

US EPA ARCHIVE DOCUMENT

September 30, 2009

Fact Sheet on EPA's Decision on the application for renewal of a CWA 301(h) variance for the Northern District Sewage Treatment Plant

I. ACTION

The U.S. Environmental Protection Agency (EPA) is issuing a Final Decision Document (FDD) to deny an application from the Guam Waterworks Authority (GWA) for renewal of its variance from full secondary treatment under section 301(h) of the Clean Water Act (CWA) for its ocean discharge from the Northern District Sewage Treatment Plant (STP). EPA has concluded this treatment plant does not qualify for a renewed variance.

II. FEDERAL WASTEWATER TREATMENT REQUIREMENTS

Across the United States, municipal sewage treatment plants receive and treat sewage and other wastewater collected from homes, businesses, and industries. These plants are designed to treat wastewater prior to reuse or discharge to streams, oceans, or the ground. There are two basic stages in the treatment of municipal wastewater: **primary** and **secondary treatment**, although more advanced treatment (such as tertiary) is becoming increasingly common.

Primary treatment screens out large objects (such as rags), removes grit (such as cinders, sand and small stones), and allows the wastewater to settle (where objects that float, such as sticks, are skimmed off the surface, and materials that sink are removed from the bottom). Primary treatment removes at least 30% of total suspended solids (TSS), which includes silt and other particles, and at least 30% of biochemical oxygen demand (BOD), a measure of organic material in the water.

When secondary treatment is used, wastewater receives primary treatment and is then exposed to microorganisms (such as bacteria). Different biological treatment techniques allow the microorganisms to consume most of the waste's organic matter. The microorganisms are then removed prior to discharge. The definition of secondary treatment includes removal of at least 85% of TSS and BOD.

In 1972, Congress passed the Federal Water Pollution Control Act amendments, which required Publicly Owned Treatment Works (POTWs) to achieve secondary treatment by 1977. In 1977, Congress added section 301(h) to the CWA, which allowed the EPA, on a case-by-case basis, to grant variances from secondary treatment requirements.

The CWA specifies criteria the discharger must meet to receive a variance from secondary treatment under section 301(h) of the CWA. These criteria include requirements to:

- Attain or maintain water quality that allows recreational activities in and on the water;
- Attain or maintain water quality that allows protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife;
- Meet water quality standards (or federal guidance values for pollutants without standards);
- Establish a monitoring program to assess impacts;

- Provide a minimum of primary or equivalent treatment;
- Have an approved pretreatment program and establish toxics controls;
- Provide enhanced urban area pretreatment (only applies to POTWs serving a population greater than 50,000); and
- Protect water supplies.

When EPA concludes that an applicant for a 301(h) variance meets the 301(h) criteria, EPA may issue a permit that allows an ocean discharge at less than full secondary treatment.

III. THE NORTHERN DISTRICT SEWAGE TREATMENT PLANT

As shown in Map 1, the Northern District Sewage Treatment Plant (Northern District STP) is a primary treatment plant located on the northwest coast of the island of Guam, in the community of Dededo. Wastewater is collected from the regions of Dededo, Latte Heights, Perez Acres, Ypaopao, and Marianas Terrace, the Yigo Collector System, and other unincorporated subdivisions throughout Yigo and Dededo municipalities. The service area also includes the U.S. military facilities (Air Force and Navy) within the areas of Dededo and Harmon Annex, and Anderson Air Force Base. The Northern District STP currently provides primary treatment for a population of approximately 76,000 people.

GWA has constructed a new outfall which discharges into the Philippine Sea off of Tanguisson Point at a depth of 42.6 m (140 ft). EPA based its decision on the design of the new outfall, which included a new diffuser that has not yet been installed. The daily flow through the plant averages 10.6 million gallons per day (MGD), though flow is projected to increase to an average of 12 MGD by 2013.

The Northern District STP is currently operating under a permit EPA originally issued in June 1986, which has been administratively extended since its expiration in June 1991. This permit contained a 301(h) variance allowing for less than secondary treatment. GWA submitted a section 301(h) application for renewal of its variance on December 28, 1990. Between 1991 and 1997, EPA required GWA to submit additional information to supplement its renewal application. However, GWA failed to provide complete information during this period, and, as a result, EPA issued a tentative decision on April 4, 1997, that recommended that GWA be denied a variance from secondary treatment requirements. GWA submitted a revised section 301(h) renewal application for the Northern District STP to EPA on March 27, 1998 and has submitted additional information to supplement its application for renewal of its section 301(h) variance since that time. On January 5, 2009, EPA issued a Tentative Decision that the application for a renewed variance be denied. Subsequently, EPA held a public hearing on the Tentative Decision on June 3, 2009 and accepted public comments on the Tentative Decision through June 30, 2009. EPA has carefully considered all the public comments and has prepared written responses to all comments received.

IV. EPA'S REVIEW OF GWA'S APPLICATION FOR 301(h) VARIANCE RENEWAL

EPA's review of GWA's application for a renewed variance from full secondary treatment included data provided by GWA on the actual wastewater discharged through the old and new outfalls, results of sampling conducted in the waters surrounding the new outfall, as well as EPA's predictive modeling for the proposed discharge through the new outfall.

Based on its review, EPA has concluded that the proposed discharge from the Northern District STP's extended outfall and proposed diffuser will not meet several of the CWA section 301(h) criteria, including:

- The discharge does not meet the mandatory minimum standard of primary treatment;
- GWA has not demonstrated the discharge will attain or maintain water quality to allow recreational activities in and on the water;
- GWA has not demonstrated the discharge will attain or maintain water quality to allow protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife;
- The applicant's monitoring data is insufficient to demonstrate compliance with Guam water quality standards;
- The applicant has not developed a program to control toxic pollutants from non-industrial sources.

Some of the most significant issues concerning the Northern District STP's failure to meet the section 301(h) criteria are described below.

A. Failure to Achieve Minimum Standard of Primary Treatment

Federal law requires that facilities operating under a CWA 301(h) variance from secondary treatment requirements must still achieve primary treatment of wastewater received. Primary treatment is defined as a minimum of 30% removal of BOD and TSS, as described above. Monitoring data indicate the Northern District STP has not consistently removed 30% of the BOD and TSS entering the plant. Therefore, the applicant has not demonstrated the ability to comply with the minimum requirement of primary treatment.

B. Failure to Meet Guam Water Quality Standards

The level of treatment proposed by GWA would not result in attainment of the standards for bacteria established by GEPA to protect recreational activities such as swimming. Secondary treatment would remove additional bacteria and make additional disinfection more effective.

In evaluating whether the proposed discharge from the Northern District STP will meet water quality standards protecting marine organisms, EPA evaluated the proposed discharge with respect to Guam standards established to protect indigenous aquatic life. GWA has not collected the data needed for EPA to support this evaluation.

C. Failure to Provide Required Information

By failing to collect and provide necessary data, GWA did not demonstrate the Northern District STP can meet CWA requirements and GEPA standards. For example, EPA has not received monitoring data on nutrient discharges from the Northern District STP since 1989.

As part of the conditions of the 301(h) variance for the Northern District STP, GWA was required to demonstrate the discharge complies with water quality standards by conducting monitoring of the ocean waters which receive the discharge. GWA failed to conduct and submit this monitoring for many of the required parameters for discharge through the old outfall, though GWA has started monitoring the ocean waters around the new outfall for some parameters. EPA therefore has concluded that GWA failed to demonstrate compliance with water quality standards intended to protect the quality of the receiving waters.

V. CONCLUSION AND NEXT STEPS

EPA has concluded the CWA 301(h) criteria have not been met and EPA has made a final decision denying GWA's request for the Northern District STP variance from secondary treatment requirements pursuant to section 301(h) of the CWA. Notice of this decision is being served to the applicant and all persons who submitted written comments during the public comment period or requested notice of the final decision. Interested persons may request that the Environmental Appeals Board review this final decision. If review is requested under 40 CFR 124.19, the decision will be stayed pursuant to 40 CFR 124.14(b)(2) and 124.16.

EPA's FDD documenting its findings and conclusions can be found on the EPA Region 9 website <http://www.epa.gov/region09/water/npdes/pubnotices.html>.