U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 8
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STATEMENT OF BASIS

PERMITTEE:	City of Eagle Butte
FACILITY NAME AND ADDRESS:	City of Eagle Butte Wastewater Treatment Facility 209 Main Street Eagle Butte, South Dakota 57625-0150
PERMIT NUMBER:	SD-0020192
RESPONSIBLE OFFICIAL:	Maxwel J. Ganje, Superintendent / Supervisor / Certified Wastewater Operator Eagle Butte, South Dakota 57625-0150
FACILITY CONTACT:	Maxwel J. Ganje, Superintendent / Supervisor / Certified Wastewater Operator 209 Main Street Eagle Butte, South Dakota 57625-0150 Ph. 605-200-0265 Max.ganje@cityofeaglebutte.com
PERMIT TYPE:	Minor Municipal, Wastewater Treatment Plant (Renewal)
TYPE OF TREATMENT:	Facultative Lagoon/Waste Stabilization Pond
FACILITY LOCATION:	The Facility is located approximately 0.5 miles west of the City of Eagle Butte city center; in the Northwest ¼ of Section 18, Township 12 North, Range 24 East, within the Cheyenne River Sioux Indian Reservation in Dewey County, South Dakota.
DISCHARGE LOCATION(S):	Outfall 001: latitude 45.007500° N, longitude 101.258333° W

1. INTRODUCTION

This statement of basis (SoB) is for the renewal of National Pollutant Discharge Elimination System (NPDES) permit #SD-0020192 (Permit), to the City of Eagle Butte, for the City of Eagle Butte Wastewater Treatment Facility (the Facility). The Permit establishes discharge limitations for any discharge of water from the Facility's discharge point (Outfall 001). The SoB explains the nature of the discharges, the EPA's decisions for limiting the pollutants in the wastewater, and the regulatory and technical basis for these decisions.

The EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. § 1151, within Region 8 states; and supports implementation of federal environmental laws consistent with the federal trust responsibility, the government-to-government relationship, and the EPA's 1984 Indian Policy.

2. BACKGROUND INFORMATION

Facility Description

Based on the information provided in the Facility's renewal application, the Facility utilizes three facultative waste stabilization ponds (cells) in series to treat wastewater discharges from the City of Eagle Butte and North Eagle Butte. The Facility serves approximately 3,307 people, as of the 2010 census, with an estimated average daily wastewater loading of 211,500 gallons per day (gpd). The Facility discharges intermittently approximately once per year. A summary of the Facility's discharge monitoring report (DMR) effluent data, including flow data, can be found in Table 1a.

The renewal Permit application also indicates that the Facility serves the City of Eagle Butte and is located within the city limits, approximately 0.5 miles west of the City of Eagle Butte city center; in the Northwest ¼ of Section 18, Township 12 North, Range 24 East, within the Cheyenne River Sioux Indian Reservation in Dewey County, South Dakota. Outfall 001 is located at latitude 45.007500° N and longitude 101.258333° W and discharges to an unnamed creek, which flows into Green Grass Creek.

Based on information obtained during the EPA Region 8 NPDES Compliance Evaluation Inspection performed on August 23, 2016, the permit application, Facility O&M manual submitted with the application, a 2015 DGR Engineering "2015 Utility Improvements Project Overview" sewer map for Eagle Butte, and discussions with Indian Health Service (IHS); wastewater from the City of Eagle Butte and North Eagle Butte (the service area) is transported to the Facility by direct gravity flow, or by force main flow, from two lift stations. The main lift station is located in the North Eagle Butte service area, around the intersection of Main Street and Dupree Street, at approximately 45.006547° N, 101.23444° W. A second lift station is located in the northwest section of the service area (i.e. No Hearts Development Area) at approximately 45.012992° N, 101.247817° W. Wastewater from the service area enters the Facility through an influent manhole point located at the southeast corner of the Facility's cell (i.e. Cell 1), as shown in Figures 1 thru 4 of this SoB.

Figure 1 - The Facility relative to the Eagle Butte and North Eagle Butte service area

Green Grass Creek flow path (approx.)

Unnamed creek flow path of Facility discharge (approx.)

Outfall 001 (approx.)

EPA R8 PEI Screener tool image obtained 6/21/2019.

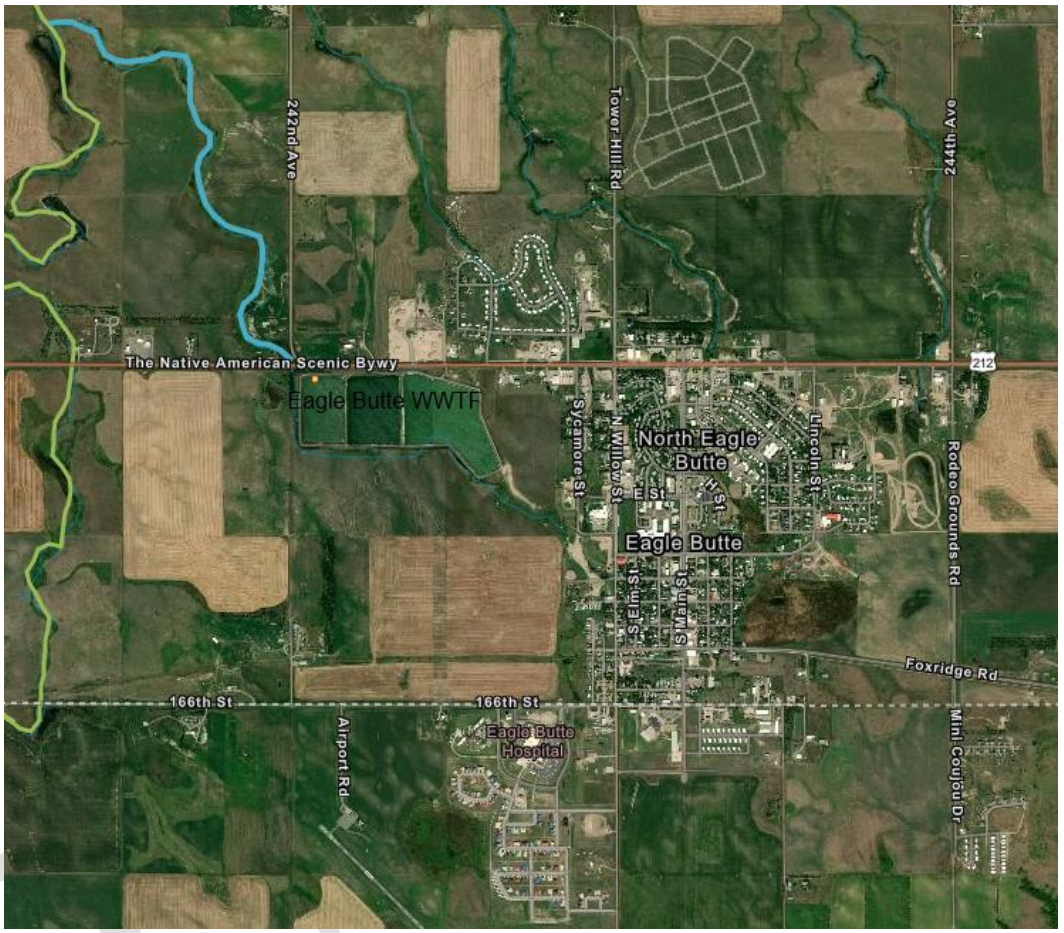


Figure 2 - Close-up of the Facility cells

Green Grass Creek flow path (approx.)

Unnamed creek discharge flow path of Facility discharge (approx.)

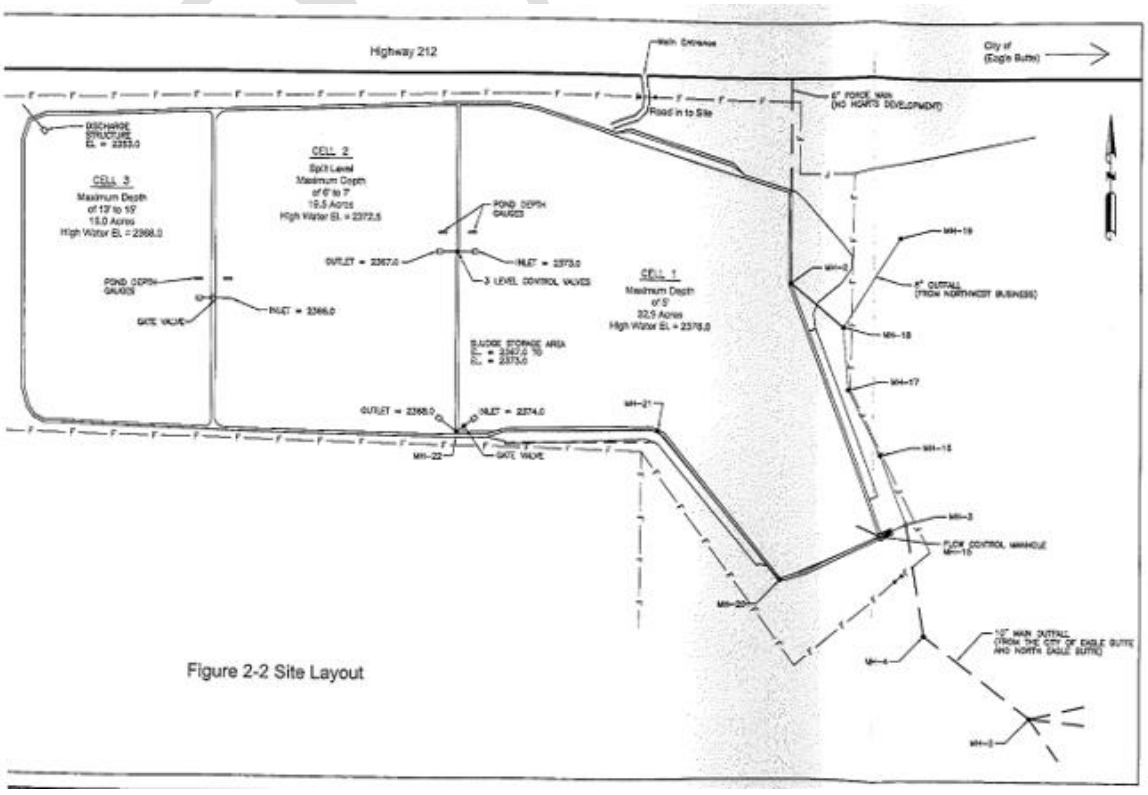
Outfall 001 (approx.)

Influent manhole point (approx.)

EPA R8 PEI Screener tool image obtained 6/21/2019.

Figure 3- Aerial Image – City of Eagle Butte Wastewater Treatment Facility lagoon cells (submitted with renewal application, received February 22, 2016)

Figure 4 - City of Eagle Butte Wastewater Treatment Facility site layout (submitted with renewal application, received February 22, 2016)



Based on the information provided in the Permit renewal application, the Facility receives only domestic wastewater from the City of Eagle Butte and North Eagle Butte. However, the EPA Region 8 NPDES Compliance Evaluation Inspection performed on August 23, 2016 indicated that in addition to domestic wastewater, the lagoon also services commercial users including restaurants and an auto repair shop. The report also indicated that the Facility accepted portable toilet septic waste in the summertime, and that septic waste haulers contacted the Facility manager to get access to the lagoon. In addition, the EPA is aware that there are additional food service/cafeteria establishments associated with the City of Eagle Butte.

The Facility has previously been covered under an individual permit.

Treatment Process - The Facility consists of three cells:

- Cell 1: 32.9 acres, maximum depth of 5'
- Cell 2: 19.5 acres, maximum depth of 6-7'
- Cell 3: 15.0 acres, maximum depth of 13-15'

These cells are operated in series (in the order listed above). Discharges from the City of Eagle Butte and North Eagle Butte enter the Facility at the southeast corner of Cell 1, through a 10" main. Treated discharges flow from Outfall 001 (located along the northwest area of Cell 3) to an unnamed creek, which flows to Green Grass Creek. Refer to Figures 1 thru 4 of the SoB for aerial images of the Facility and site layout. Based on the Permit application, no sludge treatment was performed by the Facility, and the City of Eagle Butte had anticipated a sludge removal project in 2015 and, upon initiation of the project, determined that there was very little sludge to be removed. The application also indicated that zero (0) tons of dry sludge were produced each year, and the average percent solids sludge produced and percent solids sludge sent for use and/or disposal was zero (0). In addition, the application indicated that wastewater from the Facility was not used for land application.

3. WATER QUALITY CONSIDERATIONS

Description of Receiving Water

Based on the Facility's Permit application, Outfall 001 is located at latitude 45.007500° N and longitude 101.258333° W. It discharges to an unnamed creek and flows into Green Grass Creek, which is part of the Moreau River watershed.

The Cheyenne River Sioux Tribe does not have program authorization for treatment as state (TAS) for water quality standards (WQSs) that has been approved by the EPA. In the absence of WQSs for the Cheyenne River Sioux Tribe reservation, the EPA has considered protecting beneficial uses of the receiving waters. The Cheyenne River Sioux Tribe has previously provided designated uses for the upper portion of Green Grass Creek for recreational, cultural and spiritual activities. Tribal uses for the Moreau River have previously been identified as permanent warm water fish and aquatic life propagation, full immersion recreation, wildlife, stock watering, irrigation, agricultural, cultural and spiritual activities.

Section 101(a)(2) of the Clean Water Act (the Act) states, "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983." Therefore, the Act generally provides for aquatic life and primary contact recreation uses for United States surface waters in the absence of a demonstration otherwise.

The EPA regulations on WQSs specify at 40 C.F.R. § 131.10(j), "A State must conduct a use attainability analysis as described in §131.3(g) whenever: (1) The State designates or has designated uses that do not include the uses specified in Section 101(a)(2) of the Act, or (2) The State wishes to remove a designated use that is specified in Section 101(a)(2) of the Act or to adopt subcategories of uses specified in Section 101(a)(2) of the Act which require less stringent criteria." Based on the information available at the time of the Permit renewal, it does not appear that a use attainability analysis or anything analogous to a use attainability analysis, as described in 40 C.F.R. §131.3(g), has been done on the Green Grass Creek segment. Therefore, based on use information previously provided by the Cheyenne River Sioux Tribe, the Facility's previous permit history and the information listed in this section, the beneficial uses of the receiving waters will be considered to include aquatic life and recreation.

4. PERMIT HISTORY

According to records maintained for the Facility, this renewal Permit is the 4th permit issuance since the original permit issued in 1999.

Facility Performance and Compliance History

The data in Table 1 of the SoB was collected from the Facility's DMR data that was submitted to the EPA. Table 1 provides the average and maximum pollutant values calculated from the DMR data. Since the Facility has a controlled discharge and is not continuously discharging, many of the DMR reporting dates indicate no discharge (ND).

As summarized in Table 1a, the Facility reported both complete and incomplete sets of DMR data for effluent discharges in 4th quarter 2011, 2nd quarter 2013, 4th quarter 2015, 4th quarter 2016, 4th quarter 2017, 3rd quarter 2018, 2nd quarter 2019, and 4th quarter 2019. A review of the self-monitoring DMR data received indicates that there appear to be no violations during the previous permit cycle.

Table 1a- Summary of the Facility's DMR Effluent Data
(4th Quarter of 2011 – 4th Quarter of 2019 data pull from EPA Integrated Compliance Information System (ICIS) database, and available hardcopy monitoring data, data rounded to two decimal places for table summary. All data reported in the table is based on the actual reported values/information submitted by the Facility).

	BOD (mg/L)		**pH**		**TSS (mg/L)**		**Oil and Grease**		***E. coli***		**Flow (MGD)**		**Ammonia, as N**	**Temp**
	30-Day Avg	**7-Day Avg**	**min**	**max**	**30-Day Avg**	**7-Day Avg**	**Visual***	**(mg/L)**	**5 Day Mean****	**Max (#/100mL)**	**30-Day Avg**	**Daily Max**	**Daily Max (mg/L)**	**(°C)**
Previous permit limits	**30**	**45**	**6.5**	**9.0**	**110**	**165**	**sheen**	**10**	**126**	**235**	**Monitor only**	**Monitor only**	**Monitor only**	**Monitor only**
10/1/2011-12/31/2011 (reported no discharge)	-	-	-	8.8	1.4	6	0.00	<2.0	-	<1.0	-	-	-	-
11/30/2011 (reported no discharge)	-	-	-	-	-	-	0.00	-	-	-	ND	ND	-	-
10/31/2012	-	11.00	-	8.60	-	34.00	0.00	**<20.00**	-	-	2.80	2.80	-	11.11
11/30/2012	13.00	-	-	8.74	-	34.00	0.00	**<2.0**	-	-	ND	2.80	-	12.22
06/30/2013	16.50	16.50	8.70	8.70	44.00	44.00	0.00	<8.00	63.00	63.00	1.70	1.70	0.06	15.00
11/30/2014	<2.0	<2.0	8.4	8.4	<2.0	<2.0	<2.0	-	-	-	ND	ND	-	10.0
10/31/2015	12.00	14.00	8.60	8.60	55.00	43.00	0.00	2.00	-	-	2.88	2.88	11.40	15.50
10/31/2016	-	15.00	-	8.50	-	42.00	-	-	-	-	ND	ND	-	9.44
10/31/2017	4.00	4.00	8.50	8.50	29.00	29.00	0.00	2.00	-	-	2.00	2.00	1.10	9.00
09/30/2018	5.60	5.60	8.32	8.32	24.60	24.60	0.00	0.20	56.84	56.84	ND	ND	0.35	11.40
4/30/2019	16.33	16.33	7.76	7.81	18.00	18.00	0.00	2.00	-	-	17.50	17.50	-	15.23
5/31/2019	10.67	10.67	7.74	8.67	29.67	29.67	0.00	2.00	86.90	161.00	1.50	1.70	-	13.97
10/31/2019	-	-	-	-	-	-	0.00	-	-	-	-	-	0.91	-
11/30/2019	-	-	-	-	-	-	0.00	2.00	-	-	-	-	1.03	8.5

ND = No Discharge * Reported as "0.00" if negative (e.g., no sheen was observed) **Geometric mean

Based on a review of available hardcopy monitoring data and an EPA ICIS data pull, for data submitted from 11/1/2011 - 4th Quarter of 2019, limited receiving water monitoring data was reported (without specific sample location information) under the requirements of the previous permit. The receiving water monitoring data reviewed is summarized below:

Table 1b- Summary of the Facility's DMR Receiving Stream Data
(All data reported in the table is based on the reported values/information submitted by the Facility.)

Monitoring period start	**Monitoring period end**	**total flow (MGD)**	**flow (gpm)**	**pH (su)**	**temp (°C)**	**total ammonia as N (mg/L)**	**Comments**
11/30/2011(date of sampling)	11/30/2011(date of sampling)	0.72	50	8	8.9	0.35	no discharge reported, actual receiving stream temp. reported as 48° F
6/1/2012	6/30/2012	"water present & flowing"		8.7	15.6		no discharge reported
6/1/2013	6/30/2013	1.7		8.7	15.6		pH and flow are same as effluent discharge reported, actual receiving stream temp. reported as 60° F, (59° F for effluent)
11/1/2014	11/30/2014			8.4	10		pH is same as effluent discharge reported, actual receiving stream temp. reported as 50° F
7/1/2015	7/31/2015			7.7	26.6		no discharge reported
10/1/2015	10/31/2015	2.8	2000	8.6	15.5		pH is same as effluent discharge reported
5/31/2019				8.14	20.6		
10/31/2019			0.00				
11/30/2019			0.00	7.2	8.7		

Major Changes from Previous Permit

The Facility was previously permitted under an individual permit with a provision for "permission to discharge required." This provision has been removed from the Permit, as it will contain effluent limitations at least as stringent as previous permits, required at the time of each discharge.

The limitation for *Escherichia coli (E. coli)* was previously only required between May 1 and September 30. The *E. coli* limitations will now be applicable at the time of each discharge due to the potential for primary recreational contact with the effluent as it is conveyed to and within Green Grass Creek at the time of discharge. The limits have also been updated in line with EPA's 2012 recommended *E. coli* criteria for primary contact recreation ("Recreational Water Quality Criteria", Office of Water 820-F-12-058). These contact values for *E. coli* are 410 colonies/100 mL (one-time grab) and 126 colonies/100 mL (5-day geometric mean).

The effluent limits for total suspended solids (TSS) were updated in the Permit from a 30-day average and 7-day average of 110 mg/L and 165 mg/L (respectively) to 51 mg/L and 77 mg/L (respectively). See response to Public Notice Response to Comment section, Comment #1 for additional details.

As previously identified in Section 2, Facility Description, of this SoB, the EPA Region 8 NPDES Compliance Evaluation Inspection performed on August 23, 2016 identified that, in addition to domestic wastewater, the Facility received wastewater from several commercial users including restaurants and an auto repair shop. The report also indicated that the Facility accepted portable toilet septic waste in the summertime, and that septic waste haulers contacted the Facility manager to get access to the lagoon. In addition, the EPA is aware that there are other food service/cafeteria establishments associated with the City of Eagle Butte and the Facility also provided a list of commercial users and billing register information for June 2020 reflecting water consumption during peak month, during the first public comment period for the Permit. This information is currently maintained by the Facility. The Facility also indicated that the City of Eagle Butte maintains detailed records (including sewer jetting services and chemicals that may be utilized to address specific concerns that arise) and submitted a supplemental list it maintains containing information for 27 commercial users. Due to the potential for, and known non-domestic wastewater facilities within, the Facility's service area, an Industrial Waste Survey (IWS) provision has been added to Section 1.4, Special Conditions, of the Permit. This provision is being added to ensure the Facility operators remain aware of non-domestic waste being discharged in the service area that could impact the collection system or wastewater treatment lagoon, in alignment with the objectives of the general pretreatment regulations (40 C.F.R. § 403.2).

Due to the EPA's increased emphasis on nutrients in the nation's streams as pollutants of concern, effluent monitoring requirements for total nitrogen and total phosphorus will be added to the Permit to provide information on the concentrations being discharged.

Percent Removal Requirements

In reissuing the Permit and in response to comments received during the first public notice period from the Facility, a 5-day biological oxygen demand (BOD_5) percent removal requirement from 40

C.F.R. § 133.105(a)(3) and (b)(3) has been added. The percent removal requirements are being added to ensure the Permit meets the minimum equivalent to secondary treatment requirements. In addition, the BOD_5 percent removal is being added to ensure that requirements for equivalent to secondary treatment standards/allowances, per 40 C.F.R. §133.101(g), are met for the updated TSS limits; to align with the minimum equivalent to secondary treatment requirements (taking into consideration the allowances per 40 C.F.R. §133.101(g) for facilities utilizing waste stabilization ponds as their principal process); ensure significant biological treatment as defined in 40 C.F.R. §133.101(k); and to better support future decision making regarding the application of these regulations, including 40 C.F.R. § 133.103(d), and 133.105 (a)(3) and (b)(3). The additional monitoring and reporting requirements associated with the BOD_5 percent removal are intended to provide representative influent and effluent data for percent removal calculations of BOD_5 that account for variations in wastewater treatment lagoon facility detention times (e.g. may range from several months to over a year). TSS percent removal requirements will not be added to this Permit. See the response to Public Notice Response to Comment section, Comment #1 for additional details.

This will require that additional influent sampling and an influent sample location be added to collect BOD_5 data at the influent point to the wastewater treatment facility system (e.g. prior to any treatment) so that the percent removal can be calculated when the facilities discharge. A minimum of quarterly influent sampling (regardless of discharge status) shall be implemented. This minimum influent sampling will provide data that accounts for influent characteristics over time and potential seasonal variations to be able to make a more valid comparison between influent and effluent concentrations. Flow data will also be collected at the influent to provide additional information on the nature of the influent flow.

5. PROPOSED PERMIT LIMITATIONS

5.1. Water Quality Based Effluent Limitations (WQBELs)

Section 301 of the Act requires the EPA to develop NPDES effluent limits through evaluating WQSs and treatment technology standards. In the absence of applicable WQSs, the EPA must conduct an evaluation of the Federal water quality criteria (WQC) and the assimilative capacity for the receiving stream, per 40 C.F.R. Part 304.

This evaluation is used to establish WQBELs to ensure protection of the receiving stream's water quality and its existing and designated beneficial uses.

The Cheyenne River Sioux Tribe has not been approved by the EPA for TAS, which grants authorization to establish WQSs for conditionally approval by the EPA before implementation. Based on the information available at the time of the Permit development, the Tribe has not applied for TAS or proposed WQSs for the Cheyenne River Sioux Tribe reservation.

Section 101(a)(2) of the Act states, "it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water to be achieved by July 1, 1983." To achieve this Congressional goal in the absence of Tribal WQS on the Cheyenne River Sioux Tribe reservation, the EPA will consider the beneficial uses of the receiving waters to include aquatic life and recreation as described in Section 3 of the SoB.

The EPA relied on CWA § 301(b)(1)(C) in establishing WQBELs based on EPA's Section 304(a) recommended WQC to protect the above mentioned uses in the receiving waters.

Based on the information provided in the renewal application and information available at the time of the Permit development, the Cheyenne River Sioux Tribe has not indicated changes to the designated uses since the previous permit issuance. In addition, there is no indication of major changes or construction to the Facility. Therefore, the previous permit monitoring requirements shall be maintained in line with the designated uses previously provided by the Cheyenne River Sioux Tribe for the upper portion of Green Grass Creek.

Since there still exists a potential for primary recreational contact with the effluent as it is conveyed to and within Green Grass Creek, the EPA will utilize the adopted numeric human health criteria for bacteria for the protection of primary contact recreational uses per EPA's 2012 recommended *E. coli* criteria for primary contact recreation ("Recreational Water Quality Criteria", Office of Water 820-F-12-058). These contact values for *E. coli* are 410 colonies/100 mL (one-time grab) and 126 colonies/100 mL (5-day geometric mean).

5.2. Technology Based Effluent Limitations (TBELs)

The National Secondary Standards (NSS) for secondary treatment (40 C.F.R. Part 133) have been developed by the EPA to be economical and protective of water quality for Publicly Owned Treatment Works (POTW). The Facility is a POTW as defined in 40 C.F.R. § 403.3. Therefore, the NSS will be referenced for establishing effluent limits. The EPA and Cheyenne River Sioux Tribe have not developed any additional TBELs that apply to discharges from the Facility.

5.3. Final Effluent Limitations

Table 1 –Effluent Limitations for Outfall 001.

Effluent Characteristic	30-Day Average a/	7-Day Average a/	Daily Maximum a/
Biochemical Oxygen Demand (BOD_5), mg/L, b/	30	45	N/A
BOD_5, percent removal, c/	≥ 65%	N/A	N/A
Total Suspended Solids (TSS), mg/L, b/	51	77	N/A
E. coli, Number/100 mL, d/	126	N/A	410
Oil and Grease (visual, mg/L) - upon visual inspection, there shall be no visible sheen or floating oil detected. If either is detected in the discharge, a grab sample shall be taken immediately and analyzed.			
The concentration of oil and grease shall not exceed 10 mg/L in any sample. e/			
The pH of the discharge shall not be less than 6.5 or greater than 9.0 at any time. f/			

a/ See Definitions, Section 1.1. of the Permit, for definition of terms.

b/ The limits for BOD_5, are based on the National Secondary Treatment Standards (40 C.F.R. Part 133). TSS percent removal requirements will not be added to this Permit. See response to Public Notice Response to Comment section, Comment #1 for additional details related to TSS requirements.

c/ The percent removal requirement for BOD_5 is based on 40 C.F.R. § 133.105(a)(3) and (b)(3) and is being included in the Permit to ensure that the Permit meets the minimum equivalent to secondary treatment requirements, taking into consideration the allowances in 40 C.F.R. §133.101(g) for facilities utilizing waste stabilization ponds (e.g. lagoons) as their principal process, and to better support future decision making regarding the application of the regulations in 40 C.F.R. § 133.103(c) and 133.105(b).

d/ Per EPA's 2012 recommended *E. coli* criteria for primary contact recreation ("Recreational Water Quality Criteria", Office of Water 820-F-12-058), the 30-day Average is to be calculated using the 30-Day geometric mean. The 30-day geometric mean calculation will be based on the geometric mean from the total number of samples collected during the 30-day period. The Permittee may collect more samples than the monthly samples specified in the self-monitoring requirements. The daily maximum limitation will be 410 Number/100 mL.

e/ At the time of the Permit development, there were no specific concentration Effluent Limit Guidelines (ELGs) or Federal WQSs developed for concentration limitations on oil and grease specific to POTWs, lagoons, or equivalent facilities. Since the Cheyenne River Sioux Tribe does not have TAS or approved WQSs, this limit shall be incorporated into the Permit based on previous permit provisions and the potential for discharge from non-residential/non-domestic discharge into the Facility from local businesses. There also exists a potential, even if not great, for the spilling of oil and/or grease related to Facility operations (e.g. spills, leakage from pumps, etc.).

If a visible sheen or floating oil is detected in the discharge, a grab sample shall be taken immediately, analyzed and recorded in accordance with the requirements of 40 C.F.R. Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

f/ The Facility meets the definition of a POTW as defined in 40 C.F.R. § 403.3. Therefore, the NSS for POTWs in 40 C.F.R. part 133 should be applied in conjunction with the EPA National Recommended Aquatic Life Criteria. The pH range for NSS is 6.0 - 9.0 however, the EPA National Recommended Aquatic Life Criteria freshwater chronic range is 6.5 - 9.0. The range of 6.5 - 9.0 has been selected to ensure that the range is protective of the more stringent requirements.

6. MONITORING REQUIREMENTS

6.1. Self-Monitoring Requirements - Outfall 001

Monitoring must be conducted according to test procedures approved under 40 C.F.R. Part 136 unless another method is required under 40 C.F.R. subchapters N or O.

Table 2- Outfall 001 Monitoring Requirements

Effluent Characteristic	Frequency	Sample Type a/
Total Flow, MGD	b/	Instantaneous, c/
Biochemical Oxygen Demand (BOD_5), mg/L	b/	Grab
BOD_5, percent removal	g/	Calculated g/

Total Suspended Solids (TSS), mg/L	b/	Grab
pH, standard units	b/	Grab, d/
Temperature, °C	b/	Grab, d/
Oil and grease, visual	b/	Visual, e/
Oil and grease, mg/L	b/	Grab, e/
Total Ammonia Nitrogen (as N), mg/L	b/	Grab
Total Kjeldahl Nitrogen (TKN), mg/L	b/	Grab
Nitrate-Nitrite, mg/L	b/	Grab
Total Nitrogen (TN), mg/L	b/	Calculated, f/
Total Phosphorus (TP), mg/L	b/	Grab
E. coli, Number/100mL	b/	Grab

a/ See Definitions, Section 1.1. of the Permit, for definition of terms.

b/ A minimum of three (3) samples shall be taken during any discharge of wastewater. It is required that a sample be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three (3) samples shall be taken during the first week and one (1) during each following week. All of the samples collected during the 7-day or 30-day period are to be used in determining the averages.

c/ Flow measurements of effluent volume shall be made with a flow measuring device (i.e. Parshall flume, weirs, etc.) in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate, in MGD, during the reporting period and the maximum flow rate observed (in MGD) shall be reported. **The date and time of the start and termination of each discharge shall be recorded and maintained in the Facility's sampling records.**

d/ Measurement must be analyzed within fifteen (15) minutes of sampling per 40 C.F.R. Part 136.

e/ If a visible sheen or floating oil is detected in the discharge, a grab sample shall be taken immediately, analyzed and recorded in accordance with the requirements of 40 C.F.R. Part 136.

f/ At the time of the Permit development, there was no EPA approved analytical method for Total Nitrogen listed in 40 C.F.R. Part 136. For the purposes of the Permit, the term "Total Nitrogen (TN)" is defined as the calculated sum of analytical results from "Total Kjeldahl Nitrogen (TKN)" plus "Nitrate-Nitrite".

g/ *Percent removal is defined in 40 C.F.R.* § *133.101(j)* as a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the raw wastewater influent pollutant concentrations to the Facility and the 30-day average values of the effluent pollutant concentrations for a given time period. Based on this definition, an example BOD percent removal calculation is provided below. On a quarterly DMR reporting basis, the average of all 30-day average effluent BOD values reported over the previous 6 months and the average of all 30-day average influent BOD values reported over the previous 6 months shall be used to calculate the BOD percent removal that will be reported for that quarterly DMR reporting period, if a discharge occurred within the quarterly reporting period. This will result in a rolling 6-month window of data used for quarterly calculations.

Months where no sampling occurred should not be included in the calculation. If no discharge occurred within a quarterly reporting period, no percent removal calculation is necessary for that reporting period.

Example calculation for 1st Calendar Quarter DMR Reporting (January-March):

Average Effluent 30-day BOD for 6 months =

$$\frac{\text{(October effluent BOD 30day average + November effluent BOD 30day average + December effluent BOD 30day average + January effluent BOD 30day average + February effluent BOD 30day average + March effluent BOD 30day average)}}{\text{(\# of months for which effluent data was reported (e.g. "6" if there is data for all 6 months)}}$$

Average Influent 30-day BOD for 6 months =

$$\frac{\text{(October influent BOD 30day average + November influent BOD 30day average + December influent BOD 30day average + January influent BOD 30day average + February influent BOD 30day average + March influent BOD 30day average)}}{\text{(\# of months for which influent data was reported (e.g. "6" if there is data for all 6 months)}}$$

Quarterly DMR percent removal reported value =

$$\left(\frac{\textbf{Average Influent 30day BOD for 6 months} - \textbf{Average Effluent 30day BOD for 6 months}}{\textbf{Average Influent 30day BOD for 6 months}}\right) \textbf{X 100}$$

Use of these average influent and effluent 30-day average values over this longer period of time will provide a better characterization of the removal capabilities of the Facility over time, since the Facility will have a detention time of several months between discharges.

6.2. Self-Monitoring Requirements – Receiving Stream (R001)

Total ammonia is present in the aqueous environment in both ionized and un-ionized forms. It is the un-ionized form which is toxic. The proportion of total ammonia present in un-ionized form in the receiving stream is a function of the combined upstream and effluent ammonia concentrations, as well as pH and temperature characteristics in the receiving water. Ammonia is non-conservative (i.e., concentrations are affected by biological processes) and its toxicity is affected by environmental conditions (pH and temperature) in the receiving stream.

Presently, there is limited stream data available for Green Grass Creek in the vicinity of the effluent discharge point. The intent of gathering stream data within the Permit period is to be able to evaluate potential ammonia impacts on the beneficial uses downstream of the Facility discharge.

Due to the limited amount of data received during the previous permitting cycle, the monitored data (pH, temperature and flow characteristics) collection frequency for the receiving stream shall remain the same as the previous permit. Sampling shall be conducted at the location defined as R001 in the Permit. The frequency shall be a monthly (minimum) for the effective period of the Permit. The Permittee may provide additional data if the opportunity arises. Stream monitoring shall be conducted when there is flow at R001 and access is practical and accessible (e.g., access is not

impeded by snow, ice, flooding, other unsafe conditions, etc.). Any unsafe conditions shall be recorded. **All receiving stream monthly monitored data collected, including detailed location (latitude, longitude), dates and times of the sample collections, shall be recorded and maintained in the Facility's sampling records. Sampling shall be conducted regardless of the discharge status of the Facility.**

Monitoring must be conducted according to test procedures approved under 40 C.F.R. Part 136 unless another method is required under 40 C.F.R. subchapters N or O.

Table 4 - R001 Monitoring Requirements

Receiving Characteristic	Frequency	Sample Type a/
pH, standard units	Monthly	Grab, b/
Temperature, °C	Monthly	Grab, b/
Total Ammonia Nitrogen (as N), mg/L	Monthly	Grab

a/ See Definitions, Section 1.1. of the Permit, for definition of terms.

b/ Temperature and pH samples shall be collected at the same time as sampling for the total ammonia. Temperature and pH measurements must be analyzed within fifteen (15) minutes of sampling.

Table 5- Baseline Influent Monitoring Requirements

Influent Characteristic	Frequency	Sample Type a/
Biochemical Oxygen Demand (BOD_5), mg/L	Quarterly, b/	Grab

a/ See Definitions, Part 1.1. of the Permit, for definition of terms.

b/ Samples will be taken at least once each calendar quarter and will be used in the calculation for the 30-day average for the month in which they are performed. Additional samples may be taken at the Permittee's discretion if a large amount of variability is anticipated in the influent within a quarter. Any additional sample results must be included in the 30-day average influent DMR reporting for the month in which the sampling is performed. See footnote g/ of Table 3 for additional information/example calculations. If only one sample is taken within a month, that result will be the 30-average for the month.

7. FACILITY INSPECTION REQUIREMENTS

On a weekly basis, unless otherwise modified in writing by the EPA, the Permittee shall inspect its wastewater treatment facility. The Permittee shall maintain an inspection log in either paper (e.g., bound notebook) or electronic format. Weekly inspections shall be conducted to 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. A record of the Facility's discharge status (e.g., discharging or not discharging) shall be so recorded in the inspection log. The physical condition of the Facility, as

outlined in Section 3.5 of the Permit, shall also be inspected with results recorded in the inspection log.

8. REPORTING REQUIREMENTS

With the effective date of the Permit, the Permittee must electronically report all monitoring data into the discharge monitoring reports (DMR) on a quarterly frequency using NetDMR. If no discharge or overflow occurs during the entire monitoring period, it shall be reported on the DMR Form for Outfall 001 that no discharge occurred. If there is no flow at R001 or R001 access was impeded by snow, ice, flooding, other unsafe conditions, etc., the information shall be reported on the DMR for R001 using the most applicable Net DMR no data indicator code (i.e., NODI code) that is available, to identify the circumstances of the situation. Electronic submissions by the Permittee must be sent to the EPA Region 8 no later than the 28th of the month following the completed reporting period. The Permittee must sign and certify all electronic submissions in accordance with the signatory requirements of the Permit. NetDMR is accessed from the internet at https://netdmr.zendesk.com/home .

In addition, the Permittee must submit a copy of the DMR to the Cheyenne River Sioux Tribe. Currently, the Permittee may submit a copy to the Cheyenne River Sioux Tribe by one of three ways: 1. a paper copy may be mailed. 2. The email address for Cheyenne River Sioux Tribe may be added to the electronic submittal through NetDMR, or 3. The Permittee may provide Cheyenne River Sioux Tribe viewing rights through NetDMR.

The DMRs are due quarterly and are due by the dates listed below and shall not be submitted until the reporting period is complete.

Table 6 – DMR Due Dates

Compliance Monitoring Period	Due Date
January-March	April 28th
April- June	July 28th
July-September	October 28th
October- December	January 28th

Prior to December 21, 2020, all other reports required by the Permit (e.g., Permit Sections **Error! R eference source not found.**, **Error! Reference source not found.**, and **Error! Reference source not found.**) as well as sewer overflow event reports, shall be signed and certified in accordance with the Signatory Requirements (see Permit Section **Error! Reference source not found.**), and s ubmitted to the EPA Region 8 Enforcement and Compliance Assurance Division Water Enforcement Branch and the Cheyenne River Sioux Tribe.

Effective no later than December 21, 2020, these reports shall be submitted electronically using the NPDES Electronic Reporting Tool (NeT). If the NeT tool is not available on December 21, 2020, the reports can continue to be submitted to the addresses above until the tool is available, unless otherwise indicated in 40 C.F.R. Part 127. NeT is a tool suite developed by the EPA to facilitate

electronic submittal of data by the regulated community directly to the EPA and its partners. It uses commercial "off-the-shelf" software and can support diverse form and data submission formats.

9. ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act (ESA) of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the Agency is not likely to jeopardize the continued existence of any endangered species or threatened species, or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical ("critical habitat"). See 16 U.S.C. § 1536(a)(2), 50 C.F.R. Part 402. When a Federal agency's action "may affect" a protected species, that agency is required to consult with the FWS, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 C.F.R. § 402.14(a)).

The FWS Wildlife Information for Planning and Conservation (IPaC) website program was utilized to determine what federally listed Endangered, Threatened, Proposed and Candidate Species may occur within the project area. The federally-listed threatened and endangered species that may occur within the project area in Eagle Butte, South Dakota, within Dewey County, for activities occurring in the area designated in Figure 5 (below) include:

Figure 5: Area of the Facility Lagoon Cells Utilized for IPaC Species Determination

IPaC Federally-listed Threatened and Endangered Species- Based on Figure 5 (above):

Species	Scientific Name	Status	Add'l. IPAC Species Considerations:	EPA Determination
MAMMALS				
Black-footed Ferret	*Mustela nigripes*	EXPN, CR	"Experimental, non-essential population of black-footed ferrets established pursuant to Section 10(j) of the ESA. Section 7 consultation not required except on lands administered by the U.S. Fish and Wildlife Service or the National Park Service."	NLAA
Northern Long-eared Bat	*Myotis septentrionalis*	T, CR		NLAA
BIRDS				
Least Tern	*Sterna antillarum*	E, CR		NLAA
Piping Plover (CH)	*Charadrius melodus*	T	"There is final critical habitat for this species (published in the Federal Register on May 19, 2009). Your location is outside the critical habitat."	NE
Red Knot	*Calidris canutus rufa*	T, CR		NLAA
Whooping Crane (CH)	*Grus americana*	E	"There is final critical habitat for this species (published in the Federal Register on May 15, 1978). Your location is outside the critical habitat."	NE
FISHES				
Pallid Sturgeon	*Scaphirhynchus albus*	E, CR		NLAA

Symbols/Acronyms:

- EXPN = Experimental Population
- CR = Final critical habitat. IPaC lists no critical habitats for this area.
- T = Threatened
- E = Endangered
- NLAA = may affect, but is not likely to adversely affect
- NE = No Effect

Biological Evaluation

The justification to support the determination for the species are as follows. This Facility was previously covered under an EPA Region 8 wastewater lagoon individual permit. Any water discharged will have

been treated to applicable water quality standards, criteria, and requirements; therefore, there are no expected changes or impacts to downstream habitats.

Based on the IPaC information generated, the Facility location is outside of the critical habitat for the Piping Plover and the Whooping Crane. These are both terrestrial species. The EPA's determination for these species is "No Effect."

There is no critical habitat listed for the Black-footed Ferret, Northern Long-eared Bat, Least Tern, Red Knot, or Pallid Sturgeon. Except for the Pallid Sturgeon (which prefer deeper rivers with moderate to swift currents and are unlikely to be found in an intermittent stream), the species listed are terrestrial species. The Facility's treated water discharges into an unnamed creek and then into Green Grass Creek. If these species are present, they may use these creeks for a short period of time during the year however, there are no expected changes in water quality in the receiving water and no new construction expected for the Facility. Therefore, the EPA's determination for these species is "may affect, but is not likely to adversely affect."

Based on the IPaC information and the informal consultation determination with the South Dakota FWS field office representative on July 9, 2019, the EPA determined the permitting action to have "No Effect" and "may affect, but is not likely to adversely affect" on the species listed above.

The EPA received a concurrence letter dated May 21, 2020, from the FWS South Dakota field office on this determination.

10. NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The EPA has evaluated its planned issuance of the NPDES Permit for the Facility to assess this action's potential effects on any listed or eligible historic properties or cultural resources. This correspondence is typically conducted with the Tribal Historic Preservation Office (THPO). The EPA does not anticipate any impacts on listed/eligible historic properties or cultural resources because the Permit is a renewal and will not be associated with any new ground disturbance or significant changes to the volume or point of discharge.

During the public comment period, the THPO of the Cheyenne River Sioux Tribe will be notified as an interested party to ensure that historic properties are not negatively affected by the conditions of the Permit.

The U.S. National Park Service (NPS) National Register of Historic Places NARA and NPGallery databases were utilized to determine and evaluate resources of concern near the Facility location.

The National Register of Historic Places is the official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the NPS's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.

The following assets were identified when performing a search of the NPS databases based on the State, County, and City of the Facility:

National Register Information System ID:	Title:	Areas of Significance/ Resource Type	State/ County/ City	Asset ID
4000474	Dakota Club Library	Architecture, Education/ Building	South Dakota/ Dewey/ Eagle Butte	3f8e0b2c-662f-45ae-b012-cac494be7b4f
95001468	Laurens Polygonal Hog House	Architecture/ Building	South Dakota/ Dewey/ Eagle Butte	f0a4010b-9b00-491b-ba83-4fc8cd468fb6

Based upon the information provided by the NPS National Register of Historic Places NARA and NPGallery databases, the EPA does not anticipate any impacts on listed/eligible historic properties or cultural resources due to the Permit issuance and the Facility's discharge activities from Outfall 001.

11. MISCELLANEOUS

The effective date of the Permit and the Permit expiration date will be determined upon issuance of the Permit.

Prepared by: Alysia Tien, U.S. EPA Region 8, Wastewater Section, (303) 312-7021, April 2020.

ADDENDUM:

PUBLIC NOTICE AND RESPONSE TO COMMENTS

At the time of the Permit reissuance, the EPA was the Clean Water Act (Act) Section 401 certifying authority for the Permit, because the Cheyenne River Sioux Tribe had not received authorization to implement section 303(c) of the Act. The EPA solicitated comments for Section 401 certification requirements during the public notice comment period and received_____ comments related to Section 401 certification. Upon addressing all comments received during the public notice comment period related to Section 401 certification requirements, the signing of the Permit shall constitute the EPA's Section 401 certification.

During the public comment period, the EPA notified the THPO of the Cheyenne River Sioux Tribe of the planned issuance of this NPDES Permit.

The Permit and statement of basis were public noticed in the West River Eagle newspaper on June 4, 2020 and date, year. The comment(s) received and the response(s) are provided below.

Comment #1 – Bruce Trent, Operator, City of Eagle Butte

Our comments are primarily related to the TSS…
We recommend adjusting the minimum levels of effluent quality for the waste stabilization pond facility to conform to a Total Suspended Solids (TSS) concentration that is more consistently achievable by the operation and maintenance of this facility. Based on the Code of Federal Regulations, it appears that the effluent limits can be adjusted up to alternative limits if it can be proved that the facility cannot consistently meet the new Secondary Treatment Limits in the permit. The analysis of past performance shown on Table 1a of the Statement of Basis, indicates that the TSS limit proposed was not achieved in previous years. Therefore, the operation and maintenance data indicate that the TSS values proposed at 30 mg/L in the new permit may not be achievable going forward. We recommend that the proposed effluent limit be one that can be achieved 90 percent of the time by the existing facility based on the data shown in Table 1a.

EPA's Response:

The commenter has expressed concern with the ability of the Facility to consistently achieve the total suspended solids (TSS) limits in the draft permit based on the operation and maintenance of the Facility. The draft permit established limits for TSS of 30 mg/L (30-day average) and 45 mg/L (7-day average) based on the minimum level of effluent quality attainable by secondary treatment in 40 C.F.R. § 133.102(b).

The secondary treatment limits in section 133.102 represent the basic level of treatment required from publicly operated treatment works under Section 301(b)(1)(B) of the Clean Water Act, 33 U.S.C. § 1311(b)(1)(B). The commenter correctly notes, however, that 40 C.F.R. Part 133 provides some options for flexibility from these requirements, specifically at sections 133.103 and 133.105.

Section 133.105 establishes the minimum level of effluent quality attainable by facilities eligible for treatment equivalent to secondary treatment. This includes limits for BOD_5, TSS (or SS) and pH. The

factors to determine eligibility for treatment equivalent to secondary treatment are found at section 133.101(g) and include:
(1) SS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of the effluent quality set forth in section 133.102(b),
(2) A trickling filter or waste stabilization pond is used as the principal process, and
(3) The treatment works provide significant biological treatment of municipal wastewater.

For eligible facilities, the limits for SS equivalent to secondary treatment under section 133.105(b) are a 30-day average of no more than 45 mg/l, a 7-day average of no more than 65 mg/l, and a 30-day average percent removal of not less than 65 percent.

Section 133.103 provides additional flexibility for facilities such as the Eagle Butte Facility that use waste stabilization ponds. In particular, section 133.103(c) authorizes the Regional Administrator to adjust the minimum levels of effluent quality set forth in section 133.105(b) to conform to the SS concentrations achievable with waste stabilization ponds, provided that certain criteria are met. These criteria include:

> (1) Waste stabilization ponds are the principal process used for secondary treatment at the facility; and
>
> (2) operation and maintenance data indicate that the SS values specified in section 133.105(b) cannot be achieved.

If these criteria are met, the Regional Administrator is authorized to set an SS limit "which is equal to the effluent concentration achieved 90 percent of the time within a State or appropriate contiguous geographical area by waste stabilization ponds that are achieving the levels of effluent quality for BOD5 specified in §133.105(a)(1)."

The commenter has requested an adjustment to the effluent limits for SS included in the draft permit, and recommended "that the proposed effluent limit be one that can be achieved 90 percent of the time by the existing facility based on the data shown in Table 1a [of the draft permit]." In order to determine whether or not to grant this request, the Region must determine whether Eagle Butte is eligible for treatment equivalent to secondary treatment under section 133.105(b). If so, the Region must then determine whether Eagle Butte meets the criteria for an adjustment under section 133.103(c) and, if so, determine the appropriate SS limit. An analysis of each of these elements follows.

Assessment of Eligibility for Treatment Equivalent to Secondary Treatment

As described above, a Facility must meet the three criteria at 40 C.F.R. § 133.101(g) to be eligible for treatment equivalent to secondary treatment. The Region addresses each of these criteria in order below.

Criterion #1—Consistently Exceeds Secondary Treatment Standards

The first criterion that must be satisfied to qualify for the equivalent to secondary standards is demonstrating that the TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the secondary treatment standards set forth in sections

133.102(a) and (b). The regulations at section 133.101(f) define "effluent concentrations consistently achievable through proper operation and maintenance" as:

> (1) For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least 2 years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions, and
>
> (2) A 7-day average value equal to 1.5 times the value derived under paragraph (f)(1).

The Region gathered SS monitoring data from discharge monitoring reports (DMRs) submitted by the Eagle Butte Facility to calculate the 95th percentile values for SS. Those calculations are summarized in the following chart:

DMR Data: 4th Quarter of 2011 – 2nd Quarter of 2020 data pull from EPA Integrated Compliance Information System (ICIS) database, and available hardcopy monitoring data.

30-day average			*7-day average*		
Date(s) of data	**TSS (mg/L)**	**DMR data type**	**Date(s) of data**	**TSS (mg/L)**	**DMR data type**
10/1/2011-12/31/2011 (reported no discharge)	1.4	Effluent discharge*	10/1/2011-12/31/2011 (reported no discharge)	6	Effluent discharge*
10/31/2012	-	Effluent discharge	10/31/2012	34	Effluent discharge
11/30/2012	-	Effluent discharge	11/30/2012	34	Effluent discharge
6/30/2013	44	Effluent discharge	6/30/2013	44	Effluent discharge
11/30/2014	0	Effluent discharge**	11/30/2014	0	Effluent discharge**
10/31/2015	55	Effluent discharge	10/31/2015	43	Effluent discharge
10/31/2016	-	Effluent discharge	10/31/2016	42	Effluent discharge
10/31/2017	29	Effluent discharge	10/31/2017	29	Effluent discharge
9/30/2018	24.6	Effluent discharge	9/30/2018	24.6	Effluent discharge
4/30/2019	18	Effluent discharge	4/30/2019	18	Effluent discharge
5/31/2019	29.67	Effluent discharge	5/31/2019	29.67	Effluent discharge
4/30/2020	9	Effluent discharge	4/30/2020	9	Effluent discharge
Mean =	26.16	mg/L	Mean =	28	mg/L
Stnd. Dev.=	17.80		Stnd. Dev. =	14	
# Samples =	8		# Samples =	11	
95th Ptile	51.15	mg/L	**95th Ptile**	43.5	mg/L

* These data points were not included in the calculations as it was unclear from the DMR information whether a discharge had occurred.

**Actual reported value was "<2". A value of zero was assigned for the calculation.

The limits for SS for secondary treatment under section 133.102(b) are a 30-day average of no more than 30 mg/l and a 7-day average of no more than 45 mg/l. The 95th percentile calculation for the 30-day average is 51.15 mg/l. The 95th percentile calculation for the 7-day average is 43.5 mg/l and is provided here for comparison. However, for purposes of determining eligibility, a 7-day average is calculated using the 1.5 multiplier in section 133.101(f)(2), which returns a value of 76.73 mg/l. Because these effluent concentrations consistently achievable through proper operation and maintenance are greater than limits for SS in section 133.102(b), the Eagle Butte Facility meets the first criterion for eligibility for discharge limitations based on equivalent to secondary standards.

Criterion #2—Principal Treatment Process

The second criterion that a facility must meet to be eligible for equivalent to secondary standards is that its principal treatment process must be a trickling filter or waste stabilization pond (i.e., the largest percentage of BOD and TSS removal is from a trickling filter or waste stabilization pond system). The Eagle Butte Facility uses a waste stabilization pond system as its principal process, and therefore meets the second criterion for eligibility.

Criterion #3—Provides Significant Biological Treatment

The third criterion for applying equivalent to secondary standards is that the treatment works provides significant biological treatment of municipal wastewater. The regulations at § 133.101(k) define *significant biological treatment* as using an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD_5. Previous iterations of the Eagle Butte permit have not included a BOD_5 percent removal requirement, so the Region does not have performance data on the facility's percent removal.

To account for the lack of BOD_5 percent removal data, the Region considered several options. First, the Region considered whether such performance data might be available from other similarly situated facilities. The *Technical Support Document for Proposed Regulations Under Section 304(D)(4) of the Clean Water Act, As Amended* (EPA, August 1984) is the TSD for the secondary treatment regulations, and it includes a section titled "Guidance for Implementing NPDES Permit Adjustments" (63). For new facilities that lack performance data, the guidance recommends that permit writers look at "the performance of recently constructed facilities within a State" or, if such data is not available, at "plant data from recently constructed facilities in surrounding States with similar conditions" (65). The Region submitted several queries to the ECHO database for percent removal data for similarly situated facilities, but none returned data. Reasons for this are uncertain, but it is possible that percent removal is not consistently monitored or, if monitored, not labeled in ECHO.

Next, the Region considered a potential solution contained in the preamble to the proposed secondary treatment rule. 48 FR 52258 (1983). The preambles states, "Data available in technical support document and docket materials for this proposed regulation provide an indication of the performance

capabilities of recently constructed facilities using . . . [waste stabilization pond] processes." 48 FR 52267. A review of the TSD, as well as the proposed and final rule, indicate in a number of places that influent at waste stabilization pond facility headworks typically has a BOD_5 concentrations of about 200 mg/L (see 48 FR 52267-52268, TSD (C-17, C-21), 49 FR 37011). The Eagle Butte Facility is a typical waste stabilization pond operation, primarily treating domestic wastewater from a population of 3,307 people as well as several commercial users. The system has no known infiltration and inflow (i.e. I&I) problems. As a result, the Region has concluded that the influent to the Facility likely has a similar BOD_5 concentration to the 200 mg/L identified in the TSD and preambles.

A review of the Eagle Butte DMR data indicates that the Facility has consistently achieved the BOD_5 30-day average effluent limit of 30 mg/L. Assuming an influent concentration of 200 mg/L, this means the Facility is likely achieving as good or better than 85%. As a result, the Facility meets the third criterion for eligibility.

Because the Eagle Butte Facility meets all three criteria, as described above, it is eligible for effluent limits equivalent to secondary treatment as established in 40 C.F.R. § 133.105(b).

Assessment of Eligibility for Additional Adjustment for SS Limits for Waste Stabilization Ponds

In accordance with Part 133, the Region can further adjust the maximum allowable TSS concentration for waste stabilization ponds upward from those specified in the equivalent to secondary treatment standards to conform to TSS concentrations achievable with waste stabilization ponds. Specifically, section 133.103(c) authorizes the Regional Administrator to adjust the minimum levels of effluent quality for SS set forth in section 133.105(b) upwards for wastewater treatment facilities if:

> (1) Waste stabilization ponds are the principal process used for secondary treatment at the facility; and
>
> (2) Operation and maintenance data indicate that the SS values specified in section 133.105(b) cannot be achieved.

As explained above, the Eagle Butte Facility uses a waste stabilization pond as its principal process for secondary treatment. Thus, the Facility meets this criterion for further adjustment of section 133.105(b) limits.

With regards to the second criterion, section 133.103(c)(2) does not define what is meant by the phrase "Operation and maintenance data indicate that the SS values specified in section 133.105(b) cannot be achieved." However, the regulation does define "SS concentrations achievable with waste stabilization ponds." In particular, it requires that EPA gather discharge data from a population of similarly situated lagoons meeting their BOD_5 standards and calculate their 90^{th} percentile SS concentration. The resulting SS concentration is deemed achievable. The Agency selected this 90^{th} percentile in this calculation because "[o]nly a limited amount of data were available to set SS limitations for WSPs on a State-by-State basis in 1977 when these limitations were set." 49 FR 36994 (1984). The Eagle Butte Facility has similarly limited SS concentration data as well, so the 90^{th} percentile can be used as a benchmark for assessing eligibility for this criterion. Calculating the 90^{th} percentile 30-day average SS concentration using the Eagle Butte data provided above returns a concentration of 47.3 mg/L. To account for the anomalously low 7-day average figures data from Eagle Butte, the Region calculated the 7-day average

with the 1.5 multiplier from section 133.101(f)(2), which returns a concentration of 71.0 mg/L. Both calculated concentrations exceed the equivalent to secondary SS concentrations of 45 mg/L (30-day average) and 65 mg/L (7-day average) from section 133.105(b). As a result, Eagle Butte qualifies for adjustment from those effluent levels.

EPA has published approved alternate TSS requirements for eligible facilities in each state in Appendix B of the preamble to the rule. 49 FR 37006 (1984). For South Dakota, the maximum alternate TSS limitation (30-day average) is 120 mg/L. However, section 133.105(f)(1) provides what amounts to an anti-backsliding provision. It states:

> "[P]ermitting authorities shall require more stringent limitations when adjusting permits if . . . [f]or existing facilities the permitting authority determines that the 30-day average and 7-day average BOD_5 and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, based on an analysis of the past performance of the treatment works, would enable the treatment works to achieve more stringent limitations."

As explained above, 40 C.F.R. § 133.101(f) provides a method to calculate "effluent concentrations consistently achievable through proper operation and maintenance." Using the calculations in sections 133.101(f)(1) and (2), the TSS limits for Eagle Butte have been modified as follows:

> TSS 30-day average: **adjusted upward from 30 mg/L to 51 mg/L**
>
> TSS 7-day average: **adjusted upward from 45 mg/L to 77 mg/L**

Percent Removal Requirements

In conducting this analysis, the Region realized that the Eagle Butte permit has not previously included the BOD_5 and TSS percent removal requirements from sections 133.102(a)(3) and (b)(3). In order to ensure that the permit meets the minimum secondary treatment requirements and to better support future decision making regarding the application of these regulations, including sections 133.103(c) and 133.105, the Region is adding the following BOD_5 percent removal limit from section 133.105(a)(3) to the Permit:

> the 30-day average percent removal shall not be less than 65 percent.

This will require that additional sampling and sample locations be added to collect BOD_5 data at the influent point to Cell 1 of the lagoon system so that the percent removal can be calculated when the Facility discharges. These new requirements have been added to the Permit.

The Region is not including the SS percent removal requirement from 133.102(b)(3) in the Permit. Eagle Butte has not had this requirement in past permits, the adjusted limits at 49 FR 37005 do not include a TSS percent removal requirement, section 133.101(f) does not provide a method to calculate an adjusted TSS percent removal limit from the adjusted 30-day average limit, and the anti-backsliding provision of 133.105(f) does not require more stringent percent removal requirements. Given these facts, the Region has decided to omit TSS percent removal from this Permit.

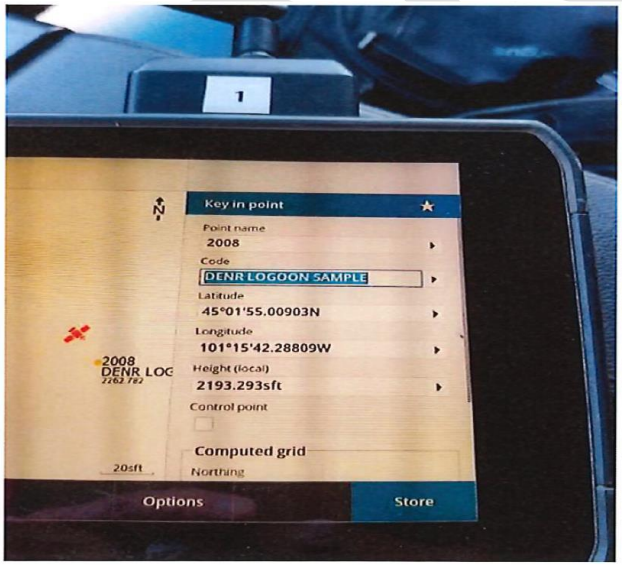
Summary of updates/changes made to the Statement of Basis/Permit based on supplemental Facility information from Sheila Ganje, Quality Control Officer/Finance Officer, City of Eagle Butte:

1) The Facility provided a list of commercial users and billing register information for June 2020 reflecting water consumption during peak month. This information is currently maintained by the Facility. The Facility also indicated that the City of Eagle Butte maintains detailed records (including sewer jetting services and chemicals that may be utilized to address specific concerns that arise) and submitted a supplemental list it maintains containing information for 27 commercial users. The SoB has been updated in section 4.0, Permit History, Major Changes from Previous Permit, indicating that the Facility does maintain an inventory of commercial/industrial users. The Industrial Waste Survey requirements will still be included in the Permit for continued maintenance of the Facility's commercial user inventory information.

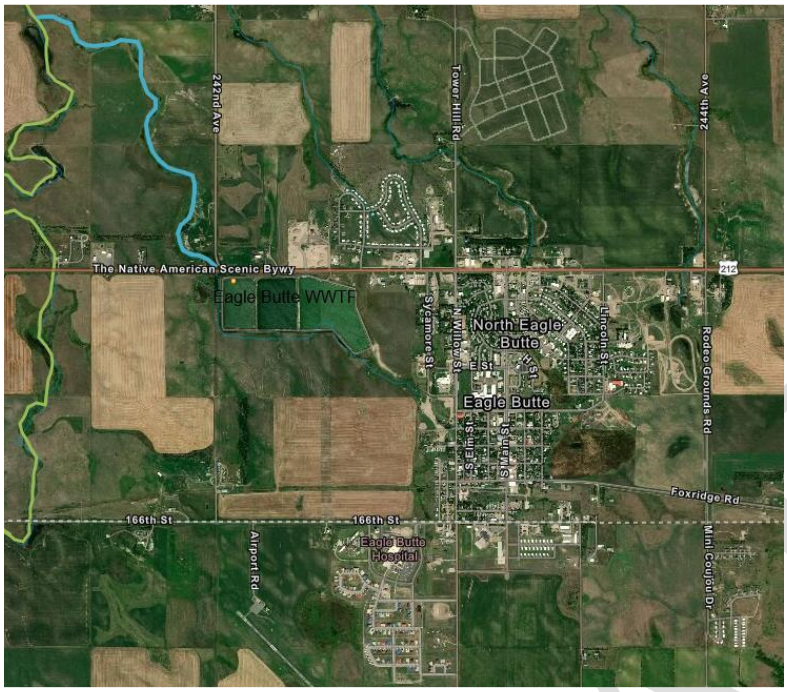
2) Updated Facility operator information was been provided. Therefore, this information has been updated in the SoB to indicate that Maxwel J. Ganje is the current Superintendent/Supervisor/ Certified Wastewater Operator with the following contact information:
Superintendent / Supervisor / Certified Wastewater Operator – Maxwel J. Ganje
605-200-0265
mjganje37@gmail.com or Max.ganje@cityofeaglebutte.com

3) Suggested coordinates for latitude/longitude appear to have been provided by the Facility for the receiving water sampling location (R001): 45°01'55.00903 N and 101°15'42.28809 W. However, the location suggested appears to be <u>downstream</u> of the confluence where the discharge enters Green Grass Creek.

(PROVIDE LATITUDE AND LONGITUDE FOR R001)



The image of the suggested sampling location (above) appears to be north of the confluence shown in the map below (e.g. where blue line (discharge) meets green line (Green Grass Creek)).



Based on the information available, Green Grass Creek flows south to north in this location. The receiving stream sampling location is intended to collect samples prior to the discharge so, the receiving stream sample location should be at a location immediately upstream of the confluence where the discharge would enter Green Grass Creek (i.e. south of the confluence). Therefore, the suggested location (north of the confluence) would not be representative of upstream sampling conditions.

At the time of the permit issuance, the accessibility (e.g. private property lines, ability to access locations, etc.) of locations along Green Grass Creek upstream of confluence of the discharge was not known. Therefore, in order to provide the Facility with more specificity for the location but still allow for flexibility in the Facility's selection of the permanent consistent sampling location (e.g. reasonably accessible), the following language (bold, italicized) has been added to the R001 sampling location description in section 1.2 of the Permit:

"Receiving water sampling location at Green Grass Creek. Samples collected and analyzed to meet self-monitoring requirements for R001, as outlined in Part 1.3.3. of the Permit, shall be collected in a consistent location in Green Grass Creek, **directly upstream** of the confluence where the Facility's effluent discharge enters Green Grass Creek**.** ***The Facility will select R001 at a consistent location in Green Grass Creek north of where Green Grass Creek crosses Highway 212 (i.e. "Native American Scenic Bywy") and south of the confluence where the Facility's effluent discharge enters Green Grass Creek****."*