:27	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	0.35	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 07:58	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	<5.0	mg/L	5.0	1	07/07/2023 12:55	07/10/2023 15:34	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	5.22	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	12	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	14.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360002
Sample ID: UP2

Date Collected: 06/27/2023 07:03
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.40	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:06	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:27	06/28/2023 16:27	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:29	06/29/2023 10:29	EJV	*

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	1.05	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 07:59	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	<5.0	mg/L	5.0	1	07/07/2023 12:55	07/10/2023 15:34	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	4.90	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	6	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	770.1	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360003
Sample ID: UP3

Date Collected: 06/27/2023 07:32
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.38	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:07	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:28	06/28/2023 16:28	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:39	06/29/2023 10:39	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	1.32	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 08:00	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	5.38	mg/L	5.0	1	07/07/2023 12:55	07/10/2023 15:34	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	6.32	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	11	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	1046.2	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360004
Sample ID: DP

Date Collected: 06/27/2023 08:20
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.44	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:08	AMC	*

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:29	06/28/2023 16:29	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:40	06/29/2023 10:40	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	1.59	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 08:01	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	5.36	mg/L	5.0	1	07/07/2023 12:55	07/10/2023 15:34	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	5.38	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	13	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360005
Sample ID: DP2

Date Collected: 06/27/2023 08:22
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.42	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:15	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:31	06/28/2023 16:31	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:41	06/29/2023 10:41	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	1.51	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 08:02	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	5.43	mg/L	5.0	1	07/07/2023 12:55	07/10/2023 15:34	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	5.78	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	11	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360006
Sample ID: DS1

Date Collected: 06/27/2023 07:59
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.48	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:16	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:32	06/28/2023 16:32	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:42	06/29/2023 10:42	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	1.67	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 08:03	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	5.90	mg/L	5.0	1	07/07/2023 12:55	07/10/2023 15:34	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	6.65	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	5	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360007
Sample ID: DS2

Date Collected: 06/27/2023 08:55
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.37	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:17	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:33	06/28/2023 16:33	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:43	06/29/2023 10:43	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	1.87	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 08:04	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	6.18	mg/L	5.0	1	07/10/2023 12:14	07/10/2023 13:00	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	7.61	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	9	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8**Analytical Results**

Lab ID: 19360008
Sample ID: DS3

Date Collected: 06/27/2023 09:14
Date Received: 06/27/2023 13:25

Matrix: Wastewater
Collector: Client

Temp @ Receipt (C): 2.7

Received on Ice: Yes

Inorganic Chemistry**Method: EPA 350.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Ammonia as N	0.51	mg/L	0.2	1	06/30/2023 08:10	06/30/2023 11:18	AMC	

Method: EPA 353.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Nitrite as N	<0.2	mg/L	0.2	1	06/28/2023 16:34	06/28/2023 16:34	AMC	
Nitrate + Nitrite as N	<0.2	mg/L	0.2	1	06/29/2023 10:44	06/29/2023 10:44	EJV	

Method: EPA 365.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Phosphorus as P	2.28	mg/L	0.1	1	06/29/2023 17:08	06/30/2023 08:50	EJV	

Method: PAI-DK01

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Kjeldahl Nitrogen	6.73	mg/L	5.0	1	07/10/2023 12:14	07/10/2023 13:00	BLJ	

Method: SM5210B-2016

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Biochemical Oxygen Demand	8.24	mg/L	2	1	06/28/2023 08:15	06/28/2023 08:15	BLJ	

Method: USGS I-3765-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Suspended Solids	4	mg/L	2	1	06/27/2023 16:00	06/27/2023 16:00	RAA	*

Microbiology**Method: SM 9223B-16 (23rd Ed)**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Coliforms	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	
Escherichia coli	>2419.6	MPN/100 mL	1	1	06/27/2023 14:35	06/27/2023 14:35	BLJ	

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**Account #:** 78840**Client:** US EPA Region 8

QC Results Summary							WO #: 19360		
Ammonia as N			Units:		mg/L				
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			2	98.0		90	110		
LFB			2	90.0		90	110		
LFB			2	94.5		90	110		
LFB			2	98.0		90	110		
LFB			2	93.5		90	110		
MB		<0.2							
MB		<0.2							
MS/MSD	19360004		2	114.0	114.0	90	110	0.4	20
MS/MSD	19503001		2	109.0	110.0	90	110	0.5	20
MS/MSD	19627001		2	118.0	119.0	90	110	0.4	20
MS/MSD	19661001		20	104.0	106.0	90	110	0.3	20
Nitrate + Nitrite as N			Units:		mg/L				
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
LFB			0.5	100.0		90	110		
MS/MSD	19106003		1	101.0	101.0	90	110	0.0	20
MS/MSD	19177010		1	100.0	101.0	90	110	1.0	20
MS/MSD	19177022		50	114.0	116.0	90	110	0.6	20
MS/MSD	19260008		1	97.0	97.0	90	110	0.0	20
MS/MSD	19360002		1	73.0	73.0	90	110	0.0	20
MS/MSD	19360008		1	73.0	72.0	90	110	1.4	20
MS/MSD	19621001		1	94.0	94.0	90	110	0.0	20

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**Account #:** 78840**Client:** US EPA Region 8

Nitrite as N			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.4	95.0		90	110		
MS/MSD	19360008		1	105.0	105.0	90	110	0.0	20
Phosphorus as P			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.5	98.0		90	110		
LFB			0.5	108.0		90	110		
MB		<0.1							
MB		<0.1							
MS/MSD	19360007		1	101.0	109.0	90	110	2.7	20
MS/MSD	19572001		1	96.0	102.0	90	110	1.4	20
MS/MSD	19657003		5	105.0	105.0	90	110	0.0	20
Total Kjeldahl Nitrogen			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			28.4	104.0		90	110		
CRM			28.4	104.0		90	110		
LFB			10	97.2		80	120		
LFB			10	97.2		80	120		
MB		<5.0							
MB		<5.0							
MS/MSD	19360003		10	100.0	80.4	80	120	13.9	20
MS/MSD	19572001		10	102.0	90.8	80	120	3.9	20
Total Suspended Solids			Units: mg/L						
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			50	100.0		77.2	109.2		
CRM			50	101.6		77.2	109.2		
MB		<2							
MB		<2							
DUP	18565001							11.8	20
DUP	19360004							8.0	20
DUP	19360008							28.6	20

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**Account #:** 78840

Client: US EPA Region 8

US ENVIRONMENTAL PROTECTION AGENCY				USEPA Region 8 WO: 19360		Region 8 Laboratory 16194 W. 45th Drive Golden, CO 80403 Fax: 303-312-7800	
PROJECT NAME: SDU000001				LSR #:			
SAMPLER(S): Name: Stephanie Meyers Signature: [Signature] Date: 6/27/23							
Name: Emilio Llamozas Signature: [Signature] Date: 6/27/23							
MATRIX				PRESERVATIVE		NUMBER OF CONTAINERS	
				TN/nitrite ammonia phosphorus nitrate BOD TSS E. coli			
STATION ID.	STATION DESCRIPTION & NOTES	DATE	TIME	W/W	C/L	BOTTLE ID.	LAB ID.
VP1	SDU000001 - 06272023 - VP1	6/27/23	6:40am	WN	3,6	X	001
VP1	SDU000001 - 06272023 - VP1	6/27/23	6:40am	WN	6		
VP1	SDU000001 - 06272023 - VP1	6/27/23	6:40am	WN	6		
VP1	SDU000001 - 06272023 - VP1	6/27/23	6:40am	WN	5,6		
VP2	SDU000001 - 06272023 - VP2	6/27/23	7:03am	WN	3,6	X X	002
VP2	SDU000001 - 06272023 - VP2	6/27/23	7:03am	WN	6		
VP2	SDU000001 - 06272023 - VP2	6/27/23	7:03am	WN	6		
VP2	SDU000001 - 06272023 - VP2	6/27/23	7:03am	WN	5,6		
VP3	SDU000001 - 06272023 - VP3	6/27/23	7:32am	WN	3,6	X X	003
VP3	SDU000001 - 06272023 - VP3	6/27/23	7:32am	WN	6		
VP3	SDU000001 - 06272023 - VP3	6/27/23	7:32am	WN	6		
VP3	SDU000001 - 06272023 - VP3	6/27/23	7:32am	WN	5,6		
DP	SDU000001 - 06272023 - DP	6/27/23	8:20am	WN	3,6	X X	004
DP	SDU000001 - 06272023 - DP	6/27/23	8:20am	WN	6		
DP	SDU000001 - 06272023 - DP	6/27/23	8:20am	WN	6		
DP	SDU000001 - 06272023 - DP	6/27/23	8:20am	WN	5,6		
DP2	SDU000001 - 06272023 - DP2	6/27/23	8:22am	WN	3,6	X X	005
DP2	SDU000001 - 06272023 - DP2	6/27/23	8:22am	WN	6		
DP2	SDU000001 - 06272023 - DP2	6/27/23	8:22am	WN	6		
DP2	SDU000001 - 06272023 - DP2	6/27/23	8:22am	WN	5,6		
1-Requisitioned By: [Signature] Date/Time: 6/27/23 1:25pm 1-Received By: Heather Horst Date/Time: 27 Jun 23 1335				2-Requisitioned By: 2-Received By:		3-Requisitioned By: 3-Received By:	
PRESERVATIVES 1- HNO ₃ 2-H ₂ PO ₄ 3- H ₂ SO ₄ 4-HCl 5- Na ₂ S ₂ O ₃ 6- Ice 7-Dry Ice 8-NaOH 9-Other _____				MATRIX W- Water S- Soil Sed- Sediment Bio- Bio Tissue O- Other _____		Shaded Areas = Lab use only Cooler Temperature = 27C Page ____ of ____	

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Report Date: Wednesday, July 12, 2023 1:16:09 PM

