

US EPA ARCHIVE DOCUMENT

October 2012
Supplemental FACT SHEET
Authorization to Discharge under the
National Pollutant Discharge Elimination System
for the
Navajo Tribal Utility Authority – Kayenta Wastewater Treatment Facility
NPDES Permit No. NN0020281

EPA has received comments received from the applicant (NTUA) during the 30-day public comment period for the NPDES permit public notice and has made the following revisions upon issuance of the final permit.

Determination of Effluent Limitations, Monitoring, and Reporting Requirements

A. Federal Secondary Treatment Effluent Discharge Limitations

The proposed draft permit set forth discharge limitations for biochemical oxygen demand (BOD₅) and total suspended solids (TSS) based on federal secondary treatment regulations under 40 CFR Section 133.102(a) and (b), and consistent with those in the previous permit. NTUA submitted a request to have Kayenta facility under consideration for effluent limits equivalent to secondary treatment level applicable to lagoon facilities. Based on review of the plant's historical discharge monitoring data, EPA determines that Kayenta facility has not been able to achieve consistent compliance with the current secondary treatment permit limits. And given the treatment capabilities and actual performance of the waste treatment stabilization ponds at the facility, EPA believes that the proposed limits in the public-noticed permit are more stringent than required by national equivalent to secondary treatment standards for waste stabilization pond facilities. EPA is therefore establishing a lower percent removal requirement and effluent limitations for BOD₅ and TSS equivalent to secondary treatment regulations at 40 CFR Sections 133.105 and 40 CFR 133.103(c).

BOD₅ limit calculations

Under 40 CFR Section 133.105, the discharge shall not exceed a weekly average of 65 mg/l and a monthly average of 45 mg/l BOD₅, and shall achieve no less than a monthly average rate of 65% removal. The limits are designated as 30-day and 7-day averages since the facility operates similar to a POTW, and it would be impracticable to do otherwise [40 CFR 122.45 (d)]. Under 40 CFR Section 122.45(f), mass limits are required for BOD₅. The mass limits for BOD₅ are based upon the 0.9 MGD design flow.

Monthly average

$$\frac{0.9 \text{ MG}}{\text{day}} \times \frac{45 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 152 \text{ kg per day}$$

Weekly average

$$\frac{0.9 \text{ MG}}{\text{day}} \times \frac{65 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 220 \text{ kg per day}$$

The monitoring frequency remains monthly, consistent with the proposed permit.

TSS limits calculations

Under 40 CFR Section, 122.45(f), the discharge limits for TSS shall not exceed a monthly average of 90 mg/l and a weekly average of 135 mg/l and shall achieve no less than a monthly average rate of 65% removal. These limitations (Alternative State Requirements) are consistent with 40 CFR 133.101(f), 133.103(c), 133.105(b) and (d). The mass limits are calculated based upon the 0.90 MGD design flow.

Monthly average

$$\frac{0.9 \text{ MG}}{\text{day}} \times \frac{90 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 304 \text{ kg per day}$$

Weekly average

$$\frac{0.9 \text{ MG}}{\text{day}} \times \frac{135 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 456 \text{ kg per day}$$

The monitoring frequency remains monthly, consistent with the proposed permit.

**B. Rationale for Water Quality Based Effluent Limitations (“WQBELs”)
Whole Effluent Toxicity (WET)**

The proposed draft permit set forth requirements for WET monitoring. It is U.S. EPA Region 9’s policy that all continuous dischargers be required to perform WET testing. WET testing is intended to demonstrate that there are no unexpected toxic components of the discharge escaping to the receiving water undetected, and to prompt a response if they are present. The proposed permit therefore requires chronic toxicity testing to be conducted *monthly* using a 24-hour composite sample of the treated effluent. If no toxicity is found in the test results during the first 12 monthly test results, the testing frequency is reduced to a *quarterly* basis thereafter.

NTUA submitted a request for less frequent WET monitoring than the proposed requirements. Since this is a new requirement and in the absence of historical WET data and information at Kayenta facility, and since NTUA cannot ascertain that there are no toxic impacts from its discharge, it is necessary for EPA to collect the first 12 monthly testing data worth before a reduction in testing frequency is warranted. Using the 0.9 MGD design flow for plant sizes, EPA proposed the reduction to a quarterly basis for Year 2. However, based on review of actual historical discharge flows (from 0.45 MGD to 0.55 MGD) showing Kayenta facility has long been operating and discharging significantly below its design capacity, EPA believes that the reduction to a semiannual

monitoring frequency is warranted for smaller size facilities. The final permit will be amended to indicate *semiannual* WET testing, in January and July, after NTUA has completed 12 months of testing to demonstrate that there are no unexpected toxic impacts of the discharge effluent.

All other permit conditions shall remain unchanged.