NPDES Inspection Report – Water Treatment Plant

National Database Information	
Inspection Date: June 30, 2021	**Inspection Type:** CEI – Minor
Entry / Exit Time: 10:36 am / 1:00 pm	**NPDES ID Number:** WYDW0002I
NAICS Code: 221310	**Inspection ID:** 202106_WYDW0002I
Lead inspector and affiliation: Kristin Ratajczak / U.S. EPA Region 8	
Inspector and affiliation: Jessica Duggan / U.S. EPA Region 8	

Facility Location Information	
Site/Facility Name & Location: Ethete Water Treatment Plant Wind River Reservation, Wyoming 43.024381° N, 108.801004° W	**Email Report to:** Mike Quiver, Director Northern Arapaho Utilities (b) (6) [redacted] Mike.quiver@northernarapaho.com

Contact Information	
	Name(s)/Title
Facility Contacts	Mike Quiver, Director, Northern Arapaho Utilities
	Harold Little Bear, Manager, Northern Arapaho Utilities
Tribal Environmental Contacts	Steve Babits, Environmental Scientist, Northern Arapaho Tribe Natural Resource Office
Owner	Northern Arapaho Tribe
Operator	Northern Arapaho Utilities
Responsible Official(s)	Mike Quiver, Director, Northern Arapaho Utilities

Permit Information	
Is the permit on site and available? On July 1, 2021, Northern Arapaho Utilities (NAU) obtained a copy of the general permit for maintenance in the main office.	**Individual or General Permit:** General
Lagoon Category: Frequent and Continuous Discharge	**Monitoring Frequency:** Varies; Monthly DMR reporting
Effective Date: August 6, 2020	**Expiration Date:** June 30, 2024
Receiving Water(s): Little Wind River	
Inspector's source of information: EPA records, compliance information from EPA's Integrated Compliance Information System (ICIS), aerial imagery, facility personnel, and site review.	

Areas Evaluated During Inspection		
Permit	**Self-Monitoring Program**	Pretreatment
Records	Compliance Schedule	Pollution Prevention
Facility Site Review	**Laboratory**	Stormwater
Effluent/Receiving Waters	**Operations and Maintenance**	Combined Sewer Overflow
Flow Measurement	Sludge Handling/Disposal	Sanitary Sewer Overflow

Report Review and Signature		
Drafter Name	**Address/Phone Number**	**Date**
Kristin Ratajczak	U.S. EPA Region 8 1595 Wynkoop St 8ENF-W-NW Denver, Colorado 80202 303-312-6310	9/2/2021
Reviewer Name	**Address/Phone Number**	**Date**
Jessica Duggan	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202 303-312-6195	9/3/2021
Supervisor Name/Signature	**Address/Phone Number**	**Date**
MICHAEL BOEGLIN Digitally signed by MICHAEL BOEGLIN Date: 2021.09.08 10:31:23 -06'00'	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202 303-312-6250	9/8/2021
Michael Boeglin, Section Chief, NPDES & Wetlands Enforcement		

Inspection Narrative and Site Description

Introduction

On Wednesday, June 30, 2021, U.S. Environmental Protection Agency (EPA) conducted a compliance evaluation inspection at the Ethete Water Treatment Plant (the facility, WTP, or lagoon), located on the Wind River Reservation, to evaluate compliance with its National Pollutant Discharge Elimination System (NPDES) permit (Permit). The EPA is responsible for implementing the NPDES program in Indian Country within the State of Wyoming. The Northern Arapaho Tribe was notified of the inspection in a letter sent June 7, 2021 and the inspection was announced to the facility two weeks prior to the inspection, to coordinate logistics.

At approximately 10:36 am, EPA inspectors Kristin Ratajczak and Jessica Duggan (jointly referred to as inspectors) met with Mike Quiver, NAU Director; Harold Little Bear, NAU Manager; and Steve Babits, Northern Arapaho Tribe Resource Office Environmental Scientist. Inspectors had presented their credentials and explained the purpose of the inspection during a facility inspection conducted earlier in the day. Inspectors proceeded to hold an opening conference, asking questions to the facility representatives to evaluate compliance with the facility's permit. Mr. Quiver and Mr. Little Bear provided an overview of the WTP's source water and distribution area, drinking water treatment processes, and wastewater operations & maintenance (O&M). Throughout the inspection, the inspectors noted their observations in a bound checklist. Photographs taken during the inspection are included in the attached photo log.

Facility Description and Process Overview

The WTP supplies drinking water to approximately a school, casino, convenience store, laundromat, offices, and approximately 425 homes. Raw water is obtained from the Little Wind River above the hot springs and gravity flows from an intake structure to the treatment plant via three miles of PVC piping. Once it arrives at the facility, raw water is dosed with polymer, mixed using an in-line static mixer, then split between four identical treatment trains. Following polymer addition, water is routed through a clarifier and a sand filtration unit. After filtration, water is treated with liquid sodium hypochlorite (12.5% solution). Treated water flows to a clear well, followed by one of three storage tanks. Tank capacities vary, accommodating 100,000 to 1.5 million gallons of treated water. An additional 90,000 - gallon storage tank is available for use at the school.

Wastewater generated during the treatment process flow to the onsite, single-cell backwash pond that is adjacent to the WTP. Sources of wastewater include scum, solids, and foam removed from the clarifiers, any liquid wastes that flow to the trench drain along the floor in the WTP, and filter backwash. The sand filtration units are backwashed with finished water every 18 hours at a flow rate of approximately 1000 gallons per minute (gpm). Discharge from the backwash pond flows by gravity through Outfall 001 to the Little Wind River and occurs daily during the summer. The final flow is estimated by measuring the height of the water as it flows over a v-notch weir. Compliance samples are collected with a ladle out of the weir box.

Facility Review

Inspectors and facility representatives observed the backwash pond and outfall to evaluate the overall condition of the lagoon. At the time of the inspection, scum and brown solids were present in the pond; however, discharge flowing over the weir appeared clear (photos 48, 49, and 50).

Inside the WTP, 275-gallon totes containing polymer and sodium hypochlorite were stored without secondary containment (photo 53). Inspectors did not view the treatment process due to ongoing construction at the facility. While onsite, inspectors observed the onsite laboratory, where the facility representatives completed analyses for total residual chlorine, pH, flow, and temperature.

Records Review and Closing

Inspectors evaluated logs for analyses conducted onsite, including total residual chlorine (TRC), pH, temperature, and flow. Discharge Monitoring Reports (DMRs) and records for other analyses required by the permit were evaluated on Thursday, July 1, 2021 at the main NAU office.

Inspectors planned to evaluate weekly inspection logs and O&M logs; however, NAU representatives indicated that while staff was onsite daily, complete inspections were not performed, and no inspection logs were maintained. Additionally, O&M logs were not available for the facility.

Inspectors held a closing conference on Thursday, July 1, 2021 with Mr. Quiver and Ms. Flora Dewey, NAU Operator, during which preliminary findings for all inspected NAU facilities were presented. Additionally, preliminary findings were transmitted to Mr. Quiver, Mr. Little Bear, Ms. Dewey, Mr. Goggles, and Mr. Babits via email on July 17, 2021. As of the date of this report, no additional information has been received from the facility. Findings identified pursuant to the inspection are discussed in the Findings, Corrective Actions, and Recommendations section, below.

Findings, Corrective Actions, and Recommendations

Finding 1: Sampling and analysis were not occurring at the frequencies specified in the Permit.

The facility acquired coverage under the Drinking Water General Permit in August 2020, in which the monitoring requirements were more frequent than the facility's previous permit (WY0044539). Since Permit issuance through to the time of the inspection, NAU representatives were monitoring three parameters less frequently than was required by the Permit, as identified in the table below.

Parameter	Frequency, as specified in the Permit	Actual Frequency
TRC	Daily	Weekly
Flow	Daily	Weekly
Total Suspended Solids (TSS)	Weekly	Bi-weekly

Permit Requirements:

Part 3.1 of the Permit specifies the monitoring frequencies for frequent and continuous dischargers as follows.

3.1 Continuous and Frequent Discharge

Table 3 details the monitoring requirements for facilities continuously and frequently discharging wastewater. For the purpose of the DWGP, frequent dischargers are those facilities that discharge wastewater at least once per 30-day period.

Table 3 – Monitoring requirements for continuous and frequent discharge

Parameter	Units	Monitoring Frequency	Type of Sample
Outfall Flow	Gallons and Gallons per day	Daily[1]	Estimate/ Measurement
pH, Standard units	Standard Units	Weekly	Grab
TSS	mg/L	Weekly	Grab
Temperature	°C	Weekly	Grab
Metals[2,3]	µg/L	Annually	Grab
TTHMs[4]	µg/L	Bi-annually	Grab
Total Residual Chlorine[5]	µg/L	Daily	Grab
E. coli[5]	Number/100 mL	Quarterly	Grab
Fecal Coliform[5]	Number/100 mL	Monthly	Grab
Iron[5]	µg/L	Quarterly	Grab
Arsenic[5]	µg/L	Monthly	Grab
Aluminum[5]	µg/L	Monthly	Grab
Hardness[6]	mg/L as $CaCO_3$	Annually[6]	Grab

Corrective Action:
Ensure monitoring occurs at the frequencies specified in the Permit and Authorization Letter. Provide the EPA with a description of how NAU will comply with monitoring requirements in the future.

Finding 2: Inspectors identified 16 effluent exceedances occuring since October 2020.
Inspectors reviewed DMRs and the associated analytical reports from October 2020 through June 2021 and identified the effluent exceedances below. The Permit limit that was exceeded for each measured concentration or calculated average is identified in **bold**.

Parameter	Collection Date	Measured Concentration, mg/l	Calculated 30-Day Average, if applicable	Permit Limit, Daily Max, mg/l	Permit Limit, 30-Day Average, mg/l
TSS	10/12/2020	280	N/A	**45**	30
TSS	10/28/2020	10	145	45	**30**
Aluminum	10/12/2020	21.1	N/A	**0.750**	0.087
Aluminum	10/28/2020	1.83	11.5	**0.750**	**0.087**
Aluminum	11/2/2020	1.05	N/A	**0.750**	0.087
Aluminum	11/16/2020	0.89	0.97	**0.750**	**0.087**

Aluminum	12/2/2020	1.12	N/A	**0.750**	0.087
Aluminum	12/17/2020	0.10	0.61	0.750	**0.087**
Aluminum	2/3/2021	5.1	N/A	**0.750**	0.087
Aluminum	2/18/2021	3.37	4.2	**0.750**	**0.087**
Aluminum	5/4/2021	1.15	N/A	**0.750**	0.087
Aluminum	5/18/2021	0.63	0.89	0.750	**0.087**
Aluminum	6/2/2021	2.28	N/A	**0.750**	0.087

Permit Requirements:

Part 2.2.1 of the Permit identifies effluent limits that may apply to the facility.

2.2.1 Primary Effluent Limitations

Table 1 details the effluent limits ALL facilities must meet to comply with this Permit

Table 1 – Primary Effluent Limitations

Pollutant	Daily Maximum	30-day average
Total Suspended Solids, mg/L	45	30
The pH of the discharge shall not be less than 6.5 or greater than 9.0 at any time, Standard Units.		

Supplemental Effluent Limitations

Table 2 outlines supplemental effluent limits that may be required to ensure that a facility's discharge complies with applicable water quality standards. The EPA Region 8 will review each NOI to determine if supplemental limitations are necessary, for each facility. The notification of coverage will identify which supplemental effluent limitations are effective.

Table 2 – Supplemental Effluent Limitations

Pollutant	Daily Maximum	30-day average
Total Residual Chlorine, µg/L	19	11
Aluminum, µg/L	750	87
Iron, µg/L	1000	N/A
Arsenic, µg/L	340	150
Arsenic (Drinking), µg/L[1]	10	N/A
E. coli, number/100ml	126	126
Fecal Coliform, number/100ml	400	200
Zinc, mg/L	120	N/A
pH (Ute Mountain Reservation): The pH of the discharge shall not be less than 6.6 or greater than 8.5 at any time, Standard Units[2]		

1. The Drinking Arsenic Limit will be applied when the source water contains arsenic and the receiving water has a beneficial use for drinking water supply
2. This pH limit will be applied for discharges on the Ute Mountain Reservation. This will apply when the receiving water has a designated use of Tribal Cultural and/or Drinking Water Source as defined in the Tribal WQS.

Of the numeric limits indicated in Table 2 of the Permit above, the facility's Authorization to Discharge identifies the following supplemental limits are applicable to the WTP's discharge. Note: the units in the table below were converted to mg/l for comparison of the facility's measured concentrations to the permit limits.

Supplemental Effluent Limitations

The EPA Region 8 has reviewed the information provide in the Facility's NOI (application) and determined that the following supplemental limitations apply. Refer to Section 5.3 of the Fact Sheet for a description of supplemental effluent limitations.

Pollutant	Daily Maximum	30-day average
Total Residual Chlorine[1], µg/L	19	11
Aluminum, µg/L	750	87

Corrective Actions:
Identify source(s) of aluminum in the treatment process and facility discharge and eliminate the source. Provide the EPA with a description of the corrective actions taken to address this finding.

Finding 3: NAU did not report effluent exceedances to the EPA.
The effluent exceedances in violation of the Daily Maximum Permit limit, as identified in Finding 2, were not reported to the EPA as required.

Permit Requirements:
Part 4.8 of the Permit states, "Twenty-Four Hour Notice of Noncompliance Reporting:
4.8.1 The Permittee shall report any noncompliance which may endanger health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the Permittee first became aware of the circumstances. The report shall be made to the EPA, Region 8, Superfund & Emergency Management Division at (303) 293-1788 and the Tribe(s) (Appendix A).
4.8.2 The following occurrences of noncompliance shall be reported by telephone to the EPA, Region 8 Enforcement and Compliance Assurance Division Water Enforcement Branch NPDES Enforcement Section at (800) 227-8917 (8:00 a.m. - 4:30 p.m. Mountain Time), and the Tribe(s) (Appendix A) by the first workday following the day the Permittee became aware of the circumstances:
4.8.2.1 Any unanticipated bypass which exceeds any effluent limitation in the Permit (See section 5.8, Bypass of Treatment Facilities.);
4.8.2.2 Any upset which exceeds any effluent limitation in the Permit (See section 5.9, Upset Conditions); or,
4.8.2.3 Violation of a maximum daily discharge limitation for any of the pollutants listed in the Permit to be reported within 24 hours.
4.8.3 A written submission shall also be provided to the U.S. EPA, Office of Enforcement and Compliance Assurance Division Water Enforcement Branch NPDES Enforcement Section, and to the Tribe(s) (Appendix A) within five days of the time that the Permittee becomes aware of the circumstances. The written submission shall contain:
4.8.3.1 A description of the noncompliance and its cause;
4.8.3.2 The period of noncompliance, including dates and times;
4.8.3.3 The estimated time noncompliance is expected to continue if it has not been corrected; and,
4.8.3.4 Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
4.8.4 The EPA may waive the written report on a case-by-case basis for an occurrence of noncompliance listed under section 4.8.2 above, if the incident has been orally reported in accordance with the requirements of section 4.8.2.
4.8.5 Reports shall be submitted to the addresses in section 4.4, Reporting of Monitoring Results."

Corrective Action:
Ensure noncompliance with maximum daily discharge limits is reported to the EPA within 24 hours of becoming aware of the violation in accordance with the Permit. Also, ensure that follow-up reports are submitted to the EPA within five days of becoming aware of the violation. Provide the EPA with a description of how noncompliance notifications and follow-up reports will be submitted to the EPA in the future in accordance with the permit.

Finding 4: Sample collection and handling did not meet the standards specified in 40 CFR Part 136.

Based on EPA's review of the available analytical reports and chain-of-custody sheets for October 2020 through June 2021, two instances were identified in which regulatory requirements specified in 40 CFR Part 136 were not followed.

- Samples collected for TSS in October 2020 were received at the laboratory above 6.0˚C.
- Records for the aluminum sample collected on February 18, 2021 did not indicate if proper chemical preservation was used.

A sample was collected on June 2, 2021 for total trihalomethanes (TTHMs) but the laboratory used an incorrect analytical method; the drinking water method (EPA 524.2) was used instead of the wastewater method (EPA 624.1) to analyze for the TTHMs compounds (i.e.
chloroform, chlorodibromomethane, dichlorobromomethane, and bromoform).

Permit Requirements:

Part 3 of the Permit states, "Effective immediately and lasting through the effective term of this Permit. Sampling and test procedures for pollutants listed in this part shall be in accordance with 40 C.F.R. Part 136, as required in 40 C.F.R. § 122.41(j). At a minimum, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated in NetDMR on the copy of record that no discharge or overflow occurred."

40 CFR Part 136, Table II, outlines the "Required Containers, Preservation Techniques, and Holding Times." Specifically, TSS samples are required to be preserved to ≤6 °C with a maximum holding time of 7 days.

40 CFR Part 136, Table IC, specifies the "List of Approved Test Procedures for Non-Pesticide Organic Compounds" and requires that either EPA 601, EPA 624.1, EPA 1624B, SM 6200 C-2011, or SM 6200 B-2011 be used for TTHM analyses.

Corrective Action:

Ensure that the sampling and analyses are conducted in accordance with the Permit and requirements of 40 CFR Part 136, including preservation requirements. Provide the EPA with a description of the corrective actions taken to address this finding.

Finding 5: Complete monitoring records were not available for a sampling event occuring in February 2021.

The monitoring records for total residual chlorine, pH, and temperature collected on February 3, 2021 did not include the time the samples were collected or the initials or name(s) of the individual(s) who performed the sampling or measurement.

Permit Requirements:

Part 4.6 of the Permit requires records contents to include the following:
"4.6.1 The date, exact place, and time of sampling or measurements;
4.6.2 The initials or name(s) of the individual(s) who performed the sampling or measurements;

4.6.3 The date(s) analyses were performed;
4.6.4 The time(s) analyses were initiated;
4.6.5 The initials or name(s) of individual(s) who performed the analyses;
4.6.6 References and written procedures, when available, for the analytical techniques or methods used; and,
4.6.7 The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results."

Corrective Action:
Ensure records contents include all elements required by the Permit. Provide the EPA with a description of the corrective actions taken to address this finding.

Finding 6: Floating scum and solids were present in the backwash pond.
At the time of the inspection, scum and brown solids were floating on the surface of the backwash pond (photos 48 and 49). NAU representatives indicated that solids were regularly removed from the pond, but records were not available to confirm a routine O&M schedule was kept.

Permit Requirements:
Part 5.6 of the Permit states that, "Proper Operation and Maintenance:
The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the Permit. However, the Permittee shall operate, at a minimum, one complete set of each main line unit treatment process whether this process is needed to achieve Permit effluent compliance."

Further, Part 5.6.2 of the Permit requires, "The Permittee shall maintain a log in either paper or electronic format containing a summary record of all operation and maintenance activities at the wastewater treatment facility. At a minimum, the log shall include the following information:
5.6.2.1 Date and time;
5.6.2.2 Name and title of person(s) making the log entry;
5.6.2.3 Name of the persons(s) performing the activity;
5.6.2.4 A brief description of the activity; and,
5.6.2.5 Other information, as appropriate.
5.6.3 The Permittee shall maintain the log in accordance with proper record-keeping procedures and shall make the log available for inspection, upon request, by authorized representatives of the U.S. Environmental Protection Agency or the Tribe(s) (Appendix A)."

Corrective Action:
Ensure proper O&M are conducted at the facility at a frequency to maintain the integrity of the backwash pond. Maintain records to document O&M activities. Provide the EPA with a description of the corrective actions taken to address this finding.

Finding 7: Weekly inspections were not being conducted and inspection logs were not maintained. During the inspection, NAU representatives indicated comprehensive weekly inspections were not completed at the facility and inspection logs were not maintained.

Permit requirement:

Part 5.5 of the permit states, "Inspection Requirements:
On at least a weekly basis, unless otherwise approved by the Permit issuing authority, the permittee shall inspect its wastewater treatment facility, at a minimum, for the following:
5.5.1.1 Determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to occur before the next inspection. If a discharge has occurred or is likely to occur before the next inspection, perform the appropriate monitoring and reporting requirements of this Permit if not already done;
5.5.1.2 Check to see if there is any leakage through the dikes;
5.5.1.3 Check to see if there are any animal burrows in the dike;
5.5.1.4 Check to see if there has been any excessive erosion of the dikes;
5.5.1.5 Check to see if there are any rooted plants, including weeds growing in the water;
5.5.1.6 Check to see if vegetation growth on the dikes needs mowing; and,
5.5.1.7 Determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility.
5.5.2 The Permittee shall maintain a log in either paper or electronic format recording information obtained during the inspection. At a minimum, the log shall include the following:
5.5.2.1 Date and time of the inspection;
5.5.2.2 Name of the inspector(s);
5.5.2.3 The facility's discharge status;
5.5.2.4 The flow rate of the discharge if occurring;
5.5.2.5 Identification of operational problems and/or maintenance problems;
5.5.2.6 Recommendations, as appropriate, to remedy identified problems;
5.5.2.7 A brief description of any actions taken with regard to problems identified; and,
5.5.2.8 Other information, as appropriate.
5.5.2.9 The permittee shall maintain log in either paper or electronic format in accordance with proper record-keeping procedures and shall make the log available for inspection, upon request, by authorized representatives of the U.S. Environmental Protection Agency or the applicable Tribe.
5.5.3 Problems identified during the inspection shall be addressed through proper operation and maintenance. (See Part 5.6 of this Permit.)"

Corrective Action:

Inspect the facility on at least a weekly basis, unless otherwise modified by written approval from the EPA. Maintain a log of the inspections conducted and include the minimum information, as required by the permit. Provide the EPA with a description of the corrective actions taken to address this finding.

Finding 8: Bulk chemicals used in the water treatment process were stored without secondary containment.

The EPA did not conduct a stormwater inspection and did not evaluate stormwater permit coverage but observed a tote of sodium hypochlorite stored inside the water treatment plant building with the building doors open (photo 53). There was no secondary containment around the tote and the configuration of the site sloped away from the building, thus any potential spill would flow away from the building rather than remaining contained within the it. The Little Wind River is approximately 100ft north of the water treatment plant building and is at risk of receiving spilled sodium hypochlorite that would flow to it by gravity if such a spill should occur.

EPA Guidance:

EPA inspectors did not conduct a stormwater inspection or evaluation of stormwater permit coverage and refence the stormwater permit below for general stormwater water guidance.

2021 Multi-Sector General Permit (MSGP), 2.1.2.1 (Minimize Exposure) states, "You must minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and stormwater in order to minimize pollutant discharges by either locating these industrial materials and activities inside or protecting them with storm resistant coverings. Unless infeasible, you must also:
a. Use grading, berming or curbing to prevent discharges of contaminated flows and divert run-on away from these areas;
b. Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge;…"

Recommendation:

Store bulk chemicals with secondary containment. No response to the EPA is requested regarding this finding.