

US EPA ARCHIVE DOCUMENT

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**FACT SHEET**

Authorization to Discharge under the  
National Pollutant Discharge Elimination System  
for the  
Commonwealth Utilities Corporation  
Sadog Tasi Wastewater Treatment Plant

NPDES Permit No. MP0020010

*(Note: The NPDES permit number for this facility has been changed from NI0020010 to MP0020010. The two-letter prefix of the permit number is being replaced with MP for its state code to provide for more efficient data management. The new MP prefix will be used in the EPA's database for all NPDES permits in the Commonwealth of the Mariana Islands.)*

These pages contain information concerning the proposed National Pollutant Discharge Elimination System (NPDES) permit for the discharge from the Sadog Tasi Wastewater Treatment Plant (WWTP).

**I. SUMMARY**

On February 6, 2006, the Commonwealth Utilities Corporation (permittee) submitted an application for the renewal of the NPDES permit for Sadog Tasi WWTP, a publicly-owned treatment works (POTWs) subject to federal secondary treatment standards. The U. S. Environmental Protection Agency, Region 9 (USEPA Region 9) received the application on February 22, 2006 and a supplemental application with complete sampling results on August 1, 2006. This fact sheet is based on the facts presented by the applicant in both applications and any previous discharge data submitted, along with the appropriate laws and regulations.

Pursuant to Section 402 of the Clean Water Act (CWA), USEPA Region 9 is proposing issuance of the renewed NPDES permit for the Sadog Tasi WWTP's discharge of secondary treated wastewater through the Saipan Lagoon outfall to the Class A marine receiving waters of Tanapag Harbor of the Philippine Sea, a water of the U.S.

The Saipan Lagoon outfall discharges within territorial waters of the *Commonwealth of the Northern Mariana Islands* (CNMI). However, because the CNMI Division of

Environmental Quality (DEQ) does not have primary regulatory responsibility for administering the NPDES permitting program, USEPA Region 9 has primary regulatory responsibility for the discharge. USEPA Region 9 is proposing to issue an NPDES permit incorporating both federal secondary treatment standards and CNMI water quality requirements.

## **II. ADMINISTRATIVE PROCESS**

The administrative processing of a NPDES application consists of the following actions:

- A. Submission of a timely and complete application by the permittee;
- B. Review of the application and analysis of discharge data to determine compliance with the Clean Water Act and supporting regulations, and preparation of a draft NPDES permit by USEPA Region 9 staff based on this review;
- C. Public notice of a draft NPDES permit by USEPA Region 9;
- D. Public hearings (if needed) to address public interest;
- E. CNMI DEQ concurrence in the issuance of a NPDES permit (through CWA Section 401 water quality certification), or denial by the CNMI DEQ;
- F. Processing of appeals, in accordance with 40 Code of Federal Regulations (CFR) Part 124, Subpart E, if an appeal is timely and appropriately filed.

## **III. FACILITY DESCRIPTION**

The permittee presently operates the Sadog Tasi WWTP, which overlooks Tanapag Harbor near Charlie Dock on the island of Saipan. Sadog Tasi WWTP serves a population of approximately 20,000 people and receives mainly domestic wastewaters from a network of wastewater collection and transmission facilities known as the Central System. The garment industry in Saipan is on the decline, as is the local economy, and many garment factories that were formerly connected to the Sadog Tasi plant have closed in the past few months. Garment factories had been a concern for their effects on the WWTP due to their use of various types of chemicals and materials such as stonewash stones in the manufacturing process. The permittee estimates the total average daily wastewater flow from all industrial sources in the service area to be less than 0.2 million gallons per day (MGD); there is likely occasional discharge of toxic/hazardous wastes into the wastewater collection system by different users.

In 1985, Sadog Tasi WWTP was permitted under Section 301(h) of the CWA to discharge primary treated effluent based on a treatment capacity of 1.63 MGD; however,

to achieve federal secondary treatment standards for POTWs and to accommodate population growth in the service area, the permittee upgraded and expanded the WWTP to 4.8 MGD. This upgraded and expanded WWTP was completed in 1995. Sadog Tasi WWTP is currently designed to achieve secondary treatment using the physical and biological processes listed below:

Sadog Tasi WWTP	
Primary and Secondary Treatment	Solids Handling
Influent screening Grit removal Aerated biological treatment using activated sludge (waste activated sludge to aerobic digester) Clarification (scum to digester)	Screenings and grit (to municipal solid waste landfill) Sludge aerobically digested – 15 dry metric tons Digested sludge chemically conditioned and dewatered using belt filter press Sludge cake (to municipal solid waste landfill) – 5 tons

Based on data provided by the permittee, the treated wastewater discharge has the following characteristics for biochemical oxygen demand, total suspended solids, and pH:

Discharge Parameter	Units	Annual Average (2005)	Annual Average (2006)
Flow	MGD	2.9	No data available for 2006
Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/l	10.5	
	% removal	85	
Total Suspended Solids (TSS)	mg/l	10.8	
	% removal	85	
pH	std. units	6.30 – 7.85	

Secondary treated wastewater is discharged approximately 1,200 feet offshore at a depth of about 49 feet into the Class A receiving waters of Tanapag Harbor of the Philippine Sea, a water of the U.S. The Saipan Lagoon outfall is a welded high density polyethylene (HDPE) pipe anchored to the bottom with concrete blocks, with the diffuser system resting on the harbor bottom. The discharge point is described as follows:

Discharge Serial Number	North Latitude	East Longitude	Description
001	15° 13' 35"	145° 43' 40"	Primary discharge point into Tanapag Harbor of the Philippine Sea, on the island of Saipan.

Aerobically digested sludge is mechanically dewatered and the sludge cake is hauled to and disposed of at Puerto Rico Dump, a municipal solid waste landfill.

The discharge was regulated under NPDES Permit No. NI0020010. This permit was issued on April 9, 2001, and expired on May 13, 2006.

#### **IV. COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS WATER QUALITY STANDARDS**

To protect the designated uses of surface waters of the U.S., the *Commonwealth of the Northern Mariana Islands (CNMI)* has adopted water quality criteria in January 1997 and amended in September 2004, for waters of the Commonwealth. Under the jurisdiction of the CNMI, Division of Environmental Quality (DEQ), Saipan has two classifications (AA and A) for marine waters. Class A marine waters in Saipan Lagoon are protected for their recreational purposes and aesthetic enjoyment. Other uses are allowed as long as they are compatible with the protection and propagation of fish, shellfish, and wildlife, and with compatible recreation with risk of water ingestion by humans.

#### **V. BASIS FOR REQUIREMENTS**

Section 301 of the CWA established a required performance level, referred to as “secondary treatment,” that all POTWs were required to meet by July 1, 1977. Federal secondary treatment effluent standards for POTWs are contained in Section 301(b)(1)(B) of the CWA. Implementing regulations for Section 301(b)(1)(B) are found at 40 CFR Part 133. The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. These technology-based effluent limits apply to all municipal wastewater treatment plants, and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD<sub>5</sub> and TSS. The requirements contained in the draft permit are necessary to prevent violations of applicable treatment standards.

The CNMI has adopted water quality criteria in January 1997 and amended on September 24, 2004, for waters of the Commonwealth. The requirements contained in the proposed permit are necessary to prevent violations of applicable water quality standards in Class A waters in Saipan Lagoon. Class A waters are protected for their recreational use and aesthetic enjoyment; other uses are allowed as long as they are compatible with the protection and propagation of fish, shellfish, and wildlife, and recreation in and on these waters.)

While the Sadog Tasi WWTP is not subject to pretreatment requirements contained in 40 CFR 403 (“General Pretreatment Regulations for Existing and New Sources of Pollution”) as it falls outside the definition of facilities subject to the requirements, the draft permit contains conditions that require the permittee to develop and implement source control and education programs to minimize the entrance of non-industrial toxic pollutants/pesticides and hazardous industrial wastes into the Sadog Tasi WWTP. In addition, the permittee must identify industrial sources discharging hazardous wastes into the collection system, and develop control mechanisms for industrial users to the system. These requirements are necessary to assure proper operation of all facilities and systems of treatment and control that are installed or used by the permittee to achieve compliance with the conditions of this permit [40 CFR 122.41(e)].

**VI. DISCHARGE LIMITATIONS**

**A. Federal Secondary Treatment Effluent Discharge Limitations**

The draft permit contains the following discharge limitations for biochemical oxygen demand, total suspended solids and priority toxic pollutants:

Discharge Limitations				
Discharge Parameter	Average Monthly	Average Weekly	Maximum Daily	Units
Flow <sup>1</sup>	-- <sup>2</sup>	n/a	-- <sup>2</sup>	GPD
Biochemical Oxygen Demand (5-day) <sup>3</sup>	30	45	n/a	mg/l
	1,201	1,801	n/a	lbs/day
Total Suspended Solids <sup>3</sup>	30	45	n/a	mg/l
	1,201	1,801	n/a	lbs/day
Priority Toxic Pollutants (excluding asbestos) <sup>4</sup>	-- <sup>2</sup>	n/a	-- <sup>2</sup>	µg/l

NOTES:

1. The average daily flow is 2.9 MGD for 2005. No 2006 data was available to EPA during this review. No flow limit is proposed but the monthly and daily maximum flows must be monitored and reported. The monitoring frequency is once/month.
2. Monitoring and reporting required. No limitation is set at this time.
3. The arithmetic means of both BOD<sub>5</sub> and TSS values, by concentration, for effluent samples collected over a calendar month shall not exceed 15% of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period.
4. Priority toxic pollutants (excluding asbestos) are listed in 40 CFR 131.36(b)(1). The permittee shall collect *24-hour composite samples* for metals, 2,3,7,8-TCDD(dioxin), pesticides, base-neutral extractables, and acid-extractables. The permittee shall collect *discrete samples* for cyanide, total phenolic compounds and volatile organics.

The proposed monthly average and weekly average discharge limitations for biochemical oxygen demand and total suspended solids (in mg/l and influent percent removal efficiency) are based on secondary treatment requirements contained in 40 CFR 133. The proposed discharge limitations for biochemical oxygen demand and total suspended solids (in pounds per day, lbs/day) are calculated using a plant design flow of 4.8 MGD and the following equation: lbs/day = 8.34 x C<sub>e</sub> x Q. "C<sub>e</sub>" is the effluent discharge limitation in mg/l and "Q" is the flow rate in MGD (where 8.34 is the standard

conversion factor for converting concentration limits to mass limits in the units provided). *U.S. EPA NPDES Permit Writers Manual*, (EPA-833-B-96-003, 1996).

**B. Determination of Reasonable Potential and Calculation of Water Quality-Based Effluent Limits**

In accordance with 40 CFR 122.44(d)(1), the need for effluent limits based on water quality criteria in applicable water quality standards must be evaluated. In a “reasonable potential” evaluation, projected receiving water values for pollutants—calculated based on statistically estimated maximum effluent values that can be adjusted for critical initial dilution—are compared directly to applicable water quality criteria. If a projected receiving water value for a pollutant exceeds an applicable water quality criterion, then “reasonable potential” has been established and water quality based effluent limits (WQBELs) for that pollutant are required in the permit.

Because the Sadog Tasi WWTP discharge is through a submerged outfall and diffuser system, initial dilution of the discharge with receiving waters is primarily controlled by the momentum and buoyancy of the freshwater effluent plume (i.e., discharge-induced mixing). A critical initial dilution value of 77:1 (expressed as parts seawater per part wastewater) has been calculated for the Saipan Lagoon outfall in 2001. The 2001 mixing Zone Analysis is attached herein as Appendix A to this report. The zone of initial dilution for the outfall is 49 feet as a radius around the outfall/diffuser structure. The mixing zone approval expired in 2006. The permittee submitted a new request for a new mixing zone approval with the same dilution value on April 24, 2007, as required under Section 9.3 of the CNMI WQS. To date, the new mixing zone has not been granted by DEQ; however, EPA anticipates the DEQ approval prior to issuing the final permit.

**C. Reasonable Potential**

In accordance with applicable water quality standards, critical initial dilution is not considered in the reasonable potential evaluation and the projected receiving water values for pollutants are calculated using the following modified steady-state mass balance equation:

$$C_r = C_e \times \text{reasonable potential multiplier factor}$$

In this equation, “ $C_e$ ” is the reported maximum effluent value (in mg/l,  $\mu$ g/l, or TU) that can be adjusted for uncertainty, due to small effluent sample size, using the statistical procedure outlined in Section 3.3.2 and Box 3.2 of the revised *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001, March 1991; TSD). When using this statistical procedure, EPA estimates that the CV of pollutants in the effluent is 0.6 and chooses reasonable potential multiplier factors based on the 99% confidence level and 99% probability basis shown in TSD Table 3-1. “ $C_b$ ” is the background seawater value. “ $C_r$ ” is the projected receiving water value that is compared directly to the applicable water quality criterion.

In the reasonable potential evaluation for Sadog Tasi WWTP, EPA evaluated the 2005-2006 discharge monitoring data for Sadog Tasi WWTP and found them to be inadequate to determine compliance with the permit limits. In the absence of available data, the proposed permit includes the reasonable potential used in the previous 2001 permit for the effluent to cause exceedances to the water quality criteria of enterococci, nitrate-nitrogen, total nitrogen, orthophosphate, total phosphorous, unionized ammonia, copper, silver, nickel and zinc. Total residual chlorine is a toxic pollutant under the CNMI WQS and must be met at the end-of-pipe. In accordance with 40 CFR 122.44(d)(1), water quality-based effluent limits are required in the permit.

#### **D. Water Quality-Based Effluent Limits (WQBEL)**

For pollutants in the effluent that are projected to exceed applicable water quality criteria, EPA uses the statistical calculations shown in TSD Tables 5-1, 5-2, and 5-3 to calculate water quality based effluent limits to protect water quality standards for aquatic life (acute criteria and chronic criteria) and human health, as described below and in TSD Section 5.4. Example calculations for enterococci, nickel and total residual chlorine are provided below. WQBEL calculations for other pollutants are found in attached Appendix B.

Because mixing zones for effluent enterococci, nitrate-nitrogen, total nitrogen, orthophosphate, total phosphorous, unionized ammonia, copper, silver, nickel and zinc, are expected to be authorized by the CNMI DEQ at the time the final permit is certified under CWA section 401 by DEQ, water quality-based effluent limits incorporating critical initial dilution are calculated for these pollutants. Total residual chlorine must be met at the end-of-pipe with no allowable mixing zones.

#### **WQBEL Calculation for Enterococci**

Acute, chronic, and human health wasteload allocations (WLAs) are calculated based on applicable CNMI water quality standards, using the following steady-state mass balance equation:

$$\begin{aligned} C_e &= C_r + D_c (C_r - C_b) \\ &= \text{WLA} \end{aligned}$$

“ $C_r$ ” is the water quality criterion (in mg/l,  $\mu\text{g/l}$ , CFU per 100 mL or TU). “ $D_c$ ” is the critical initial dilution value of 77:1 (or 77) and “ $C_b$ ” is the background seawater concentration (or 0).

Using the September 2004 CNMI water quality standards for enterococci in Class A waters, the 30-day geometric mean ( $C_{r \text{ chronic}}$ ) is 35 CFU per 100 mL (as CFU/100 mL) and the daily maximum ( $C_{r \text{ acute}}$ ) is 276 CFU/100 mL.



$$\begin{aligned} \text{Acute } C_e &= C_r + D_c (C_r \div C_b) &= & 276 + 77 (276 \div 0) \\ &= \text{acute WLA} &= & 21,528 \text{ CFU/100 mL} \\ \\ \text{Chronic } C_e &= C_r + D_c (C_r \div C_b) &= & 35 + 77 (35 \div 0) \\ &= \text{chronic WLA} &= & 2,730 \text{ CFU/100 mL} \end{aligned}$$

Following TSD Table 5-1 for acute water quality criteria protecting aquatic life, a value of 0.321 is used as the statistical multiplier for back-calculating the acute long-term average (LTA) when the acute wasteload allocation is established at the 99<sup>th</sup> percentile occurrence probability. EPA estimates that the CV of the pollutant in the effluent is 0.6.

$$\begin{aligned} \text{Acute LTA} &= \text{acute WLA} \times \text{acute WLA multiplier factor} \\ &= 21,528 \times 0.321 \\ &= 6,910.5 \text{ CFU/100 mL} \end{aligned}$$

Following TSD Table 5-2 for chronic water quality criteria protecting aquatic life, a value of 0.527 is used as the statistical multiplier for back-calculating the chronic long-term average when the chronic wasteload allocation is established at the 99<sup>th</sup> percentile occurrence probability and EPA estimates that the CV of the pollutant in the effluent is 0.6:

$$\begin{aligned} \text{Chronic LTA} &= \text{chronic WLA} \times \text{chronic WLA multiplier factor} \\ &= 2,730 \times 0.527 \\ &= 1,438.7 \text{ CFU/100 mL} \end{aligned}$$

Following TSD Section 5.4, the lowest of the acute or chronic long-term average is selected and used to calculate maximum daily and average monthly water quality-based effluent limits:

$$\begin{aligned} \text{Minimum LTA} &= \text{chronic LTA} \\ &= 1,438.7 \text{ CFU/100 mL} \end{aligned}$$

If the minimum long-term average is based on a water quality criterion protecting aquatic life, then the statistical procedure outlined in TSD Table 5-2 is used to calculate maximum daily and average monthly water quality based effluent limits (WQBELs). In this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6 and chooses the statistical multiplier factor of 3.11 to calculate a maximum daily water quality based effluent limit established at the 99<sup>th</sup> percentile occurrence probability:

$$\begin{aligned} \text{Maximum daily WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 1,438.7 \times 3.11 \\ &= \mathbf{4,474 \text{ CFU/100 mL for enterococci}} \end{aligned}$$

Continuing with this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6, assumes that the minimum number of effluent samples per month is four, and

chooses the statistical multiplier factor of “1.55” to calculate an average monthly water quality based effluent limit established at the 95<sup>th</sup> percentile occurrence probability:

$$\begin{aligned} \text{Average monthly WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 1,438.7 \text{ H} \times 1.55 \\ &= \mathbf{2,230 \text{ CFU/100 mL for enterococci}} \end{aligned}$$

**WOBEL Calculation for Nickel**

Acute, chronic, and human health wasteload allocations (WLAs) are calculated based on applicable water quality criteria—which consider critical initial dilution at the discretion of DEQ—using the following steady-state mass balance equation:

$$\begin{aligned} C_e &= C_r + D_c (C_r - C_b) \\ &= \text{WLA} \end{aligned}$$

“C<sub>r</sub>” is the water quality criterion. “D<sub>c</sub>” is the critical initial dilution value of 77:1 (or 77) and “C<sub>b</sub>” is the background seawater concentration (or 0).

Using the EPA’s 2004 National recommended water quality criteria for nickel (EPA-822-H-04-001), the saltwater acute criterion (C<sub>r acute</sub>) is 74 µg/l, the saltwater chronic criterion (C<sub>r chronic</sub>) is 8.2 µg/l, and the human health (organisms only) criterion (C<sub>r human</sub>) is 4,600 µg/l.

With the authorized mixing zone, the acute, chronic and human health wasteload allocations are calculated as follows:

$$\begin{aligned} \text{Acute } C_e &= C_{r \text{ acute}} + D_c (C_{r \text{ acute}} - C_b) &= 74 + 77 (74 - 0) \\ &= \text{Acute WLA} &= 5,772 \text{ } \mu\text{g/l} \\ \\ \text{Chronic } C_e &= C_{r \text{ chronic}} + D_c (C_{r \text{ chronic}} - C_b) &= 8.2 + 77 (8.2 - 0) \\ &= \text{Chronic WLA} &= 639.6 \text{ } \mu\text{g/l} \\ \\ \text{Human health } C_e &= C_{r \text{ human}} + D_c (C_{r \text{ human}} - C_b) &= 4,600 + 77 (4,600 - 0) \\ &= \text{Human health WLA} &= 358,800 \text{ } \mu\text{g/l} \end{aligned}$$

Following TSD Table 5-1 for acute water quality criteria protecting aquatic life, a value of 0.321 is used as the statistical multiplier for back-calculating the acute long-term average (LTA) when the acute wasteload allocation is established at the 99<sup>th</sup> percentile occurrence probability. EPA estimates that the CV of the pollutant in the effluent is 0.6.

$$\begin{aligned} \text{Acute LTA} &= \text{acute WLA} \times \text{acute WLA multiplier factor} \\ &= 5,772 \times 0.321 \\ &= 1,852.812 \text{ } \mu\text{g/l} \end{aligned}$$

Following TSD Table 5-2 for chronic water quality criteria protecting aquatic life, a value of 0.527 is used as the statistical multiplier for back-calculating the chronic long-term average when the chronic wasteload allocation is established at the 99<sup>th</sup> percentile occurrence probability and EPA estimates that the CV of the pollutant in the effluent is 0.6:

$$\begin{aligned}\text{Chronic LTA} &= \text{chronic WLA} \times \text{chronic WLA multiplier factor} \\ &= 639.6 \times 0.527 \\ &= 337.0692 \mu\text{g/l}\end{aligned}$$

Following TSD Section 5.4.4 for human health water quality criteria, the human health wasteload allocation is established as the human health long-term average:

$$\begin{aligned}\text{Human health LTA} &= \text{human health WLA} \\ &= 358,800 \mu\text{g/l}\end{aligned}$$

Following TSD Section 5.4, the lowest of the acute, chronic, or human health long-term averages is selected and used to calculate maximum daily and average monthly water quality based effluent limits:

$$\begin{aligned}\text{Minimum LTA} &= \text{chronic LTA} \\ &= 337.0692 \mu\text{g/l}\end{aligned}$$

If the minimum long-term average is based on a water quality criterion protecting aquatic life, then the statistical procedure outlined in TSD Table 5-2 is used to calculate maximum daily and average monthly water quality-based effluent limits (or WQBELs). In this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6 and chooses the statistical multiplier factor of 3.11 to calculate a maximum daily water quality based effluent limit established at the 99<sup>th</sup> percentile occurrence probability:

$$\begin{aligned}\text{Maximum daily WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 337.0692 \times 3.11 \\ &= 1,048.2852 \\ &= 1,048 \mu\text{g/l} \text{ or } \mathbf{1.05 \text{ mg/l for nickel}}\end{aligned}$$

Continuing with this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6, assumes that the minimum number of effluent samples per month is four, and chooses the statistical multiplier factor of "1.55" to calculate an average monthly water quality based effluent limit established at the 95<sup>th</sup> percentile occurrence probability:

$$\begin{aligned}\text{Average monthly WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 337.0692 \times 1.55 \\ &= 522.45726 \\ &= 522.5 \mu\text{g/l} \text{ or } \mathbf{0.52 \text{ mg/l for nickel}}\end{aligned}$$

*In the unlikely scenario that the minimum long-term average had been based on a water quality criterion protecting human health, then the procedure outlined in TSD Table 5-3 would be used to calculate maximum daily and average monthly water quality based effluent limits. In this procedure, the minimum long-term average for human health is set as the average monthly limit established at the 95<sup>th</sup> percentile occurrence probability:*

$$\begin{aligned} \text{Average monthly WQBEL} &= \text{minimum LTA} \\ &= 358,800 \mu\text{g/l} \end{aligned}$$

*Following this, EPA estimates that the CV of pollutants in the effluent is 0.6, assumes that the minimum number of effluent samples per month is four, and chooses the statistical multiplier factor of "2.01" to calculate a maximum daily limit established at the 99<sup>th</sup> percentile occurrence probability:*

$$\begin{aligned} \text{Maximum daily WQBEL} &= \text{average monthly WQBEL} \times \text{MDL/AML multiplier} \\ &= 358,800 \times 2.01 \\ &= 721,188 \mu\text{g/l} \end{aligned}$$

### WQBEL Calculation for Total Residual Chlorine

Under the CNMI WQS, EPA determined that no mixing zone would be authorized for chlorine. Therefore,

$$\begin{aligned} C_e &= C_r \\ &= \text{WLA} \end{aligned}$$

"C<sub>r</sub>" is the water quality criterion (in mg/l, μg/l, or TU).

Using the September 2004 CNMI water quality standards for TRC in Class A waters, the 30-day geometric mean (C<sub>r chronic</sub>) is 7.5 μg/l and the daily maximum (C<sub>r acute</sub>) is 13 μg/l.

$$\begin{aligned} \text{Acute } C_e &= 13 \mu\text{g/l} \\ &= \text{acute WLA} \end{aligned}$$

$$\begin{aligned} \text{Chronic } C_e &= 7.5 \mu\text{g/l} \\ &= \text{chronic WLA} \end{aligned}$$

Following TSD Table 5-1 for acute water quality criteria protecting aquatic life, a value of 0.321 is used as the statistical multiplier for back-calculating the acute long-term average (LTA) when the acute wasteload allocation is established at the 99<sup>th</sup> percentile occurrence probability. EPA estimates that the CV of the pollutant in the effluent is 0.6.

$$\begin{aligned} \text{Acute LTA} &= \text{acute WLA} \times \text{acute WLA multiplier factor} \\ &= 13 \times 0.321 \\ &= 4.2 \mu\text{g/l} \end{aligned}$$

Following TSD Table 5-2 for chronic water quality criteria protecting aquatic life, a value of 0.527 is used as the statistical multiplier for back-calculating the chronic long-term average when the chronic wasteload allocation is established at the 99<sup>th</sup> percentile occurrence probability and EPA estimates that the CV of the pollutant in the effluent is 0.6:

$$\begin{aligned}\text{Chronic LTA} &= \text{chronic WLA} \times \text{chronic WLA multiplier factor} \\ &= 7.5 \times 0.527 \\ &= 4.0 \mu\text{g/l}\end{aligned}$$

Following TSD Section 5.4, the lowest of the acute or chronic long-term average is selected and used to calculate maximum daily and average monthly water quality-based effluent limits:

$$\begin{aligned}\text{Minimum LTA} &= \text{chronic LTA} \\ &= 4.0 \mu\text{g/l}\end{aligned}$$

If the minimum long-term average is based on a water quality criterion protecting aquatic life, then the statistical procedure outlined in TSD Table 5-2 is used to calculate maximum daily and average monthly water quality based effluent limits (WQBELs). In this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6 and chooses the statistical multiplier factor of 3.11 to calculate a maximum daily water quality based effluent limit established at the 99<sup>th</sup> percentile occurrence probability:

$$\begin{aligned}\text{Maximum daily WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 4.0 \text{ H } 3.11 \\ &= \mathbf{12.44 \mu\text{g/l for TRC}}\end{aligned}$$

Continuing with this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6, assumes that the minimum number of effluent samples per month is four, and chooses the statistical multiplier factor of "1.55" to calculate an average monthly water quality based effluent limit established at the 95<sup>th</sup> percentile occurrence probability:

$$\begin{aligned}\text{Average monthly WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 4.0 \text{ H } 1.55 \\ &= \mathbf{6.2 \mu\text{g/l for TRC}}\end{aligned}$$

#### **E. Anti-Backsliding Requirement**

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR Section 122.44(l) require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. The 2001 permit did not apply the DEQ-approved mixing zones in the WQBEL calculations for some effluent limits. Effluent limitations in this proposed permit have been recalculated to properly apply the mixing zones. As a result, the nickel, copper, silver, and zinc

effluent limits are not as stringent as the effluent limits in the previous permit. EPA has determined that these effluent limits will not violate water quality standards and federal and territorial antidegradation provisions based on the following reasons:

- The Saipan Lagoon is not listed under section 303(d) of the CWA as an impaired waterbody for metals.
- These WQBELs for metals comply with EPA's antidegradation policy at 40 CFR 131.12 and the CNMI antidegradation policy in Part 3 of the CNMI WQS. These regulations require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.
- The permit will only be finalized with these limits if DEQ once more grants a mixing zone pursuant to the procedure established under Part 9 of the CNMI WQS.

#### **F. Toxicity Testing Requirement**

The draft permit proposes a “no acute toxicity” discharge limitation in 100 percent effluent where compliance is evaluated using a single-concentration toxicity test result (reported as pass/fail), rather than a multi-concentration test result (reported as a point estimate, e.g., LC<sub>50</sub>). While this approach does not yield information regarding the level of toxicity present in the diluted effluent, USEPA Region 9 believes that this approach provides a reasonable balance between the need for frequent compliance monitoring and cost savings resulting from the use of single-concentration rather than multi-concentration testing considering the fact that the approved testing facility may be located in Hawaii or even farther away. If toxicity (as defined) is detected, then additional multi-concentration testing may be recommended by USEPA Region 9. Due to the high level of total dissolved solids present in the Sadog Tasi WWTP discharge, the freshwater amphipod, *Hyaella azteca*, had been selected as the test species.

#### **VII. BIOSOLIDS REQUIREMENTS**

On February 19, 1993, the USEPA issued final regulations for the use and disposal of sewage biosolids (40 CFR 503). These regulations require that producers of sewage biosolids comply with certain reporting, handling, and disposal requirements. The CNMI has not been approved to implement this program. Therefore, USEPA Region 9 is the implementing agency. The draft permit contains biosolids/sludge management requirements consistent with 40 CFR 503.

The permittee shall submit a report to the EPA Biosolids Coordinator 60 days prior to disposal of biosolids. The report shall discuss the quantity of biosolids produced, the treatment applied to biosolids including process parameters, disposal methods, and, if land applied, analyses for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Zinc, and Selenium, and organic-N, ammonium-N, and nitrate-N,

all expressed in mg/kg biosolids on a 100% dry weight basis. The permittee shall comply with all standards for biosolids use and disposal at Section 405(d) of the CWA, and 40 CFR Parts 257, 258 and 503.

**VIII. THREATENED AND ENDANGERED SPECIES AND CRITICAL HABITAT**

***Background:***

The Endangered Species Act of 1973 (ESA) allocates authority to and administers requirements upon Federal agencies regarding threatened or endangered species of fish, wildlife, or plants and habitat of such species that have been designated as critical. Its implementing regulations at 50 CFR Part 402 require Federal agencies such as EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (“USFWS”) and/or the National Marine Fisheries Service (“NMFS”)(collectively “Services”), that any action authorized, funded or carried out by EPA is not likely to jeopardize the continued existence of any Federally-listed threatened or endangered species or adversely affect critical habitat of such species. [40 CFR 122.49(c)]. Since the issuance of an NPDES permit by EPA is a Federal action, consideration of a permitted discharge and its effect on any listed species is appropriate.

Implementing regulations for the ESA establish a process by which Federal agencies consult with one another to ensure that the concerns of both the USFWS and NMFS are addressed.

From the USFWS’s Threatened and Endangered Species System database, EPA found there are currently fourteen (14) federally-listed threatened (T) or endangered (E) species in the Northern Mariana Islands, as follows:

<i>Status</i>	<i>Species listed in this state and that occur in this state</i>
T	Bat, Mariana fruit (=Mariana flying fox) entire ( <i>Pteropus mariannus mariannus</i> )
E	Megapode, Micronesian ( <i>Megapodius laperouse</i> )
T	Sea turtle, green except where endangered ( <i>Chelonia mydas</i> )
E	Sea turtle, hawksbill ( <i>Eretmochelys imbricata</i> )
E	Sea turtle, leatherback ( <i>Dermochelys coriacea</i> )
T	Sea turtle, loggerhead ( <i>Caretta caretta</i> )
E	Warbler, nightingale reed (old world warbler) ( <i>Acrocephalus luscinia</i> )

E	White-eye, Rota bridled ( <i>Zosterops rotensis</i> )
E	Iagu, Hayun (=Guam), Tronkon guafi (Rota) ( <i>Serianthes nelsonii</i> )
E	<i>Nesogenes rotensis</i> (No common name)
E	<i>Osmoxylon mariannense</i> (No common name)
<b>Status</b>	<b>Listed species occurring in this state that are not listed in this state</b>
E	Crow, Mariana (=aga) ( <i>Corvus kubaryi</i> )
E	Moorhen, Mariana common ( <i>Gallinula chloropus guami</i> )
E	Swiftlet, Mariana gray ( <i>Aerodramus vanikorensis bartschi</i> )

In a response dated January 4, 2007 to EPA's request for information on proposed or listed species or critical habitat that may occur in or near the proposed action, the US FWS found no designated critical habitat in or near the proposed project area. However, there are wetland areas in the vicinity of the project area that may be occupied by the Mariana common moorhen (*Gallinula chloropus guami*), nightingale reed-warbler (*Acrocephalus luscini*) and the green sea turtle (*Chelonia mydas*). The two birds are listed as endangered species and the green sea turtle is listed as threatened under the ESA. EPA has forwarded a copy of the USFWS letter to the permittee in light of the USFWS's suggestion that the permittee contact the CNMI Division of Fish and Wildlife directly for more detailed information regarding potential impacts of the proposed action on local flora and fauna.

To date, EPA has not received a response to its April 6, 2007 request for information on proposed or listed species or critical habitat from NMFS.

**EPA's Finding:**

The proposed NPDES permit authorizes the discharge of treated wastewater in conformance with the federal secondary treatment regulations and contains provisions for monitoring conventional, toxic chemicals, and non-conventional pollutants in compliance with the CNMI Water Quality standards, to ensure an appropriate level of quality of water discharged by the facility. These standards are applied in the permit both as numeric and narrative limits. Therefore, since the standards themselves are designed to protect aquatic species, including threatened and endangered species, any discharge in compliance with these standards should not adversely impact any threatened and endangered species.

While EPA believes that discharge in compliance with this permit will have no effect on threatened or endangered, and is proposing to issue the permit at this time, EPA may



decide that changes to the permit may be warranted based on receipt of new information. EPA is requesting comments from the Services and will consider their comments in making the final permit decision. EPA will initiate consultation should new information reveal impacts not previously considered, should the activities be modified in a manner that impacts listed species in unanticipated ways, or should the activities affect a newly-listed species. A re-opener clause has been included should new information become available to indicate that the requirements of the permit need to be changed.

## **IX. MAGNUSON STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT**

### **Background:**

The Magnuson-Stevens Fishery Conservation and Management Act (“MSA”) is the primary law governing marine fisheries management in United States federal waters. The Act was first enacted in 1976, amended in 1996, and reauthorized with amendments in early 2007. To manage the fisheries and promote conservation, MSA created eight regional fishery councils. The 1996 amendments focused rebuilding overfished fisheries, protecting essential fish habitat (EFH), and reducing bycatch. The Magnuson-Stevens Fishery Conservation And Management Reauthorization Act Of 2006, signed into law in early 2007, mandates the use of annual catch limits and accountability measures to end overfishing, provides for widespread market-based fishery management through limited access programs, and calls for increased international cooperation. The Magnuson-Stevens Act requires that Federal agencies consult with NMFS on all actions, including permit issuance, undertaken by the agency which may adversely affect EFH.

### **EPA’s Finding:**

EPA Region 9 is in the process of requesting input about essential fish habitat from NMFS. The proposed permit requires compliance with CNMI water quality standards designed to be compatible with the protection and propagation of fish, shellfish and wildlife. EPA believes that the discharge in compliance with this permit will have no adverse effect on EFH, and is proposing to issue the permit at this time. EPA is, however, providing NMFS with a copy of the draft permit and fact sheet in order that NMFS may review and comment on EPA’s conclusion concerning the potential effects of the proposed discharges on EFH. PA may decide that changes to the permit may be warranted based on receipt of new information that is provided to it by any persons including the Services during the public notification process, and will consider their comments in making the final permit decision. A reopener clause has been included in the permit should new information become available to indicate that the requirements of the permit need to be modified, such as monitoring indicating that the discharge causes or contributes to excursions above water quality criteria or new information concerning total residual chlorine.

## **X. COASTAL ZONE MANAGEMENT ACT**

### **Background:**

On January 5, 2006, the National Oceanic and Atmospheric Administration (NOAA) published in the Federal Register the Final Rule revising certain sections of NOAA's Coastal Zone Management Act (CZMA) federal consistency regulations, 71 Fed. Reg. 787-831 (Jan. 5, 2006).

Federal consistency is the CZMA requirement (Section 307 of the CZMA) where federal agency activities that have reasonably foreseeable effects on any land or water use or natural resource of the coastal zone (also referred to as coastal uses or resources and coastal effects) must be consistent to the maximum extent practicable with the enforceable policies of a coastal state's federally approved coastal management program. Federal agency activities are activities and development projects performed by a federal agency, or a contractor for the benefit of a federal agency, including the issuance of permits, such as this NPDES permit.

In accordance with 15 CFR 930.33(a), federal agencies are required to determine which of their activities may affect any coastal use or resource of States with approved management programs. The lead state agency performs federal consistency reviews (usually the same agency that implements or coordinates CNMI's federally approved coastal management program). In CNMI, the lead agency is the Coastal Resource Management Office (CRMO).

According to the CRMO's consistency procedures, an applicant that seeks a Federal permit or license must submit the consistency certification to the CRMO. For more information, please refer to Section III of the "*Procedures Guide for Achieving Federal Consistency with the CNMI Coastal Resources Management Program*" (1987). If the CRMO objects to the consistency certification, the Federal agency (in this case, EPA) cannot issue the license or permit. On March 6, 2007, EPA informed the permittee CUC that it must work with CRMO to develop and submit a consistency certification in order to gain coverage under the proposed permit.

## **XI. MONITORING AND REPORTING PROGRAM**

The monitoring program in the draft permit requires effluent monitoring for conventional, non-conventional, and priority toxic pollutants. The permittee's pretreatment program, designed to minimize the addition of non-industrial toxic pollutants/pesticides and hazardous industrial wastes into the Sadog Tasi WWTP, is consistent with applicable permitting regulations at 40 CFR Part 122.41. Similarly the sludge/biosolids monitoring, recordkeeping, and reporting requirements are consistent with applicable requirements in 40 CFR Part 503. Consistent with Section 403(c) of the CWA and applicable water quality standards, the draft permit contains receiving water monitoring requirements.

The proposed permit requires discharge data obtained during the previous three months to be summarized on monthly discharge monitoring report (DMR) forms and reported quarterly. If there is no discharge for the month, report "C" in the No Discharge box on the DMR form for that month. These reports are due January 28, April 28, July 28, and October 28 of each year. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the offices of the EPA Regional Administrator and the CNMI Division of Environmental Quality, as follows:

U. S. Environmental Protection Agency, Region 9  
Pacific Islands Office, Mailcode: CED-6  
75 Hawthorne Street  
San Francisco, CA 94105

Division of Environmental Quality  
Commonwealth of the Northern Mariana Islands  
P.O. Box 501304  
Gualo Rai Center  
Saipan, MP 96950

## **XII. PERMIT REOPENER**

At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursions above water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. The proposed permit may be modified, in accordance with the requirements set forth at 40 CFR 122 and 124, to include conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any new EPA-approved CNMI water quality standards, address ESA-related issues, or new information concerning total residual chlorine.

## **XIII. INFORMATION AND COPYING**

The Administrative Record, which contains the draft NPDES permit, the fact sheet, comments received, and other relevant documents, is available for review and may be obtained by calling or writing to:

U.S. Environmental Protection Agency, Region 9  
CWA Standards and Permits Office (WTR-5)  
Attn: Linh Tran  
75 Hawthorne Street, CA 94105  
Telephone: (415) 972-3511

All comments or objections received within thirty (30) days from the date of the Public Notice, will be retained and considered in the formulation of the final determination regarding the permit issuance.

**XIV. ADMINISTRATIVE INFORMATION – PUBLIC NOTICE, PUBLIC COMMENTS AND REQUESTS FOR PUBLIC HEARINGS**

In accordance with 40 CFR 124.10, public notice shall be given by the USEPA Region 9 Water Division Director that a draft NPDES permit has been prepared by mailing a copy of the notice to the permit applicant and other Federal and State agencies, and through publication of a notice in a daily or weekly newspaper within the area affected by the facility. A copy of this public notice will be available on USEPA Region 9 website at <http://www.epa.gov/region09/water/npdes/pubnotices.html>. The public notice shall allow at least 30 days for public comment on the draft permit.

In accordance with 40 CFR 124.11 and 12, during the public comment period, any interested person may submit written comments on the draft permit, and may request a public hearing if no hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. In accordance with 40 CFR 124.13, all persons must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position within thirty (30) days from the date of the Public Notice. Comments may be submitted either in person or mailed to both addresses below:

U.S. Environmental Protection Agency, Region 9  
CWA Standards and Permits Office (WTR-5)  
Attn: Linh Tran  
75 Hawthorne Street  
San Francisco, CA 94105  
Telephone: (415) 972-3511

Division of Environmental Quality  
Commonwealth of the Northern Mariana Islands  
P.O. Box 501304  
Gualo Rai Center  
Saipan, MP 96950  
Telephone: (670) 664-8500

Interested persons may obtain further information, including copies of the draft permit, fact sheet/statement of basis, and the permit application, by contacting Linh Tran (WTR-5) at the U.S. EPA address, above. Copies of the administrative record (other than those which U.S. EPA maintains as confidential) are available for public inspection between 8:00 a.m. and 4:30 p.m., Monday through Friday (excluding federal holidays).

In accordance with 40 CFR 124.12, the U.S. EPA Director shall hold a public hearing when she finds, on the basis of requests, a significant degree of public interest in the draft permit. The Director may also hold a public hearing when, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of such hearing shall be given as specified in 40 CFR 124.10.