

NPDES Inspection Report – Water Treatment Plant

National Database Information	
Inspection Date: September 2, 2021	Inspection Type: CEI – Traditional Minor
Entry/Exit Time: 13:10 / 18:40	NPDES ID Number: NDDW0004I
NAICS Code: 22131	Inspection ID: 202109 NDDW0004I
Lead inspector and affiliation: Lisa-kay Prideaux, EPA	
Inspector and affiliation: Emilio Llamozas, EPA	

Facility Location Information (Name/Location/ Mailing Address)	
Site/Facility Name & Location: White Shield Water Treatment Plant 1026 B 61 Avenue NW White Shield, ND 58540	Mail Report to: Fort Berthold Rural Water Attention: Pem Hall phall@mhanation.com

Contact Information	
	Name(s)/Title
Facility Contacts: <i>(indicate primary lead and present during inspection)</i>	Pem Hall, Fort Berthold Rural Water - Director (present for the opening conference)
	Joseph Silveria, Fort Berthold Rural Water - Operations Manager (present and primary lead)
	Dallas Fox-Osborne, Fort Berthold Rural Water - Executive Assistant (present)
	Wes Fox, White Shield Water Treatment Plant Operator (present at the site visit)
	Lisa Lone Fight, MHA Nation Science Department, Senior Science Advisor (present at the site visit)
	Kalif Bell, Indian Health Services, Inspector (present at the site visit)
Person/Company meeting definition of "Operator" per the permit type and relevant citation here	Pem Hall, Fort Berthold Rural Water - Director
Authorized Official(s) (Per NOI or SWPPP?)	Pem Hall, Fort Berthold Rural Water - Director

Permit Information	
Is the permit on site and available? Yes	Date NOI Submitted: March 26, 2020
Effective Date: April 27, 2020	Expiration Date: June 30, 2024
Latitude: 47.5607718°N	Longitude: -101.8451987°W
Receiving Water(s): Unnamed tributary discharging into Lake Sakakawea	
Regulatory Inspector's source of information: Notice of intent, facility authorization letter, drinking water general permit, ICIS, NetDMR, facility representatives, and facility observations.	

Areas Evaluated During Inspection		
<u>Permit</u>	<u>Effluent/Receiving Waters</u>	<i>Compliance Schedule</i>
<u>Records/Reports</u>	<u>Flow Measurement</u>	<i>Pollution Prevention</i>
<u>Facility Site Review</u>	<u>Self-Monitoring Program</u>	<u>Laboratory</u>
<i>Other(s):</i>		

Report Review and Signature		
Drafter Name	Address/Phone Number	Date
Lisa-kay Prideaux	U.S. EPA Region 8 8MO 10 W 15 th Street Helena, MT 59626	10/20/2021
	406-457-5022	
Reviewer Name	Address/Phone Number	Date
Emilio Llamozas	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	10/21/2021
	303-312-6407	
Supervisor Signature/Name	Address/Phone Number	Date
 Digitally signed by MICHAEL BOEGLIN Date: 2021.10.28 14:33:32 -06'00'	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	10/28/2021
	Michael Boeglin	

Inspection Narrative and Site Description

The inspection was conducted at the White Shield Water Treatment Plant located on the Fort Berthold Reservation, in White Shield, North Dakota to evaluate compliance with its National Pollutant Discharge Elimination System (NPDES) permit. The EPA issued a NPDES permit to the facility, effective on April 27, 2020. FBRW submitted a modification on September 17, 2021, to adjust from an intermittent discharger to a continuous/frequent discharger. A modified authorization was issued on October 15, 2021. With this modification, the monitoring parameters remained the same; however, the frequency of monitoring for some parameters changed.

The inspection was announced a few weeks prior to the inspection, to coordinate logistics for the inspection. On September 2, 2021, at approximately 1:10 pm, U.S. Environmental Protection Agency (EPA) inspectors Lisa-kay Prideaux and Emilio Llamozas met with Pem Hall, Director of Fort Berthold Rural Water, Joseph Silveria, Operations Manager for Fort Berthold Rural Water and Dallas Fox-Osborne, Executive Assistant for Fort Berthold Rural Water. The EPA inspectors presented their credentials and had an opening conference to explain the purpose of the inspection. The inspectors proceeded to ask a series of questions to the facility representatives to help them evaluate compliance with the facility's permit. A review of records was conducted as well as an on-site walk-through of the water treatment plant. Throughout the inspection, the inspectors noted their observations in a checklist. Photographs taken during the inspection are included in the attached photo log (photos 80-96).

The White Shield Water Treatment Plant (facility) provides drinking water for the residences and businesses of White Shield and the surrounding rural areas through approximately 230 connections.

The facility has one raw water intake from Lake Sakakawea; a reservoir on the Missouri River. The intake draws water from Lake Sakakawea approximately 1 mile from the plant, and after going through some intake screens, sends it directly to the treatment plant for processing. As the raw water enters the facility, aluminium chlorohydrate (Aqua Hawks 457) is added, mixed with an in-line rapid mixer and into a two-stage clarifier basin, coagulation and flocculation. Water then flows into a sedimentation basin with plate settlers which allows for larger particles to settle out. Following this process, water flows via gravity and splits into one of two identical rapid tri-media 'sand filter' bed treatment trains, which run in parallel. Each filter has a turbidimeter on the finished water side. Water is then injected with sodium hypochlorite prior to entering a 50,500-gallon on-site clear well. Water from the clear well is pumped to a 325,000-gallon concrete reservoir, which provides pressure for the distribution system.

Sludge is periodically flushed from the plate settlers in the sedimentation basins and from the flocculation tanks and is stored and separated from wastewater in the sludge basin. Based on turbidity meter readings, backwash of the filters occurs using clear well water. This backwash water goes first to the backwash recycle basin, then to the sludge basin where it is combined with the wastewater flushed from the sedimentation basin. After mixing and settling, supernatant is pumped to one of the two sludge lagoon ponds located east of the facility. Backwash can be directed to either pond from a junction box housing valves; however, normal operations is that water is directed to the south pond and then flows by gravity to the north pond where it is discharged. Outfall 001 is located in the northeast corner of the north pond at Latitude 47.561031°N, Longitude 101.844075°W (photo 93), and flows northwest into an unnamed tributary that empties to Lake Sakakawea (photo 94). The facility does not have an effluent flow measuring device. Sample collection occurs at end of pipe at the outfall location. The facility is permitted as a continuous discharger with an average discharge of 0.0017 MGD. The facility also has the potential

to discharge overflow water from the clear-well, which contains chlorine for distribution. Discharges from this location are not continuous, but have occurred. Discharge flows north and west to combine with the effluent discharge at an unnamed tributary of Lake Sakakawea.

Inspectors requested to review records which included a copy of the permit, facility operating records (operations and maintenance manuals, standard operating procedures, equipment maintenance records, Material Safety Data Sheets (MSDS) (for on-site chemicals) and permit required compliance reports (24-hour noncompliance records, weekly inspections, and operations and maintenance program required records). The facility stated they have not discharged at this facility; therefore, monitoring records were not reviewed other than a discussion of late discharge monitoring report (DMR) submittals.

After the facility representative interviews, the inspectors inspected the facility where Wes Fox, facility operator, Lisa Lone Fight, Senior Science Advisor for the MHA Nation, and Kalif Bell, Indian Health Services inspector, joined the inspectors. The facility is currently under construction to remove accumulated sludge and enlarge both lagoon ponds. Mr. Bell was overseeing the construction of the new cells and was invaluable in explaining the construction process and current status. The inspectors commenced the facility review at the Water Treatment Plant, where they observed the water intake pipes, injection of aluminium chlorohydrate and the in-line rapid mixers, coagulation and flocculation tanks (photos 80 & 81), sand filtration units (photo 83), and clear well. Inspectors also observed the piping and troughs for the transfer of wastewater from the flocculation basins (photo 82), filter backwash, backwash recycle basin (photo 84), and sludge basin (photo 85). Following the discharge flow path, the inspectors then went outside to view the sludge lagoon ponds. At the time of the inspection, inspectors noted the north lagoon pond was constructed with inlet apron (photo 90), depth measurement device (photo 91), overflow pipe, and outlet structure (photos 92 & 93). The south lagoon pond had been excavated around the existing pond to rough contour (photos 86 & 89). At the time of the inspection, the south pond was the only pond being discharged to, while construction was being completed on the north pond. It was also noted at the time of the inspection, the facility was discharging out of the south pond (photos 87 & 88). Discharge originated from the south pond's overflow pipe and flowed south in the previous discharge flowpath (prior to construction) to an unnamed tributary to Lake Sakakawea. Due to the quantity of green vegetation and erosion at the discharge location and further downstream of the flowpath, it appeared the discharge had been occurring for quite some time. Facility personnel closed the valve to stop discharging to the south pond (and cease the overflow discharge) and opened the valve to start sending wastewater to the north pond. However, the south pond was full of water and continued to discharge from the overflow while the inspection was performed. Facility personnel stated they would hold water in the north pond as long as possible until proper sampling equipment was in place to complete a controlled sampling discharge. The inspectors also noted an overflow pipe from the clear well with an established discharge apron (photo 95). Facility personnel stated that discharge from this overflow has previously occurred. A discharge from the overflow pipe would flow northwest to an unnamed tributary to Lake Sakakawea. This is the same unnamed tributary effluent from the newly constructed lagoon ponds will now discharge to in the future.

Since three facilities under Fort Berthold Rural Water (FBRW) were being inspected within two days, all inspection representatives agreed to hold the closing conference until all facilities had been inspected. The White Shield Water Treatment Plant was the last of the three facilities to be inspected, and therefore a closing conference with Joseph Silveria and Dallas Fox-Osborne was held and preliminary findings were discussed. The inspection concluded at approximately 6:40 pm. On September 14, 2021, the EPA sent an email to Mr. Hall, Mr. Silveria, Ms. Fox-Osborne, Edmund Baker, Environmental Director of

MHA Nation Environmental Department, Lisa Lone Fight, Science Advisor of MHA Nation Science Department, and Morgan Berquist, Science Tech 2 for MHA Nation Science Department, with the preliminary findings from the inspection.

Findings, Corrective Actions and Recommendations

Finding #1:

FBRW did not have an operations and maintenance program in place, or an operations and maintenance manual for the White Shield Water Treatment Plant. Specifically, FBRW did not have an operations and maintenance manual, a schedule for equipment and facility operations and maintenance, a routine for conducting operations and maintenance activities, or records to document any operations and maintenance schedules or activities. FBRW provided the EPA with a draft operation and maintenance manual it was planning to use in the future for this facility. The EPA performed a cursory review of the document and indicated the inspection frequency of the ponds should be changed from monthly to weekly pursuant to the weekly inspection permit requirements. FBRW was planning to update the draft operation and maintenance manual and submit it to the EPA.

Permit requirement:

- Part 5.1 of the Drinking Water General Permit (DWGP) requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 5.6.1 of the DWGP states the facility must have an operations and maintenance program as soon as practicable, but no later than 6 months after the effective date of the permit. FBRW received authorization under the DWGP on April 27, 2020.
 - Part 5.6.1.1 of the DWGP states the facility must have a current operations and maintenance manual that describes the proper operational procedures and maintenance requirements of the wastewater treatment system.
 - Part 5.6.1.3 of the DWGP states the facility must have a schedule for routine operations and maintenance activities at the facility. Part 5.6.1.4 of the DWGP states the facility operator(s) must perform the routine operation and maintenance requirements in accordance with the schedule.
- Part 5.6.2 of the DWGP states facility operator(s) must maintain a log (paper or electronic) containing a summary record of all operations and maintenance activities at the facility. The log must contain the following information (stated in Parts 5.6.2.1-5.6.2.5): date, time, name and title of person making the log entry, name of person performing the activity, brief description of the activity, and any other appropriate information pertaining to the activity. Part 5.6.2.3 states the log must be maintained in accordance with proper record-keeping procedures.

Corrective Action:

Develop an operation and maintenance program including a manual that describes the proper operational procedures and maintenance requirements of the treatment facility. Provide a copy of the operation and maintenance manual. In the response to this report, provide the EPA, the MHA Nation Environmental Department (MHA Nation) and the Indian Health Service (IHS) with a description of the corrective actions taken to address this finding.

Finding #2:

FBRW is not consistently conducting weekly inspections of the treatment system. Specifically, FBRW conducted inspections from July 2020 through December 2020; however, no inspections have been conducted to date in 2021.

Permit requirement:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 5.5.1 of the DWGP states the facility must inspect the treatment systems on at least a weekly basis to include, at a minimum, the following (Parts 5.5.1.1-5.5.1.7): state of discharge, leakage through dikes, animal burrows within the dike, excessive erosion of dike walls, removal of rooted plants (including weeds) in water, vegetation growth on dikes needing mowing, and if proper operations and maintenance procedures are being completed as required by the facility program.
- Part 5.5.2 of the DWGP states facility operator(s) must maintain a log (paper or electronic) containing the information obtained during the inspection. The log must contain the following information (stated in Parts 5.5.2.1-5.5.2.8): date and time, name of the inspector, facility discharge status, flow rate of the discharge if occurring, identification of operational problems and/or maintenance problems, recommendation to remedy identified problems, description of actions taken with identified problem, and any other appropriate information pertaining to the identified problem. Part 5.5.2.9 states the inspections must be maintained in accordance with proper record-keeping procedures.

Corrective Action:

Conduct weekly inspections of the facility and maintain the inspection reports. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding as well as a copy of inspection report(s) for at least one week prior to your response.

Finding #3:

Records of equipment calibration are not being maintained. Specifically, the facility calibrates the pH, temperature, and total residual chlorine in-house meters per the manufacturer requirements; however, the calibration date, time, personnel, results, and slope are not being recorded and maintained.

Permit requirement:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 3 of the DWGP requires sampling and test procedures for pollutants listed must be in accordance with 40 C.F.R Part 136, as required in 40 C.F.R. § 122.41(j).
- Part 4.6 of the DWGP states the recording of monitoring information to include the date, exact place, and time of sampling measurement (4.6.1), and the initials/name of individual performing the sample measurement (4.6.2).
- Part 4.7 of the DWGP requires the retention of all records containing monitoring information, including all calibration records, for a period of at least three (3) years.

Corrective Action:

Ensure in-house calibration log sheets for pH, temperature and total residual chlorine contain all required elements, including, but not limited to, date, time, and personnel conducting calibration, and result of calibration. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding.

Finding #4:

FBRW has not submitted two (2) DMRs, was late submitting seven (7) DMRs, and early submitting one (1) DMR since the permit became effective on April 27, 2020. Specifically, for the following monitoring periods, FBRW has not submitted the DMRs as required. Note, the April 30, 2021 DMR was submitted prior to the end of the monitoring period (April 30, 2021), on April 26, 2021. The monitoring period was not concluded, and a monitoring event could have occurred between April 26, 2021 (date DMR was submitted and April 30, 2021 (date the monitoring period ended).

DMR Monitoring period & location	DMR due date	DMR Submitted	Days late
July 31, 2020 (DWID-M)	October 28, 2020	Not submitted	
August 31, 2020 (DWID-M)	October 28, 2020	Not submitted	
September 30, 2020 (DWID-M)	October 28, 2020	April 26, 2021	180 days
October 31, 2020 (DWID-M)	January 28, 2021	April 26, 2021	88 days
November 30, 2020 (DWID-M)	January 28, 2021	April 26, 2021	88 days
December 31, 2020 (DWID-M)	January 28, 2021	August 11, 2021	195 days
April 30, 2021 (DWID-M)	July 28, 2021	April 26, 2021	-93 days
May 31, 2021 (DWID-M)	July 28, 2021	August 13, 2021	16 days
June 30, 2021 (DWID-M)	July 28, 2021	August 11, 2021	14 days
June 30, 2021 (DWID-A)	July 28, 2021	August 11, 2021	14 days

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 4.4 of the DWGP requires the electronic submittal of DMRs quarterly using NetDMR, and the submissions must be made no later than the 28th of the month following the completed reporting period.
- 40 C.F.R. §123.45(a)(2)(i) states, a violation must be classified as “Category I Noncompliance” if certain criteria are met. Applicable criteria include reporting violations; these include failure to submit a complete, required report (e.g., discharge monitoring report) within 30 days after the date required.

Corrective Action:

Submit the two (2) missing DMRs (for the monitoring period ending on July 31, 2020 (DWID-M) and August 31, 2020 (DWID-M)) via NetDMR and ensure all other DMRs are submitted by the date required within the permit. In the response to this report, provide the EPA, MHA Nation and IHS with a copy of record showing the missing DMRs have been submitted, and description of the corrective actions taken to address this finding.

Finding #5:

The White Shield Water Treatment Ponds are discharging from an unauthorized location. Specifically, the facility’s discharge location, designated as Outfall 001, is located in the northeast corner of the north pond. At the time of the inspection, the facility was discharging out of the south pond (photos 87 & 88). Discharge originated from the south pond’s overflow pipe on the east side of the pond (Latitude 47.560457°N, Longitude 101.843651°W). During the inspection, a copy of sample results was provided to EPA inspectors showing a sample was collected on May 11, 2021, at 13:20 by Bears Star with the collection site noted as “special purpose White Shield waste pond”. Bears Star was not available at the

time of the inspection. Facility personnel stated this sample may have been collected from the overflow of the south pond. Because of the quantity of green vegetation and erosion at the discharge location and further downstream of the flowpath, it appeared the discharge had been occurring for quite some time. Because of the May 11, 2021 sample collection, it appeared that the facility personnel were aware of the discharge.

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 2.1 of the DWGP requires FBRW to designate discharge locations.
- Authorization NDDW0004I states the wastewater lagoon outfall to be located at Latitude 47.561031° N, Longitude 101.844075° W.

Corrective Action:

Immediately cease the discharge at the unauthorized location. At the time of the inspection, facility personnel closed the valve to stop discharging to the south pond which will cease the overflow discharge. In the response to this report, provide the EPA, MHA Nation and IHS with photos and a description of the corrective actions taken to address this finding.

Finding #6:

FBRW is not collecting samples during wastewater discharges at the White Shield Water Treatment Plant. Specifically, the facility was discharging at the time of the inspection (photos 87 & 88). FBRW stated they were unaware of the discharge and therefore were not collecting daily samples. However, during the inspection, a copy of sample results was provided to EPA inspectors showing a sample was collected on May 11, 2021, at 13:20 by Bears Star with the collection site noted as “special purpose White Shield waste pond”. Bears Star was not available at the time of the inspection. Facility personnel stated this sample may have been collected from the overflow of the south pond. Because of the quantity of green vegetation and erosion at the discharge location and further downstream of the flowpath, it appeared the discharge had been occurring for quite some time. Because of the May 11, 2021 sample collection, it appeared the facility was aware of the discharge. During the inspection, the facility closed the discharge valve to stop the discharge. Since FBRW stated they were unaware of the discharge, effluent samples were not being collected, and therefore had been reporting ‘no discharge’ on monthly DMRs during the timeframe the facility was discharging.

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0003I.
- Part 3 of the DWGP requires FBRW to monitor at the frequency and with the type of measurement indicated in the DWGP and Authorization NDDW0003I. Part 3 also requires all samples to be representative of the volume and nature of the monitored discharge.
- Part 4 of the DWGP states samples taken must be collected from the effluent stream prior to discharge into the receiving waters.
- Part 4.4 of the DWGP requires FBRW to submit results on DMRs.

Corrective Action:

Collect a representative sample during a facility discharge at the frequency provided in the DWGP and Authorization NDDW0004I. Ensure the discharge status reported on the DMRs is accurate. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding.

Finding #7:

FBRW is not reporting all samples results on a DMR. Specifically, during the inspection, a copy of sample results was provided to EPA inspectors showing a sample was collected on May 11, 2021, at 13:20 by Bears Star with the collection site noted as “special purpose White Shield waste pond”. Bears Star was not available at the time of the inspection. Facility personnel stated this sample may have been collected from the overflow of the south pond. If the sample was collected from the discharge, the result obtained for total suspended solids was not reported for monitoring period ending May 31, 2021; No discharge was reported.

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 4.4 of the DWGP requires FBRW to submit results on DMRs.

Corrective Action:

Determine if the May 11, 2021 “special purpose White Shield waste pond” sample result was taken from the south pond overflow. If it was, complete and re-submit the DMR for monitoring period ending May 31, 2021 via NetDMR. In the response to this report, provide the EPA, MHA Nation and IHS with a copy of record showing the DMR has been re-submitted, and description of the corrective actions taken to address this finding.

Finding #8:

The facility has the potential to discharge from a currently unpermitted location. Specifically, facility staff indicated the drain in which the clear well overflow discharges (photo 95) to has the potential to discharge and has occurred previously. When the facility was covered under an individual NPDES permit, the clear well overflow outfall was permitted as Outfall 002; however, when the facility moved to general permit coverage, the outfall was not identified as a discharge location on the NOI.

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0004I.
- Part 2.1 of the DWGP requires FBRW to designate discharge locations.

Corrective Action:

A modification to the authorization to discharge NDDW0004I, must be submitted to the EPA for the addition of Outfall 002. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding.