

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PROPOSED PERMIT FACT SHEET
March 2017

Permittee Name: U.S. Naval Base Guam

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NPDES Permit No.: GU0110019

I. STATUS OF PERMIT

The U.S. Navy (the “permittee”) has applied for the renewal of their National Pollutant Discharge Elimination System (NPDES) permit to authorize the discharge of treated effluent from Apra Harbor Wastewater Treatment Plant to Tipaleo Bay located in the Philippine Sea of the Pacific Ocean. The permittee requested and was granted a permit application extension on December 1, 2014 and, subsequently, submitted a completed application on May 28, 2015. EPA Region IX has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act, which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

The permittee is currently discharging under NPDES permit GU0110019 issued on April 8, 2010, effective June 1, 2010, and expired on May 30, 2015. Pursuant to 40 CFR 122.21, the terms of the existing permit are administratively extended until the issuance of a new permit.

This permittee has been classified as a major discharger.

II. GENERAL DESCRIPTION OF FACILITY

The permittee owns and operates a wastewater treatment facility located on the Apra Harbor U.S. Naval Base, on the Island of Guam, that collects domestic and nondomestic wastewaters from all of the main base of Naval Base Guam. Nondomestic wastewater sources include three bilge oily wastewater treatment units, a fuel reclamation unit, and a water treatment plant (NPDES Permit GU0020389).

The Apra Harbor WWTP is a secondary sewage treatment plant with rated design and peak capacities of 4.3 MGD and 6.0 MGD. Dry-weather influent averages 2.8 MGD. Two identical treatment trains provide pre-aeration, grit removal, primary sedimentation, trickling filter biotreatment, activated sludge solids contact, and secondary clarification. Each treatment train has a 4.3 MGD design capacity. The final effluent is disinfected and de-chlorinated prior to discharge through a combined outfall shared with the Guam Waterworks Authority's Agat-Santa Rita Wastewater Treatment Plant (permit GU0020222) and discharged to the ocean through the Tupalao Bay outfall. The outfall terminates at a diffuser located approximately 1,600 feet from shore, at a depth of 125 feet.

Waste activated sludge and gravity thickened primary sludge feed two anaerobic digesters. Digested sludge is centrifuged or dried in sludge drying beds. Grit and dewatered sludges are trucked off-site for landfill disposal.

III. DESCRIPTION OF RECEIVING WATER

The permittee discharges out a joint deep ocean outfall along with GWA's Agat-Santa Rita WWTP into Tupalao Bay of the Philippine Sea (13° 24' 48" N, 144° 38' 30" E). Discharge from Apra Harbor WWTP is regulated under NPDES permit GU0110019.

The Philippine Sea in the vicinity of the discharge is classified as Category M-2 ("Good") by the Guam Water Quality Standards (WQS). M-2 waters must be of sufficient quality to allow for the propagation and survival of marine organisms, particularly shellfish and other similarly harvested aquatic organisms, corals and other reef-related resources, and whole body contact recreation. Other important and intended uses include mariculture activities, aesthetic enjoyment, and related activities.

IV. DESCRIPTION OF DISCHARGE

A. Application Discharge Data

As part of the application for permit renewal, the permittee provided data from an analysis of the facility's treated wastewater discharge, shown in Table 1, and as an attachment in their Discharge Characterization Report.

Table 1. Application Discharge Data.

Parameter	Units	Discharge Data ⁽¹⁾	
		Maximum Daily Discharge	Average Daily Discharge
Flow	MGD	4.51	2.81
pH	Standard Units	7.05-7.98 (min-max)	
Biochemical Oxygen Demand, 5-day (BOD ₅)	mg/L	32.40	9.31

Parameter	Units	Discharge Data ⁽¹⁾	
		Maximum Daily Discharge	Average Daily Discharge
Total Suspended Solids (TSS)	mg/L	43.0	8.42
Ammonia (as N)	mg/L	.626	.29
Total Residual Chlorine	mg/L	5.1	.012
Fecal Coliform	CFU/100mL	1,360	17.4
Enterococci	CFU/100mL	1,590	17.1
Oil & Grease	mg/L	3.3	.03
Nickel	µg/L	34.2	18.48
Copper	µg/L	26.3	8.56
Aluminum	µg/L	234	64.5

(1) Based on permittee's NPDES renewal application.

B. Recent Discharge Monitoring Report (DMR) Data (2013-2016)

Table 2 provides a summary of effluent limitations and monitoring data based on the facility’s most recent 3 years of DMRs

Table 2. Discharge Monitoring Report Data for years 2013-2016.

Parameter	Units	Current Permit Effluent Limitations			Discharge Monitoring Data			Current Monitoring Requirements	
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Maximum Daily	Monitoring Frequency	Sample Type
Flow Rate	MGD	Monitoring Only	--	Monitoring Only	3.23	--	4.34	Continuous	Metered
Ammonia (as N)	mg/L	Monitoring Only	--	Monitoring Only	116	--	364	Monthly	Composite
Biochemical Oxygen Demand (5-day)	mg/L	30	45	--	17	24	--	Weekly	Composite
	Percent Removal	85% Removal (Minimum)			57% (Min)				
Fecal Coliform	MPN/100mL	200	400	--	57.9	205	--	Weekly	Discrete
Enterococci	MPN/100mL	35	--	104	110	--	519	Weekly	Discrete
Total Suspended Solids	mg/L	30	45	--	16	17	--	Weekly	Composite
	Percent Removal	85% Removal (Minimum)			62% (Min)				
Total Residual Chlorine	µg/L	7.5	--	12.3	4,350	--	5,100	Monthly	Discrete
Copper	µg/L	2.9	--	4.8	32.4	--	70.8	Monthly	Composite
Nickel	µg/L	8.2	--	13	23	--	34.4	Monthly	Composite
Aluminum	µg/L	120	--	200	70.8	--	234	Monthly	Composite
Chromium	µg/L	--	--	Monitoring Only	--	--	4.79	Annually	Composite
Lead	µg/L	--	--	Monitoring Only	--	--	5.28	Annually	Composite

Zinc	µg/L	--	--	Monitoring Only	--	--	104	Annually	Composite
Arsenic	µg/L	--	--	Monitoring Only	--	--	21.2	Annually	Composite
Mercury	µg/L	--	--	Monitoring Only	--	--	.111	Annually	Composite
2,3,7,8-TCDD (Dioxin)	µg/L	--	--	Monitoring Only	--	--	4.2	Annually	Composite
Chloroform	µg/L	--	--	Monitoring Only	--	--	.74	Annually	Composite
Dibromochloro methane	µg/L	--	--	Monitoring Only	--	--	23	Annually	Composite
Dichlorobrom methane	µg/L	--	--	Monitoring Only	--	--	2.7	Annually	Composite
Bromoform	µg/L	--	--	Monitoring Only	--	--	120	Annually	Composite
Oil & Grease	µg/L	10	--	15	NR	--	NR	Monthly	Discrete
Whole Effluent Toxicity	TUc	Monitoring Only	--	Monitoring Only	20.8	--	20.8	Annually	Composite
pH	Standard Units	Between 6.5 and 8.5 at all times			7.3 – 8.1 (min-max)			Weekly	Discrete

NR= Not Reported.

V. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit	Proposed Permit	Reason for change
Revised Limits	Fecal Coliform	Zinc, Lead, Arsenic, Mercury, Ammonia, Dioxin, Bromoform; Dilution for Copper and Aluminum	Limitation for fecal coliform removed while enterococci limitation retained consistent with TMDL. Zinc, lead, arsenic, mercury, ammonia, dioxin, and bromoform limitation incorporated based on reasonable potential analysis. Limitations for copper, nickel, and aluminum relaxed as a result of mixing zone study.
Monitoring	Weekly enterococci and fecal coliform monitoring	Monthly enterococci monitoring; monitoring for nutrients.	Monitoring frequency has been reduced for bacteria to what is necessary to determine compliance. Effluent monitoring is required for nitrogen and phosphorus to assess compliance with Guam WQS.
Ammonia Impact Ratio	Monitoring Only for Ammonia	Incorporation of Ammonia Impact Ratio (“AIR”) to track compliance with ammonia standard	Reasonable Potential demonstrated to exceed Water Quality Standards. EPA including AIR into new permits, where appropriate.
Sewer Discharge Certification Program	None	Requirements for a Sewer Discharge Certification Program.	Language builds on Federal Facilities Compliance Agreement.
Test for Significant Toxicity	NOEC Whole Effluent Toxicity testing	Test for Significant Toxicity	EPA R9 inclusion of TST in new permits.
E-reporting	None	E-reporting required	Consistent with E-reporting rule.
Receiving Water Monitoring	Monthly and Quarterly RW Monitoring Required	Quarterly Monitoring Required Only for Mixing Zone Reapplication	Permittee may retain receiving water monitoring data until reapplication or requested by EPA.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (e.g., “water quality-based effluent limits”). EPA has established the most stringent of applicable technology-based or water quality-based standards in the proposed permit, as described below.

A. Applicable Technology-Based Effluent Limitations

Publicly Owned Wastewater Treatment Systems (POTWs)

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the Clean Water Act. The minimum levels of effluent quality attainable by secondary treatment for Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), and pH, as defined in 40 CFR 133.102, are listed below. Mass limits, as required by 40 CFR 122.45(f), are included for BOD₅ and TSS.

BOD₅

30-day average – 30 mg/L
7-day average – 45 mg/L
Removal Efficiency – minimum of 85%

TSS

30-day average – 30 mg/L
7-day average – 45 mg/L
Removal efficiency – Minimum of 85%

pH

Instantaneous Measurement: 6.0 – 9.0 standard units (S.U.)

Therefore, effluent limits for BOD₅ and TSS are established in the permit as stated above.

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

Guam Water Quality Standards categorize the receiving water as M-2 (“Good”) and establish standards protective of relevant beneficial uses.

Tipaleo Bay is listed as impaired according to the CWA Section 303(d) List of Water Quality Limited Segments for PBBs in fish tissue. No TMDL has been developed for PCBs. In addition, Guams beaches are impaired for enterococcus bacteria. A TMDL for Guam’s southern beaches was finalized February 20, 2015 and include waste load allocations (“WLAs”) for all permitted

wastewater treatment facilities in Guam. For facilities discharging into M-2 waters, WLAs for Enterococcus are 35/100mL geometric mean and 104/100mL instantaneous maximum. The Margin of Safety discussion establishes an assumption of no mixing. Therefore, the WLA for enterococcus has been incorporated into the permit end-of-pipe.

2. Dilution in the Receiving Water

The permittee submitted a mixing zone request and conducted a Mixing Zone Environmental Impact Statement for the Tupalao Bay Joint Outfall. The 2015 Space and Naval Warfare Systems “SPAWAR” Study utilized CORMIX to estimate a mixing zone based on discharge geometry, effluent data, ambient conditions, discharge characteristics, and mixing zone requirements consistent with Guam WQS. The model incorporated 10th percentile current (3.5 cm/sec) with the maximum wet weather peak flow through the outfall (13.3 MGD). In accordance with Guam WQS, the calculating mixing zone was constrained to a cylinder that is 36 meters deep and 73.2 meters wide, centered on the discharge. The result of the study revealed a dilution factor of 39.2:1.

The dilution factor has not been considered in determining reasonable potential, however will be used for calculating effluent limitations for the Apra Harbor and Agat-Santa Rita discharges for pollutants where receiving water data is available. The findings of the dilution and resulting effluent limitations are subject to mixing zone and 401 certification approval by Guam EPA.

3. Existing Data on Toxic Pollutants

For pollutants with effluent data available through either the permit application or Discharge Monitoring Reports, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA’s *Technical Support Document for Water Quality-based Toxics Control* herein after referred to as EPA’s TSD (EPA 1991). These statistical procedures result in the calculation of the projected maximum effluent concentration based on monitoring data to account for effluent variability and a limited data set. The projected maximum effluent concentrations were estimated assuming a coefficient of variation of 0.6 and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values (sections 3.3.2 and 5.5.2 of EPA’s TSD). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

$$\text{Projected maximum concentration} = C_e \times \text{reasonable potential multiplier factor.}$$

Where, “C_e” is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

Table 3. Summary of Reasonable Potential Statistical Analysis (µg/L):

Parameter	Maximum Observed Concentration	n	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Ammonia (mg/L)	.626	>20	2.3	1.44	1.27	Y

Copper	70.8	>20	2.3	163	3.1	Y
Nickel	34.4	>20	2.3	79.1	8.2	Y
Zinc	104	4	4.7	489	86	Y
Aluminum	234	>20	2.3	538	200	Y
Chromium	4.79	4	4.7	22.5	50	N
Lead	5.28	4	4.7	24.8	8.1	Y
Arsenic	21.2	4	4.7	99.6	36	Y
Mercury	.111	4	4.7	.522	.025	Y
2,3,7,8-TCDD (Dioxin)	4.2	3	5.6	23.5	1.4E-8	Y
Chloroform	.74	3	5.6	4.14	470	N
Dibromochloro methane	23	3	5.6	129	None	N/A
Dichlorobromo methane	2.7	3	5.6	15.1	None	N/A
Bromoform	120	3	5.6	672	360	Y

N/A: Not Applicable; no applicable water quality criterion.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Flow

A limit for flow has been established for Apra Harbor WWTP to ensure the facility is operating in accordance with its designed capacity, as described in the permit application. The limitation for flow also serves as an alternative to mass-based limitations for all pollutants.

BOD₅ and TSS

Limits for BOD₅ and TSS are established for POTWs as described above and are incorporated into the permit.

pH

National standards and the Guam WQS establish standards for secondary treatment within 6.0 and 9.0 standard units. The Guam WQS also establish pH standards for marine waters within a range of 6.5 and 8.5 standard units. This permit retains previous pH limitations of 6.5 to 8.5.

Oil & Grease

Oil & Grease is a common pollutant in domestic wastewater. Guam WQS state that waters shall be free from oil, grease and scum which degrade water quality or use. Oil & Grease limitations of 10 and 15 mg/L average monthly and max daily are common in POTW permits on a “best professional judgment” basis and have been retained from the previous permit.

Enterococcus

Guam WQS establish numerical bacteria criteria for M-2 waters of 35 enterococci/100 ml based upon the geometric mean of five samples taken over a period of thirty days and 104 enterococci/100 ml instantaneous maximum. Additionally, a TMDL has been established for bacteria in the vicinity of the discharge. A WLA consistent with the criteria has been assigned to the discharger. The WLA has been established without consideration of a mixing zone. Therefore, the 35 and 104 cfu/100mL concentrations have been established as effluent limits in the permit.

Monitoring has been established for enterococcus sufficient to determine compliance with the effluent limit and WLA and consistent with similar GWA permits for Umatac, Baza Gardens and Agat-Santa Rita. Additional beach monitoring is conducted by Guam EPA to assess cumulative impacts from all sources on Guam beaches and receiving waters. Therefore, effluent bacteria monitoring frequency has been relaxed from weekly to monthly.

Chlorine

The Guam WQS establish numeric criteria for total residual chlorine. Data received through the application and discharge monitoring reports indicate a reasonable potential to discharge chlorine at levels that exceed water quality standards. Additionally, because the permittee uses chlorine to disinfect their wastewater, chlorine residual is likely to be present in the effluent. Therefore, effluent limitations for total residual chlorine have been retained from the previous permit.

Ammonia

The Guam WQS establish numeric criteria for ammonia which are pH-dependent. Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for ammonia. Therefore, EPA is establishing an ammonia-N effluent limit using the ammonia impact ratio (“AIR”) and quarterly monitoring and reporting requirements for ammonia concentrations in the effluent.

The AIR is calculated as the ratio of the ammonia value in the effluent and the applicable ammonia limit. The limit is calculated by multiplying the applicable standard by the dilution factor (39.2). Ambient monitoring revealed non-detectable levels of ammonia in the ambient water, therefore the full dilution factor is applied when calculating the limit. The GEPA WQS contain ammonia criteria which are pH-dependent. Therefore, pH and ammonia sampling must be concurrent. EPA is using the water quality criterion from the chronic tables in section 5103(C)(3), “Nutrients,” because the chronic criterion is most protective of water quality. See Attachment E of the permit for a sample log to help calculate and record the AIR values and attachment F for calculations for the effluent limit.

An AIR value of one (1.0) is the enforceable effluent limit. The permittee also must monitor and report ammonia effluent values in addition to the AIR value. AIR provides more flexibility than a specific, fixed effluent concentration and is protective of water quality standards since the value (1.0) is set at the water quality standard, with consideration of dilution. If the reported value exceeds 1.0, then the effluent ammonia-N concentration exceeded the ammonia water quality criterion.

Copper, Nickel, and Aluminum

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for copper, nickel, and aluminum. New limits based on a dilution factor of 39.2 and mean receiving water values based on data compiled as part of the SPAWAR mixing zone study for monitoring points TB-3 through TB-7 was calculated for aluminum. For copper and nickel, the permittee claimed that the data reported for receiving water monitoring in the mixing zone study and as part of the DMRs was inaccurate due a faulty Inductively Coupled Plasma detector. The permittee provided new data with split samples conducted directly by SPAWAR between 2011 and 2012 for copper and nickel, as well as duplicative testing on copper and nickel in ambient waters at the five foot depth profile between 2014 and 2016. The 2014 to 2016 samples confirmed lower levels of copper and nickel in the ambient water, therefore EPA is using the more conservative SPAWAR split samples data to propose limitations for copper and nickel.

Table 4. Limit calculation for Copper, Nickel and Aluminum

Pollutant	Standard	Mean Ambient Concentration	Dilution Factor	Limit
Copper	3.1	.33	39.2	111
Nickel	8.2	.56	39.2	307
Aluminum	200	16.5	39.2	7,390

In order to be adequately protective, limits for copper, nickel, and aluminum have been applied as maximum daily.

Zinc, Lead, Arsenic, Mercury, Dioxin, and Bromoform

The Guam WQS establish numeric criteria for zinc, lead, arsenic, mercury, dioxin, and bromoform. Data received through the submission of discharge monitoring reports indicate that the permittee has a reasonable potential to exceed the established criteria for these pollutants. No receiving water data for zinc, lead, arsenic, mercury, dioxin, or bromoform were included in the SPAWAR study, therefore a mixing zone may not be calculated for these pollutants. Limitations have therefore been established consistent with the Guam WQS end-of-pipe.

Whole Effluent Toxicity

Whole effluent toxicity limitations have been established in this permit to ensure the discharge is not toxic to local aquatic life, including endangered species. The calculated permit limitation incorporates the proposed mixing zone. The permittee is required to use EPA’s Test for Significant Toxicity statistical method.

Nitrate-nitrogen and Orthophosphate

The Guam WQS establish numeric criteria for nitrate-nitrogen and orthophosphate. The permittee has not previously monitoring for nutrients, therefore no data exist to establish reasonable potential. The permit incorporates monitoring for these two pollutants.

D. Anti-Backsliding

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute.

The permit retains limitations for all pollutants with the following exceptions:

-The permit removes limitations for fecal coliform on the basis of establishing limitations for enterococci consistent with the recently-adopted bacteria TMDL. Limitations for fecal coliform are redundant to limitations for enterococci and are not necessary under the Guam WQS. Fecal coliform limitations have been removed consistent with 40 CFR 122.44(l)(2)(i)(B)(2)

-The permit establishes less stringent limitations for copper, nickel, and aluminum on the basis of new information indicating the presence of a mixing zone and assimilative capacity [40 CFR 122.44(l)(2)(i)(B)(1)].

-The permit removes mass-based limitations as they are redundant to the flow and concentration-based limitations consistent with 40 CFR 122.44(l)(2)(i)(B)(2)

E. Antidegradation Policy

EPA's antidegradation policy at 40 CFR 131.12 and Section 5101(B) of the Guam WQS require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does allow for relaxed limitations as a result of a SPAWAR study. Along with the study, NAVFAC Marianas submitted a Mixing Zone EIS, which includes an antidegradation analysis. The analysis is consistent with Section 5101(B) of the Guam WQS and concludes that because treatment will only improve at the two facilities, water quality will not be degraded. The full analysis is available upon request.

Therefore, EPA believes the discharge will not degrade water quality.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

Guam WQS contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit. All monitoring data shall be reported on monthly DMR forms and submitted quarterly as specified in the proposed permit.

B. Priority Toxic Pollutants Scan

A Priority Toxic Pollutants scan shall be conducted during the fourth year of the five-year permit term to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit or by EPA. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants.

C. Whole Effluent Toxicity Testing

The permit establishes tests for chronic toxicity to ensure the discharge will not have an adverse effect on marine biota. Chronic toxicity testing evaluates reduced growth/reproduction using the Test of Significant Toxicity. Limits have been established with consideration of a mixing zone.

IX. SPECIAL CONDITIONS

A. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR Part 503 are incorporated into the permit.

B. Sewer Discharge Certification Program

Requirements for the Sewer Discharge Certification Program build on the permittee's Federal Facilities Compliance Agreement with EPA. The conditions are established to ensure non-domestic wastewater dischargers do not contribute to effluent violations at the facility.

C. Development of an Initial Investigation TRE Workplan for Whole Effluent Toxicity

In the event effluent toxicity is triggered from WET test results, the permit requires the permittee to develop and implement a Toxics Reduction Evaluation (TRE) Workplan after a "fail" test result. The draft permit also requires additional toxicity testing if a chronic toxicity monitoring trigger is exceeded. The permittee should also have an Initial Investigation TRE Workplan (1-2 pages) for chronic toxicity available for to EPA or Guam EPA to review upon request.

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

The following species are listed as endangered or threatened in Guam by the Pacific Islands Fish and Wildlife Services (“FWS”) Office:

Mammals:

- Little Mariana Fruit Bat (*Pteropus tokudae*)
- Mariana Fruit Bat (*Pteropus mariannus*)

Birds:

- Mariana Crow (aga) (*Corvus kubaryi*)
- Guam Micronesian Kingfisher (*Halcyon cinnamomina cinnamomina*)
- Mariana Common Moorhen (*Gallinula chloropus guami*)
- Rail, Guam except Rota (*Rallus owstoni*)
- Mariana Gray Swiftlet (*Aerodramus vanikornsis bartschi*)
- Birdled White-eye (*Zosterops conspicillatus conspicillatus*)
- Micronesian Megapode (*Megapodius laperouse*)
- Nightingale Reed Warbler (*Acrocephalus luscini*)

Sea Turtles:

- Green Sea Turtle (*Chelonia mydas*)
- Hawksbill Sea Turtle (*Eretmochelys imbricata*)

Plants:

- Iagu, Hayun (*Serianthes nelsonii*)

In addition, the National Marine Fisheries Service (“NMFS”) provided a list of threatened and endangered species in Guam as of January 2015. The list includes:

Marine Mammals:

- Blue Whale (*Balaenoptera musculus*)
- Fin Whale (*Balaenoptera physcalus*)
- Humpback Whale (*Megaptera novaeangliae*)
- Sei Whale (*Balaenoptera borealis*)
- Sperm Whale (*Physeter macrocephalus*)
- Dugong (*Dugong dugon*)

Sea Turtles:

- Green Turtle (*Chelonia mydas*)
- Hawksbill Turtle (*Eretmochelys imbricata*)
- Leatherback Turtle (*Caretta caretta*)

-Olive Ridley Turtle (*Lepidochelys olivacea*)

Fish:

-Scalloped Hammerhead Shark (*Sphyrna lewini*)

Corals:

-*Seriatopora aculeate*

-*Acropora globiceps*

-*Acropora retusa*

Effluent from the facility is discharged 1,600 feet offshore at a depth of 125 feet to Tipaleo Bay of the Philippine Sea and is therefore expected to have no effect on terrestrial or aquatic freshwater species.

The effluent discharged from this facility is characterized as secondary-treated, disinfected sanitary wastewater and may discharge up to 6.0 million gallons in a single day. The permit was written to comply with all applicable water quality standards, established to be protective of all beneficial uses, including propagation and survival of marine organisms. Additional information was considered for each of the following species:

Green, Hawksbill, Leatherback and Olive Ridley Sea Turtle:

Although the four species of sea turtles have a varying degree of presence in Guam, none have established nesting or critical habitat on the island. Primary habitat for sea turtles include beaches for nesting, open ocean convergence zones, and coastal areas for benthic feeding. Based on a review of recovery plans, however, EPA is not aware of any scientific information or studies documenting negative effects on sea turtles from these types of ocean discharges. EPA has therefore determined that the listed sea turtle species have no nexus with the ocean discharge beyond speculative incidental contact.

Blue, Fin, Humpback, Sei, and Sperm Whales and Dugongs

There have been an extremely limited number of sightings of marine mammals and no critical habitat identified off the coasts of Guam. EPA is also not aware of any scientific information or studies documenting negative effects on marine mammals from these types of ocean discharges. EPA has therefore determined that the listed marine mammals have no nexus with the ocean discharge beyond speculative incidental contact.

Scalloped Hammerhead Shark

The largest threats to scalloped hammerhead sharks are targeted fisheries, shark fin trade, and bycatch. Critical habitat has not been identified around Guam. EPA is also not aware of any scientific information or studies documenting negative effects on scalloped hammerhead sharks from these types of ocean discharges. EPA has therefore determined that the scalloped hammerhead shark has no nexus with the ocean discharge beyond speculative incidental contact.

***Seriatopora aculeate, Acropora globiceps, and Acropora retusa* (Corals)**

Of the three species of coral, only *Seriatopora aculeate* has a listed habitat depth greater than 10 meters. *Seriatopora aculeate* has a listed depth range of up to 40 meters. The outfall for the discharge is at 125 feet (about 38 meters). The 2011 NMFS Status Review Report issued prior to listing indicated that none of the proposed species is exclusive to Guam and concluded that none of the land-based pollution sources, including treated wastewater discharges, are unlikely to produce extinction at a global scale. A 2008 Guam Coastal Management Report entitled “Status of the Coral Reef Ecosystem of Guam” additionally found no evidence that sewage discharges from permitted outfalls are having discernable effects on corals in Guam.

Top threats to corals include ocean warming, ocean acidification, dredging, coastal development, coastal point source pollution, agricultural and land use practices, disease, predation, reef fishing, aquarium trade, physical damage from boats and anchors, marine debris, and aquatic invasive species. In particular, *Seriatopora aculeate* is most susceptible to ocean warming, disease, acidification, sedimentation, nutrients, predation, and collection and trade. The proposed permit includes limitations for sediment in the form of total suspended solids. While the discharge has not demonstrated a reasonable potential for violating water quality standards for nutrients, monitoring is required for nitrates and orthophosphate. EPA has therefore determined the outfall may affect, but is not likely to adversely affect threatened corals in the vicinity of the outfall.

In consideration of the above, EPA believed that the proposed discharge is not likely to affect endangered species in Guam.

EPA provided FWS and NMFS with copies of this fact sheet and the draft permit for review and did not receive comments.

B. Impact to Coastal Zones

The Coastal Zone Management Act (CZMA) requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The permittee has made a negative determination for the discharged associated with NPDES permit which was concurred with by the Guam Bureau of Statistics and Plans consistent with the policies of the Guam Coastal Zone Management Program on March 3, 2017.

C. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat (EFH).

The proposed permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses.

Therefore, EPA has determined that the proposed permit will not adversely affect essential fish habitat.

D. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR §800.3(a)(1), EPA is making a determination that issuing this proposed NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR 124.10)

Notice of the draft permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

C. Public Hearing (40 CFR 124.12(c))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

D. Water Quality Certification Requirements (40 CFR 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, EPA is requesting certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law.

Guam EPA issued a conditional 401 certification for the discharge on January 20, 2017. All 401 certification requirements are included as permit conditions by reference.

XIII. CONTACT INFORMATION

Comments, submittals, and additional information relating to this proposal may be directed to:

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Marincola.JamesPaul@epa.gov

EPA Region IX
75 Hawthorne Street (WTR 2-3)
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XIV. REFERENCES

- EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Office of Water, EPA. EPA/505/2-90-001.
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- EPA. 2002a. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms - Fifth Edition*. Office of Water, EPA. EPA-821-R-02-012.
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