

RESPONSE TO COMMENTS

Denali National Park Front Country Wastewater Treatment Plant NPDES Permit AK0053775 July 2, 2019

On March 8, 2019, the U.S. Environmental Protection Agency (EPA) issued a public notice for the reissuance of the Denali National Park Front Country Wastewater Treatment Plant (WWTP) National Pollutant Discharge Elimination System (NPDES) Permit No. ID0053775.

This Response to Comments document provides a summary of significant comments received and corresponding EPA responses.

The EPA received comments from:

- Robert Young, Utility Systems Repair Operator, Denali National Park.

These comments were submitted nine days after the close of the comment period. The EPA has decided that it will accept these comments even though they were submitted after the comment period closed.

The comments did not result in any changes to the permit.

The EPA Region 10 has undergone an organizational realignment since the draft permit was public noticed. The EPA has made changes to the permit to reflect the realignment including: the name of the Office of Water and Watersheds has been changed to the Water Division, the NPDES Permits Manager contact has been changed to the NPDES Permitting Section Manager, the Office of Compliance and Enforcement has been changed to the Enforcement and Compliance Assurance Division, and changes to mailstops within the addresses.

1. Comment: Will there be a change in the TSS [total suspended solid] levels? This was a question as discussed with Jessica Sharpe of the United States Public Health Service who I believe worked with you on our behalf for this permit. Our influent water is so clean that the removal weight/percentages are going to be very hard to achieve. We have seen this during the last permit period where we could regularly get one or the other but it was difficult to achieve both.

Response: The EPA evaluated whether there is a justification for changing the TSS limits. 40 CFR 133.103(d) provides the basis for evaluating whether percent removals lower than 85 percent for TSS may be allowed in a permit. 40 CFR 133.103(d)(1)-(3) describe three criteria the permittee must satisfactorily demonstrate:

1. The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but it's percent removal requirements cannot be met due to less concentrated influent wastewater;
2. To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standards; and
3. The less concentrated influent wastewater is not the result of excessive Inflow and Infiltration (I/I).

The EPA applied the criteria to evaluate whether Denali is eligible for TSS percent removals lower than 85 percent. The table below shows the TSS data including effluent concentrations, percent removal and influent concentrations between 2016 and 2019, the period after improvements were made to the operation of the plant. The period before this time is not representative of current

operations.

	TSS Effluent Concentration mg/L	Percent TSS Removal	TSS Influent Concentration mg/L	Report Date
MO AVG	32	82	178	07/31/2016
MO AVG	12	86	85	09/30/2016
MO AVG	33	99	2306	07/31/2017
MO AVG	38	97	1120	08/31/2017
MO AVG	38	99	4550	09/30/2017
MO AVG	27	83	160	07/31/2018
MO AVG	32	98	1395	09/30/2018
Number of months when monthly average effluent concentration is greater than the average monthly limit of 30 mg/L = 5				
Total number of monthly reporting periods = 7				
Percentage of months when the monthly average effluent concentration is greater than the average monthly limit of 30 mg/L = 71.4%				

Criteria 1 - Denali WWTP does not meet the first criteria because the effluent concentration did not consistently meet its TSS effluent limitation of 30 mg/L. The WWTP failed to meet its TSS effluent concentration limit of 30 mg/L during five out of seven months or 71 percent of the time. Therefore Denali does not meet Criteria 1.

Criteria 2 - Denali WWTP does not meet the second criteria because the Denali WWTP would not have to achieve a significantly more stringent concentration-based standard than would otherwise be required. The concentration standard is the technology based monthly TSS effluent limitation of 30 mg/L. During five of the seven months (71 percent of the time) Denali achieved the 85% removal requirements. This is shown in the table below under Column 2, Percent Removal Achieved.

Report Date	Percent TSS Removal	TSS Effluent Concentration mg/L	TSS Influent Concentration mg/L	More Stringent Standard Needed mg/L	Reduction from Effluent Standard Otherwise Required mg/L	Percent Reduction Needed
7/31/2016	82	32	178	27	3	11
9/30/2016	86	12	85	None	None	0
7/31/2017	99	33	2306	None	None	0
8/31/2017	97	38	1120	None	None	0
9/30/2017	99	38	4550	None	None	0
7/31/2018	83	27	160	24	6	20
9/30/2018	98	32	1395	None	None	0

For those two periods when the Denali WWTP did not meet the removal requirement of 85 percent (highlighted), significantly more stringent concentrations were not required. A three mg/L reduction from the 30 mg/L standard or 11 percent is required for the July, 2016 period is required. For the July 2018 period a six mg/L reduction or a 20 percent more stringent standard is required. Therefore Denali did not meet Criteria 2.

An example calculation for the more stringent standard needed for the July 31, 2016 reporting period is shown below.

Percent removal is calculated using the following equation:

$(\text{average monthly influent} - \text{average monthly effluent}) / \text{average monthly influent}$.

$(178 \text{ mg/L} - 27) / 178 = 0.85$ or 85 percent.

Criteria 3 - Denali meets the third condition for a less stringent removal rate because low influent is not due to excessive inflow and infiltration. Application 2A page 7 states inflow and infiltration is estimated at 0.00 gpd. The infiltration is negligible because the collection system pipe is mostly HDPE in good condition.

In conclusion, Denali does not meet criteria 1 or 2 and therefore a percent removal lower than 85 percent is not allowed. There are no changes to the permit based on this comment.

2. **Comment:** Why do we have parameters for total ammonia? This was a question from the QAO who maintains our lab work for several years and does not remember doing this before?

Response: As explained on Part IV.D of the Fact Sheet, the Denali WWTP has the reasonable potential to violate the ammonia water quality standards for Nenana River. The reasonable potential analysis was based on effluent and receiving water (Nenana River) ammonia data collected under the previous permit. As a result, the permit includes new ammonia effluent limits.

The permit is not changed based on the comment.

3. **Comment:** Surface water testing is this going to be required the QAO did not see it in the permit?.

Response: Surface water testing is not required under the permit. This is explained on Page 22 of the Fact Sheet.

The permit is not changed based on the comment.

4. **Comment:** Observing the receiving water in the vicinity of where the effluent enters the surface water, can you describe this better for us? Our effluent pipe is beneath the ground and between large boulders at normal water levels and at high water levels is actually right up to the rocks. The river itself is very fast large volume of glacier water that is so silty you can't see but maybe an inch or two into it.

Floating solids. Can we get a definition for a floating solid. Some here believe it to be any solid that does not settle out others are only considering large clumps as floating solids.

Response: The water quality standards require that surface waters be free from floating, suspended or submerged matter of any kind in concentrations impairing designated beneficial uses. Therefore, Condition I.B.2 of the permit is a narrative limitation prohibiting the discharge of such materials:

“Narrative limitations for floating, suspended or submerged matter:

- a) The permittee must not discharge floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
- b) The permittee must observe the surface of the receiving water in the vicinity of where the effluent enters the surface water.”

The Permittee must observe the area of the discharge to see if floating, suspended or submerged matter is visible from the discharge. Examples are discoloration, foam, soap suds, unsettled solids

that escape the treatment plant, an oil slick, or a visible sheen that can be identified as coming from the discharge pipe. Solids include both clumps and other smaller solids.

Alaska Water Quality Standards state in 18 AAC 70.050 that all fresh waters of the State of Alaska are to be protected for the following uses:

Water supply for:

- Drinking, culinary and food processing
- Agriculture, including stock watering
- Aquaculture
- Industrial
- Contact recreation
- Growth and propagation of fish, shellfish, other aquatic life, and wildlife

The regulation at 18 AAC 70 Water Quality Standards for Designated Uses establishes criteria for floating, suspended or submerged matter.

18 AAC 70.020.(b) Water Supply

(5) PETROLEUM HYDROCARBONS, OILS AND GREASE, FOR FRESH WATER USES

(A) Water Supply

(i) drinking, culinary, and food processing

Criteria: May not cause a visible sheen upon the surface of the water.

(A) Water Supply

(ii) agriculture, including irrigation and stock watering

Criteria: May not cause a visible sheen upon the surface of the water.

(A) Water Supply

(iii) aquaculture

Criteria: Surface waters and adjoining shorelines must be virtually free from floating oil, film, sheen, or discoloration.

(B) Water Recreation

(i) contact recreation

Criteria: May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils.

(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife

Criteria: May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils.

(8) RESIDUES, FOR FRESH WATER USES: Floating solids, debris, sludge, deposits, foam, scum, or other residues

The permit is not changed based on the comment.

5. Comment: Will the TRC be raised to a 1 PPM from 0.18 ug/l.

Response:

As noted on page 21 of the Fact Sheet the regulations at 40 CFR §122.44 (l) generally prohibit the reissuance of an existing NPDES permit that contains less stringent effluent limits (“antibacksliding”) but provides limited exceptions to this prohibition. None of the antibacksliding exceptions apply that would allow the increase in TRC from 0.18 µg/L to 1 PPM (1.0 mg/L). Further, the Denali WWTP has attained the existing chlorine limits and the Permittee notified the EPA that the Park Service is assessing switching from chlorine disinfection to ultraviolet disinfection.¹

The permit is not changed based on the comment.

¹ Email from Jessica Sharpe, National Park Service, Office of Public Health to Susan Poulosom dated November 28, 2018.

Attachment

Date	TSS Percent Removal	Effluent TSS	Influent TSS	Removal Requirement
7/31/2016	82	32	178	85
9/30/2016	86	12	85	85
7/31/2017	99	33	2306	85
8/31/2017	97	38	1120	85
9/30/2017	99	38	4550	85
7/31/2018	83	27	160	85
9/30/2018	98	32	1395	85
Total Measurements below 85 % removal	2			
Total Measurements	7			
Percent Below 85% Removal Rate	29 %			
Removal Rate at the 5 th Percentile	82.3			