

US EPA ARCHIVE DOCUMENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
FACT SHEET

Permittee and Mailing Address: Guam Shipyard
P.O. Box 13010 (Naval Activities)
Santa Rita, GU 96915

Permitted Facility and Address: Guam Shipyard
Apra Harbor Naval Complex
Santa Rita, GU 96915

Contact Person: Mr. Keith Carter
Manager
(671) 888-0100
carter@guamshipyard.net

NPDES Permit No.: GU0020362

PART I - STATUS OF PERMIT

Guam Shipyard (hereinafter, the Discharger) has applied for a National Pollutant Discharge Elimination System (NPDES) permit pursuant to U.S. Environmental Protection Agency (EPA) regulations set forth in Title 40, Code of Federal Regulations (CFR), Section 122.21, for the discharge of storm water, wash water, and non-contact cooling water from the floating dry dock facility (AFDB-8) to Apra Harbor in Guam. These regulations require any person who discharges or proposes to discharge pollutants from a point source into waters of the U.S. to submit a complete application for a NPDES permit, including renewal of a permit. The facility was previously owned and operated by the U.S. Navy under a permit issued on February 12, 1991. In October 1997, the facility and permit were transferred to Guam Shipyard. The permittee is currently discharging to Apra Harbor under NPDES Permit No. GU0020362, which became effective on July 20, 2002, and expired on July 19, 2007. In accordance with 40 CFR 122.21(e), on February 13, 2007, the permittee submitted an application for renewal of its NPDES permit. Additional application information was requested by EPA, and received on January 27, 2009, May 21, 2009, and June 24, 2009.

PART II - DESCRIPTION OF FACILITY

The permittee operates the Guam Shipyard (the facility) located in the Apra Harbor Complex in the Territory of Guam. The AFDB-8 dry dock is located at the facility to primarily provide ship repair and maintenance services to the U.S. Navy. The dry dock is 883 feet long and 180 feet wide, with a lifting capacity of 40,000 tons. On-site operations on the dry dock consist of overhaul, repair and alteration work on a variety of small, medium to large sized Department of Defense and private commercial vessels. Normal shipyard activities such as abrasive blasting, pressure washing, application and removal of marine surface coat materials, hydrostatic testing,

metal work, electrical work, mechanical work, material storage, and other related industrial activities occur during regular operations.

Shore side activities are covered under the multi-sector general storm water permit, and are not addressed in this permit.

PART III - DESCRIPTION OF DISCHARGE AND RECEIVING WATER

A. Discharge.

During facility operations, the permittee discharges to Apra Harbor at the discharge points summarized in Table 1. The facility is permitted to discharge storm water runoff and unit-in-dock wash water through Outfall Serial Nos. 001 to 004, 009, and 010; non-contact cooling water through Outfall Serial Nos. 007 and 008; and fire protection water through Outfall Serial No. 011. Outfall Serial No. 011 has been revised in the proposed permit from the current permit from a discharge location for non-contact cooling water to a discharge location for fire protection pressure relief water, as discussed in section III.A.3 of this fact sheet.

Table 1. Summary of Discharge Points for the Guam Shipyard Facility.

| Outfall Number | General Type of Waste Discharged | Outfall Latitude | Outfall Longitude | Receiving Water |
|----------------|---|------------------|-------------------|-----------------|
| 001-004 | Storm Water, Unit-in-Dock Wash Water | 13°26'30"N | 144°39'24"E | Apra Harbor |
| 007-008 | Storm Water, Unit-in-Dock Wash Water, Non-Contact Cooling water | 13°26'30"N | 144°39'24"E | Apra Harbor |
| 009-010 | Storm Water, Unit-in-Dock Wash Water | 13°26'30"N | 144°39'24"E | Apra Harbor |
| 011 | Fire Protection Pressure Relief Water | 13°26'30"N | 144°39'24"E | Apra Harbor |

In addition to the discharges described above, dry dock ballast water is discharged through multiple underwater ports in the hull of the dry dock, and pollutants are continuously released from the cathodic protection anodes attached to the hull of the dry dock in to Apra Harbor.

1. Storm water and Unit-In-Dock Wash Water.

The current permit addresses the discharge of unit-in-dock wash water and storm water through Outfall Serial Nos. 001 through 010 to Apra Harbor. A summary of the effluent limitations established in the existing NPDES permit for unit-in-dock wash water and storm water are summarized in Table 2.

Table 2. Effluent Limitations for the Discharge of Unit-in-Dock Wash Water and Storm Water from Serial Outfall Serial Nos. 001 through 010.

| Parameter | Units | Effluent Limitations | | |
|-------------------------------------|----------|----------------------|---------------|-------|
| | | Average Monthly | Daily Maximum | Other |
| Temperature | °C | -- | -- | (1) |
| pH | s.u. | -- | -- | (2) |
| Total Suspended Solids | mg/L | 30 | 60 | (3) |
| Turbidity | NTU | -- | -- | (4) |
| Coliform Bacteria | #/100 mL | 70 | 400 | -- |
| Oil and Grease | mg/L | 10 | 15 | -- |
| Orthophosphate (PO ₄ -P) | mg/L | 0.05 | -- | -- |
| Nitrate (NO ₃ -N) | mg/L | 0.20 | -- | -- |
| Chromium (VI) | µg/L | -- | 1,100 | -- |
| Copper | µg/L | 3.1 | 4.8 | -- |
| Lead | µg/L | 8.1 | 210 | -- |
| Zinc | µg/L | 86 | 95 | -- |
| Tributyltin | µg/L | 0.010 | 0.356 | -- |

- (1) Both the effluent and ambient water shall be sampled and reported. Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural conditions.
- (2) The effluent shall be between 7.0 and 9.0 s.u. Both the effluent and ambient water shall be sampled and reported. Variations of more than 0.5 s.u. from ambient conditions shall not be allowed unless due to natural conditions.
- (3) Both the effluent and ambient water shall be sampled and reported. Variations of more than 10 percent from ambient conditions shall not be allowed unless due to natural conditions.
- (4) Both the effluent and ambient water shall be sampled and reported. Variations of more than 1.0 NTU from ambient conditions shall not be allowed unless due to natural conditions.

Seven quarters of discharge monitoring report (DMR) data for unit-in-dock and storm water from October 2005 through January 2008 were available for review during the permitting process. Effluent limitation exceedances were identified during the permitting process and are summarized in Table 3.

Table 3. Effluent Limitation Exceedances for Unit-in-Dock Wash Water and Storm Water.

| Parameter | Date | Effluent Limitation | Effluent Result | Ambient Result | Variation |
|------------------------|--------------|-------------------------------|-----------------|----------------|-----------|
| Copper | October 2005 | 3.1 µg/L (Average Monthly) | 3.9 µg/L | -- | -- |
| Total Suspended Solids | January 2006 | (1) | 14 mg/L | 5 mg/L | 180% |
| Total Suspended Solids | July 2006 | (1) | 4 mg/L | 3 mg/L | 33% |
| Temperature | April 2007 | (2) | 26.5°C | 25.2°C | 1.3°C |
| Temperature | July 2007 | (2) | 26.9°C | 25.6°C | 1.3°C |
| Total Suspended Solids | July 2007 | (1) | 27 mg/L | 18 mg/L | 50% |

(1) Both the effluent and ambient water shall be sampled and reported. Variations of more than 10 percent from ambient conditions shall not be allowed unless due to natural conditions.

(2) Both the effluent and ambient water shall be sampled and reported. Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural conditions.

The Discharger has requested to continue the discharge of unit-in-dock wash water and storm water through Outfall Serial Nos. 001 through 004, and 007 through 010.

Activities expected to occur on the dry dock that are potential sources of pollutants to unit-in-dock wash water and storm water include abrasive blasting; hydroblasting; pressure washing; sanding; painting; electrical work; mechanical work; metal work; short-term material storage (paints, lubricants, solvents, zinc anodes, etc.); heavy equipment operations; and other industrial activities.

Abrasive blasting involves removing sea growth and paints from ship surfaces to prepare them for resurfacing. By-products of this process include spent abrasive, rust, scale, and paint particles. During these processes, a variety of pollutants (including copper, lead, zinc, and tributyltin) may be released into the environment and be discharged to waters through direct deposition and/or surface runoff.

Hydroblasting and pressure washing uses water to remove sea growth and surface materials from ship surfaces. This process results in the production of wash water, which may contain rust, scale, paint particles, and associated pollutants. These pollutants have the potential to contaminate surface runoff or contaminate the receiving water through direct deposition.

Coating operations involve resurfacing ship surfaces with paints and other materials. Products typically used include anti-corrosives to prevent rust and anti-foulants to prevent sea growth. These materials contain a variety of pollutants including copper, lead, zinc, and tributyltin. Like abrasive blasting and pressure washing, these pollutants enter waters via direct deposition and/or surface runoff. Best management practices (BMPs) are expected to minimize the exposure of unit-in-dock wash water and storm

water to potential pollutants. Additional BMPs will also be implemented to minimize direct deposition into the receiving water.

Electrical work, sanding, mechanical work, metal work, heavy equipment operations, and short-term material storage are also potential pollutant sources for petroleum products, metals, debris, and other pollutants through surface runoff and direct deposition. BMPs shall be implemented to minimize or eliminate the discharge of these pollutants into the receiving water.

2. Non-Contact Cooling Water.

The current permit established numeric effluent limitations for the discharge of non-contact cooling water from Outfall Serial No. 011. A summary of the numeric effluent limitations are summarized in Table 4.

Table 4. Effluent Limitations for the Discharge of Non-contact Cooling Water from Outfall Serial No. 011.

| Parameter | Units | Effluent Limitations | | |
|-------------------------------------|----------|----------------------|---------------|-------|
| | | Average Monthly | Daily Maximum | Other |
| Temperature | °C | -- | -- | (1) |
| pH | s.u. | -- | -- | (2) |
| Total Suspended Solids | mg/L | 30 | 60 | (3) |
| Turbidity | NTU | -- | -- | (4) |
| Coliform Bacteria | #/100 mL | 70 | 400 | -- |
| Oil and Grease | mg/L | 10 | 15 | -- |
| Orthophosphate (PO ₄ -P) | mg/L | 0.05 | -- | -- |
| Nitrate (NO ₃ -N) | mg/L | 0.20 | -- | -- |

- (1) Both the effluent and ambient water shall be sampled and reported. Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural conditions.
- (2) The effluent shall be between 7.0 and 9.0 s.u. Both the effluent and ambient water shall be sampled and reported. Variations of more than 0.5 s.u. from ambient conditions shall not be allowed unless due to natural conditions.
- (3) Both the effluent and ambient water shall be sampled and reported. Variations of more than 10 percent from ambient conditions shall not be allowed unless due to natural conditions.
- (4) Both the effluent and ambient water shall be sampled and reported. Variations of more than 1.0 NTU from ambient conditions shall not be allowed unless due to natural conditions.

Part A.1 of the current permit prohibited the discharge of non-contact cooling water from Outfall Serial Nos. 001 through 010. Based on a review of the Discharger's submitted DMRs, the Discharger reported non-contact cooling water discharge from Outfall Serial Nos. 007 and 008 during the term of the 2001 reissuance of Permit No. GU0020362. In January 2005 an emergency repair of a military submarine reportedly required that the discharge of non-contact cooling water be discharged through Outfall Serial Nos. 007 and 008. Guam Shipyard contacted the Guam Environmental Protection Agency (GEPA) and requested permission to discharge non-contact cooling water through Outfall Serial Nos. 007 and 008. On June 6, 2005 the Discharger submitted a letter to GEPA stating, "Guam

Shipyard will be making minor modifications to NPDES Permit [No.] GU0020362. These minor modifications are required to accommodate future submarine docking.” The permit was not formally revised by EPA Region 9, the permitting authority. The Discharger has incorrectly assumed, since June 2005, that they have been authorized to discharge vessel non-contact cooling water through Outfall Serial Nos. 007 and 008 and has been operating as such.

Seven quarters of DMR data for vessel non-contact cooling water from January 2006 through January 2008 were available for review during the permitting process. Effluent limitation exceedances were identified during the permitting process and are summarized in Table 5.

Table 5. Effluent Limitation Exceedances for Non-Contact Cooling Water.

| Parameter | Date | Effluent Limitation | Effluent Result | Ambient Result | Variation |
|------------------------|--------------|---------------------|-----------------|----------------|-----------|
| pH | January 2006 | (1) | 7.1 s.u. | 8.23 s.u. | 1.1 s.u. |
| Temperature | April 2007 | (2) | 26.5°C | 25.2°C | 1.3°C |
| Temperature | July 2007 | (2) | 26.9°C | 25.6°C | 1.3°C |
| Total Suspended Solids | July 2007 | (3) | 27 mg/L | 18 mg/L | 50% |

- (1) Variations of more than 0.5 s.u. from ambient conditions shall not be allowed unless due to natural conditions.
- (2) Both the effluent and ambient water shall be sampled and reported. Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural conditions.
- (3) Both the effluent and ambient water shall be sampled and reported. Variations of more than 10 percent from ambient conditions shall not be allowed unless due to natural conditions.

The Discharger has not re-applied for the discharge of non-contact cooling water for air conditioning units, compressors, and the emergency diesel generator through Outfall Serial No. 011. In a May 15, 2009 response to a request for additional information, the Discharger states, “There seems to be some confusion on the current permit fact sheet with the air conditioning units. There is only one 12,000 BTU window air conditioning unit in the control house. This does not discharge any non-contact cooling water. There is also one emergency diesel generator... This diesel generator has a closed loop type cooling system. As such there is no discharge of non-contact cooling water.”

Based on the Discharger’s response, the permitted discharge of non-contact cooling water from air conditioning units, compressors, and the emergency diesel generator are not carried over and Outfall Serial No. 011 for the discharge of non-contact cooling water is discontinued. It should be noted that Outfall Serial No. 011 has been re-established as a discharge point for pressure relief water from the fire protection system, as discussed in section III.A.3 of this fact sheet.

The Discharger has applied for the discharge of up to 1.08 mgd of non-contact cooling water from vessels through Outfall Serial Nos. 001 through 004 and 007 through 010 to Apra Harbor. As discussed previously, since June 2005 the Discharger has been

discharging non-contact cooling water from vessels, used to cool on-board equipment and machinery, through Outfall Serial Nos. 007 and 008. The Discharger of non-contact cooling water through Outfall Serial Nos. 007 and 008 has been added to the permit as a permitted discharge, with the exception that discharges of vessel non-contact cooling water with chemical additives is prohibited. The regulation of this discharge is presumed to enhance and protect water quality and beneficial uses of the receiving water, and the continuation of this discharge is not expected to significantly lower water quality. The regulation of the discharge of non-contact cooling water from vessels into Apra Harbor by the Discharger is consistent with Guam's anti-degradation policy, section 5101 of the 2001 revision to the Guam Water Quality Standards (GWQS, Public Law 26-32), adopted by the Territory of Guam on June 18, 2002.

Due to the types of operations that are conducted on a dry dock, the potential for pollutants to accumulate on the deck of the dry dock exist. Thus, to minimize the discharge of these pollutants into the receiving water, all non-storm water discharges should be limited and contact with the deck of the dry dock avoided whenever possible, through such means of hoses and pipes. Because the Discharger has demonstrated the ability to limit the discharge of non-contact cooling water to two discharge locations over the current permitting term, the proposed permit only authorizes the discharge of vessel non-contact cooling water through Outfall Serial Nos. 007 and 008. The discharge of non-contact cooling water through Outfall Serial Nos. 001-004 and 009-011 are not authorized in this permit.

3. Fire System, Pressure Relief Water.

The Discharger maintains a fire protection system, which is supplied from sea water, and discharges pressure relief water through Outfall Serial No. 011 to Apra Harbor. The current permit establishes Outfall Serial No. 011 as a discharge location for non-contact cooling water. As described in section III.A.2 of this fact sheet, Outfall Serial No. 011 for non-contact cooling has been discontinued. Outfall Serial No. 011 has been re-established for the discharge of pressure relief water from the fire system.

The current permit does not address the discharge of fire protection relief water, however the system was operational and the discharge of pressure relief water has occurred during the current permit term. The fire protection system is kept pressurized. Pressure relief water is discharged into Apra Harbor from the fire protection system at Outfall Serial No. 011. Chemical additives are not added to the fire protection system.

The regulation of this discharge is presumed to enhance and protect water quality and beneficial uses of the receiving water, and the continuation of this discharge is not expected to significantly lower water quality. The regulation of the discharge of fire protection relief water into Apra Harbor by the Discharger is consistent with Guam's anti-degradation policy, section 5101 of the 2001 revision to the Guam Water Quality Standards (GWQS, Public Law 26-32), adopted by the Territory of Guam on June 18, 2002.

4. Ballast Water.

Discharge Prohibition B.9 of the current permit states, “The permittee shall not discharge bilge or ballast water from the floating dry dock or unit-in-dock”. Ballast water intake is necessary for the lowering of a dry dock, which is necessary to dock vessels onto the dry dock. Ballast water discharges are necessary to raise the dry dock and the docked vessel so that the work can be safely performed on the docked vessel. Due to the vast size of dry docks and thus the large volume of ballast water, and the negligible environmental benefit gained, the containment and treatment of ballast water is not commonly practiced or considered appropriate. The discharge of ballast water is necessary for the operation of a dry dock and is not prohibited for similar types of facilities, and the prohibition is inappropriate for this facility. The discharge of ballast water from the dry dock is authorized under this permit and discharge requirements have been established as described in sections IV.A.2, IV.D.4, and V. of this fact sheet.

The regulation of this discharge is presumed to enhance and protect water quality and beneficial uses of the receiving water, and the continuation of this discharge is not expected to significantly lower water quality. The regulation of the discharge of dry dock ballast water into Apra Harbor by the Discharger is consistent with Guam’s anti-degradation policy (section 5101 of the GWQS).

Ballast water consists of ambient water taken onboard into the ballast tanks to assist with the buoyancy, stability, and the rising and lowering of the dry dock. The discharge of ballast water during the rising and lowering (cycling) of the dry dock is expected to occur throughout the year, with an approximate discharge of 3.4 million gallons per event. Ballast water may contain rust inhibitors, flocculent compounds, epoxy coating materials, zinc or aluminum (from anodes), iron, nickel, copper, bronze, silver, and other material or sediment from inside the ballast tanks, pipes, or other machinery. BMPs are expected to minimize the discharge of pollutants in dry dock ballast water. Further, prohibiting the use of additives to the ballast water will also control the presence of pollutants that could be discharged.

Typically the primary water quality concern with ballast water is invasive aquatic nuisance species (ANS). ANS may be released from a vessel’s ballast tanks into native waters when a vessel has taken in ballast water from other locations. ANS are not a concern in the dry dock ballast discharges because the dry dock is not expected to travel significant distances, and is expected to remain in native waters. Pollutants in ballast water would include any pollutants already present in the ambient receiving water, and any pollutants that might leach from the inside of the dry dock.

The discharge of bilge water from both the dry dock and unit-in-dock remain prohibited. The discharge of ballast water from the unit-in-dock is not authorized under the proposed permit, and is subject to the requirements listed in 33 CFR Part 151, and regulated by the U.S. Coast Guard.

5. Cathodic Protection

Sacrificial anodes are commonly used by vessels and dry docks to minimize corrosion of vessel hulls. Sacrificial anodes are usually made of zinc, magnesium, or aluminum, and are potential sources of pollution for the discharge of these pollutants. Pollutants from the anodes attached to the dry dock's hull are discharged into the receiving water through direct contact with the receiving water. Additional pollutants may be discharged through contact storm water and wash water from the anodes attached to the unit-in-dock, anodes removed from the unit-in-dock, or stored anodes. BMPs are expected to minimize the discharge of zinc, magnesium, or aluminum to the receiving water.

The regulation of this discharge is presumed to enhance and protect water quality and beneficial uses of the receiving water, and the continuation of this discharge is not expected to significantly lower water quality. The regulation of the discharge of pollutants from cathodic protection anodes into Apra Harbor by the Discharger is consistent with Guam's anti-degradation policy (section 5101 of the GWQS).

Any other discharges not specified above are not authorized discharges under this NPDES permit.

B. Receiving Water.

The facility proposes to discharge to Apra Harbor. To protect the designated uses of surface waters of the U.S., Guam has adopted water quality standards for marine waters depending on the level of protection required. GEPA classifies Apra Harbor as a "Good" quality marine water (M-2 category).

Beneficial uses assigned to this category of water include:

1. Propagation and survival of marine organisms, especially shellfish and other similarly harvested aquatic organisms, corals, and reef-related resources;
2. Whole body contact recreation;
3. Mariculture activities; and,
4. Aesthetic enjoyment and related activities.

Apra Harbor is listed in the 2008 Guam 303(d) list for impaired water bodies for PCBs based on a 1999 fish advisory. A TMDL has not currently been developed for this water body, and is listed as low priority.

PART IV - DETERMINATION OF EFFLUENT LIMITATIONS

The Clean Water Act ("CWA") requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States. The control of pollutants is established through effluent limitations and other requirements in NPDES permits. When determining effluent limitations, EPA must consider limitations based on the technology used to

treat the pollutant(s) (i.e., technology-based effluent limits) and limitations that are protective of water quality standards (i.e., water quality-based effluent limits).

A. Applicable Technology-based Effluent Limitations

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

- Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

1. Numeric Technology-based Effluent Limitations.

- a. Effluent limitations for total suspended solids (TSS) were established for the discharge of unit-in-dock wash water and storm water from Outfall Serial Nos. 001 through 010, and for non-contact cooling water from Outfall Serial No. 011 (previously Outfall Serial No. 011, currently non-contact cooling water is discharged from Outfall Serial Nos. 007 and 008) in the current permit based on BPJ. The current permit established a monthly average effluent limitation of 30 mg/L and a maximum daily effluent limitation of 60 mg/L at Outfall Serial Nos. 001 through 011. However, the 2001 revision of GWQS revised water quality standards for TSS. The water quality standards for TSS are now more stringent than the previously established technology-based effluent limitations in the current permit. The more

stringent water quality-based effluent limitations (WQBELs) have been established in the proposed permit, as described below in section IV.B of this fact sheet.

- b. Effluent limitations for oil and grease were established for the discharge of unit-in-dock wash water and storm water from Outfall Serial Nos. 001 through 010, and for non-contact cooling water from Outfall Serial No. 011 (previously Outfall Serial No. 011, currently non-contact cooling water is discharged from Outfall Serial Nos. 007 and 008) in the current permit based on BPJ. The current permit established a monthly average effluent limitation of 10 mg/L and a maximum daily effluent limitation of 15 mg/L at Outfall Serial Nos. 001 through 011. These effluent limitations have been carried over from the current permit and remain applicable for the discharges of unit-in-dock wash water, storm water, and non-contact cooling water.

2. Non-numeric Effluent Limitations.

The current permit required the Discharger to develop and implement a storm water pollution prevention plan (SWPPP), and a BMP Plan. Section 304(e) of the CWA and 40 CFR 122.44(k)(3) and (4) allow the permitting authority to require pollution prevention measures or BMPs when numeric effluent limitations are infeasible, or the practices are reasonably necessary to achieve effluent limitations and standards, or to carry out the purposes and intent of the CWA.

This permit carries over the requirements for the Discharger to develop and implement a SWPPP and BMP Plan. The SWPPP and BMP Plan shall minimize the discharge of pollutants from in-dock-unit wash water, storm water, non-contact cooling water, ballast water, and cathodic protection. The specific requirements for the SWPPP and BMP Plan are specified in section VI.A.1 of the permit and shall serve as technology-based effluent limitations for the discharge of unit-in-dock wash water, storm water, non-contact cooling water, ballast water, and cathodic protection. The requirements of the SWPPP and BMP Plan are further discussed in Part VIII, Special Conditions, of this fact sheet.

3. Compliance with Federal Anti-Backsliding Regulations for Proposed Technology-based Effluent Limitations.

Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the current permit, with some exceptions where limitations may be relaxed. The permit establishes equally stringent technology-based effluent limitations for oil and grease and establishes more stringent WQBELs for TSS. The requirement to develop and implement a SWPPP and BMP Plan have been carried over for all applicable discharges, including discharges not addressed in the current permit. Thus, the proposed changes are consistent with federal anti-backsliding regulations and Guam's anti-degradation policy.

B. Water Quality-based Effluent Limitations.

Pursuant to 40 CFR 122.44(d)(1), WQBELs 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. Applicable water quality standards are established in GWQS, which incorporate section 304(a) federal water quality criteria. Criteria for priority toxic pollutants designated under section 307(a)(1) of the CWA are based on EPA's National Recommended Water Quality Criteria. For purposes of this permit, only criteria for the protection of aquatic life (acute and chronic) and human health (consumption of organisms) were used.

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria within State (or Territory) water quality standards, the permitting authority uses procedures which account for existing controls on point and non-point sources of pollution, and the variability of the pollutant or parameter in the effluent, the sensitivity of species to toxicity testing, and, where appropriate, dilution of the effluent in the receiving water (40 CFR 122.44(d)). As described in EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-9-001), when determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion above a numeric or narrative water quality criterion for individual toxicants, EPA can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. EPA reviewed DMRs from the Discharger from October 2005 through January 2008 for unit-in-dock wash water, storm water, and non-contact cooling water. Data from these reports were used in-part, to conduct a reasonable potential analysis for chromium VI, copper, lead, zinc, and tributyltin as specified in section 3.3 of the TSD. It should be noted that a compliance evaluation inspection conducted on June 30, 2009 by EPA of the facility found, "[Guam Shipyard] is not collecting samples that are representative of the discharge..." Therefore, due to the uncertainty of the data, a conservative data analysis was used. The removal of reasonable potential to exceed water quality criteria, based on the available (and uncertain) data was not granted, and reasonable potential was carried over.

Further, due to limited availability of effluent monitoring data and concern over the reliability of the provided effluent data (as detailed in the June 30, 2009 inspection report), EPA has also evaluated the reasonable potential for individual toxicants to cause or contribute to an excursion of water quality standards based on the type of industry, history of compliance problems and toxic impact, type of receiving water, and designated use (section 3.2 of EPA's TSD).

The current permit establishes WQBELs for several toxic pollutants (chromium VI, copper, lead, zinc) and tributyltin using a permit limit derivation procedure which directly implements the acute and chronic water quality criteria as daily maximum and monthly average effluent limitations, respectively. EPA discourages the use of this approach since effluent variability has not been taken into account and that the possibility exists for the exceedance of the water quality criteria due to effluent variability (section 5.3 of TSD).

Rather, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health criteria are statistically translated into effluent limitations based on the more stringent acute, chronic, or human health criteria (section 5 of TSD). As described in section 5.2.2 of EPA's TSD, WQBELs for NPDES dischargers are established based on the need to maintain effluent quality for a pollutant at a level that will comply with water quality standards even during critical conditions in the receiving water. This level is determined by the criteria for the particular pollutant. The criteria, in turn, dictates the necessary treatment performance level for the pollutant through the calculation of a long-term average ("LTA") to ensure that the criteria is met under critical conditions over a long-term period.

Sections 5101.B.4 of the GWQS require that when more than one set of water quality criteria apply, the more stringent standards shall be applied.

Section 5104.C, D, and E of the GWQS provide for the application of alternate standards within an area surrounding the discharge point, or zone of mixing, when it is not feasible to achieve an effluent quality that meets water quality standards at the point of discharge (i.e., end of the pipe). No mixing zones have been authorized for this discharge.

1. Unit-in-Dock Wash Water and Storm Water.

- a. **Bacteria.** The current permit established an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) for coliform bacteria of 70/100 mL and 400/100 mL, respectively. These effluent limitations are based on water quality standards from a previous revision of the GWQS, which stated that the fecal coliform bacteria count shall not exceed an arithmetic mean of 70/100 mL during any 30-day period and shall not exceed 400/100 mL at any time. DMRs from October 2005 through January 2008 indicate a maximum coliform bacteria effluent concentration of 40/100 mL. However, based on the findings of EPA's June 30, 2009 compliance evaluation inspection that data from the facility is unreliable, reasonable potential for bacteria remains.

A 2001 revision of GWQS removed the water quality standards for coliform bacteria for M-2 category waters and replaced them with water quality standards for enterococci bacteria. The enterococci bacteria objective is considered a more reliable bacterial indicator. Thus, an effluent limitation for bacteria has been established based on the water quality standard for enterococci, which states, "Concentrations of enterococci bacteria shall not exceed 35 enterococci/100 mL based on the geometric mean of five sequential samples taken over a period of 30 days. No instantaneous reading shall exceed 104 enterococci/100 mL."

Monitoring for enterococci has been established to provide effluent data for compliance determination and future permitting efforts.

- b. **Benzene.** The permit includes an effluent limit for benzene since it is a common component of gasoline and other petroleum products and is known to be present

in discharges from other similar ship building and repairing facilities. Effluent data for benzene was not available for review.

GWQS provide criteria for benzene based on EPA’s National Recommended Water Quality Criteria. There are no GWQS or federal criteria for benzene for the protection of aquatic life. The human health criterion for benzene (based on the consumption of organisms only) is 51 µg/L. Table 6 provides a summary of the derivation of the effluent limitations for benzene. In accordance with section 5 of the TSD, EPA proposes a MDEL and AMEL of 142.7 µg/L and 71 µg/L, respectively, for benzene.

Table 6. WQBEL Calculations for Benzene.

| Description | Human Health Criteria (Consumption of Organisms Only) |
|---|--|
| Human Health Criterion, µg/L | 71 |
| WLA ⁽¹⁾ , µg/L | 71 |
| AMEL = WLA, µg/L | 71 |
| MDEL/AMEL Multiplier (95 th %) | 2.01 |
| MDEL, µg/L | 142.7 |

⁽¹⁾ Waste Load Allocation (WLA)

- c. **Copper.** Effluent data for copper was available for review for seven monitoring events between October 2005 and January 2008. The maximum effluent concentration was reported during the month of October 2005 as 3.9 µg/L. The GWQS for copper are based on EPA’s National Recommended Water Quality Criteria. The criteria maximum concentration (CMC) and criteria continuous concentration (CCC) for copper are 4.8 µg/L and 3.1 µg/L, respectively. Based on the reasonable potential analyses procedures outlined in section 3.3 of the TSD, the discharge has reasonable potential to exceed water quality criteria, and a WQBEL must be applied.

The current permit established effluent limitations for copper by directly implementing the acute and chronic criteria as effluent limitations. As previously explained, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health criteria are statistically translated into effluent limitations based on the more stringent acute, chronic, or human health criteria. Thus, WQBELs were recalculated based on the procedures specified in section 5 of the TSD. The calculations to determine the effluent limitations for copper are summarized in Table 7.

Table 7. WQBEL Calculations for Copper.

| Description | Aquatic Life Criteria (Acute) | Aquatic Life Criteria (Chronic) |
|---|-------------------------------|---------------------------------|
| Aquatic Life Criterion, µg/L | 4.8 | 3.1 |
| WLA, µg/L | 4.8 | 3.1 |
| WLA Multiplier (99 th %) | 0.321 | 0.527 |
| LTA, µg/L | 1.5408 | 1.6337 |
| LTA _{MDEL} Multiplier (99 th %) | - | 3.11 |
| MDEL (Total Recoverable), µg/L | - | 4.79 |
| LTA _{AMEL} Multiplier (95 th %) | - | 1.55 |
| AMEL (Total Recoverable), µg/L | - | 2.39 |

- d. **Chromium VI.** Effluent data for chromium VI was available for review for seven monitoring events between October 2005 and January 2008. The maximum effluent concentration was reported as non-detect, with minimum detection limitations between 0.01 µg/L and 1 µg/L. The GWQS for chromium VI are based on EPA’s National Recommended Water Quality Criteria. The CMC and CCC for chromium VI are 1,100 µg/L and 50 µg/L, respectively. Based on the reasonable potential analyses procedures outlined in section 3.3 of the TSD, the discharge does not demonstrate reasonable potential to exceed water quality criteria, however based on the findings of the June 30, 2009 compliance evaluation inspection, this data may be unreliable. Thus, reasonable potential has been carried over.

The current permit established effluent limitations for chromium VI by directly implementing the acute and chronic criteria as effluent limitations. As previously explained, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health criteria are statistically translated into effluent limitations based on the more stringent acute, chronic, or human health criteria. Thus, WQBELs were recalculated based on the procedures specified in section 5 of the TSD. The calculations to determine the effluent limitations for chromium VI are summarized in Table 8.

Table 8. WQBEL Calculations for Chromium VI.

| Description | Aquatic Life Criteria (Acute) | Aquatic Life Criteria (Chronic) |
|---|-------------------------------|---------------------------------|
| Aquatic Life Criterion, µg/L | 1,100 | 50 |
| WLA, µg/L | 1,100 | 50 |
| WLA Multiplier (99 th %) | 0.321 | 0.527 |
| LTA, µg/L | 353.1 | 26.35 |
| LTA _{MDEL} Multiplier (99 th %) | -- | 3.11 |
| MDEL (Total Recoverable), µg/L | -- | 81.9 |
| LTA _{AMEL} Multiplier (95 th %) | -- | 1.55 |
| AMEL (Total Recoverable), µg/L | -- | 40.8 |

- e. **Ethylbenzene.** The permit includes an effluent limitation for ethylbenzene since it is a common component of gasoline and other petroleum products and is known to be present in discharges from other similar ship building and repairing facilities. Effluent data for ethylbenzene was not available for review.

GWQS provide criteria for ethylbenzene based on EPA’s National Recommended Water Quality Criteria. There are no criteria for ethylbenzene for the protection of aquatic life. The human health criterion for ethylbenzene (based on the consumption of organisms only) is 29,000 µg/L. Table 9 provides a summary of the derivation of the effluent limitation for ethylbenzene. In accordance with section 5.4.4 of the TSD, EPA proposes a MDEL and AMEL of 58,290 and 29,000 µg/L, respectively, for ethylbenzene.

Table 9. WQBEL Calculations for Ethylbenzene.

| Description | Human Health Criteria (Consumption of Organisms Only) |
|---|--|
| Human Health Criterion, µg/L | 29,000 |
| WLA, µg/L | 29,000 |
| AMEL = WLA, µg/L | 29,000 |
| MDEL/AMEL Multiplier (95 th %) | 2.01 |
| MDEL, µg/L | 58,290 |

- f. **Lead.** Effluent data for lead was available for review for seven monitoring events between October 2005 and January 2008. The maximum effluent concentration was reported as 0.5 µg/L. The GWQS for lead are based on EPA’s National Recommended Water Quality Criteria. The CMC and CCC for lead are 210 µg/L and 8.1 µg/L, respectively. Based on the reasonable potential analyses procedures outlined in section 3.3 of the TSD, the discharge does not demonstrate reasonable potential to exceed water quality criteria. However based on the findings of the June 30, 2009 compliance evaluation inspection, this data may be unreliable. Thus, reasonable potential has been carried over.

The current permit established effluent limitations for lead by directly implementing the acute and chronic criteria as effluent limitations. As previously explained, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health criteria are statistically translated into effluent limitations based on the more stringent acute, chronic, or human health criteria. Thus, WQBELs were recalculated based on the procedures specified in section 5 of the TSD. The calculations to determine the effluent limitations for lead are summarized in Table 10.

Table 10. WQBEL Calculations for Lead.

| Description | Aquatic Life Criteria (Acute) | Aquatic Life Criteria (Chronic) |
|---|-------------------------------|---------------------------------|
| Aquatic Life Criterion, µg/L | 210 | 8.1 |
| WLA, µg/L | 210 | 8.1 |
| WLA Multiplier (99 th %) | 0.321 | 0.527 |
| LTA, µg/L | 67.4 | 4.3 |
| LTA _{MDEL} Multiplier (99 th %) | -- | 3.11 |
| MDEL (Total Recoverable), µg/L | -- | 13.4 |
| LTA _{AMEL} Multiplier (95 th %) | -- | 1.55 |
| AMEL (Total Recoverable), µg/L | -- | 6.7 |

- g. **Nitrate (NO₃-N).** The current permit established a monthly average effluent limitation for nitrate of 0.20 mg/L based on GWQS. The GWQS for M-2 category waters for nitrate states, “shall not exceed 0.20 mg/L”. The maximum detected value for nitrate reported by the Discharger for seven monitoring events between October 2005 and January 2008 was 0.01 mg/L. The remaining six monitoring events reported non-detect for nitrate. However, due to the finding from EPA’s June 30, 2009 inspection that effluent data reported by the Discharger is unreliable, reasonable potential for nitrate has not been removed and the effluent limitation is carried over.
- h. **Orthophosphate (PO₄-P).** The current permit established a monthly average effluent limitation for orthophosphate of 0.05 mg/L based on GWQS. The GWQS for M-2 category waters for orthophosphate states, “shall [not] exceed 0.05 mg/L”. The maximum detected value for orthophosphate reported by the Discharger for seven monitoring events between October 2005 and January 2008 was 0.01 mg/L. The remaining six monitoring events reported non-detect for orthophosphate. However, due to the finding from EPA’s June 30, 2009 inspection that effluent data reported by the Discharger is unreliable, reasonable potential for orthophosphate has not been removed and the effluent limitation is carried over.
- i. **Total Polychlorinated Biphenyls (PCBs).** The permit includes an effluent limit for PCBs as shipyards have been recognized as a source of PCBs in other recently adopted EPA permits in the EPA Region 9 territories (e.g., MYD Samoa, Inc, NPDES Permit No. AS0020036). In 2008, Apra Harbor was listed on the CWA's section 303(d) list of impaired waterbodies in Guam as a result of PCBs contamination in fish. A total maximum daily load has not yet been finalized by EPA. Effluent data for PCBs are not available for review, however due to the location of the facility directly adjacent to the impaired receiving water, the nature of activities conducted on-site, and the nature of the discharge, reasonable potential to contribute to an exceedance of water quality criteria has been determined as recommended in section 3.3 of the TSD.

GWQS provide criteria for PCBs based on EPA’s National Recommended Water Quality Criteria from 1998. The human health criterion for PCBs (consumption

of organisms only) is 0.00017 µg/L. Table 11 provides a summary of the derivation of the effluent limitation for PCBs. In accordance with section 5 of the TSD, EPA proposes a MDEL and AMEL of 0.00034 µg/L and 0.00017 µg/L, respectively, for PCBs.

Table 11. WQBEL Calculations for PCBs.

| Description | Human Health Criteria (Consumption of Organisms Only) |
|---|--|
| Human Health Criterion, µg/L | 0.00017 |
| WLA, µg/L | 0.00017 |
| AMEL = WLA, µg/L | 0.00017 |
| MDEL/AMEL Multiplier (95 th %) | 2.01 |
| MDEL, µg/L | 0.00034 |

- j. **pH.** The current permit establishes an instantaneous effluent limitation for pH of between 7.0 and 9.0 standard units (s.u.) This effluent limitation is based on a water quality standard from a previous revision of the GWQS, which established an ambient pH range from 7.0 – 9.0 for marine waters. The 2001 revision of GWQS revised the water quality standard for pH in M-2 category waters with a range of 6.5 to 8.5 s.u. Effluent limitations are established in this permit for pH based on the 2001 revised GWQS.

The current permit also prohibited a variation of pH of more than 0.5 s.u. between the effluent and receiving water. This permit carries over the requirement that variations of more than 0.5 s.u. from ambient conditions are prohibited, unless due to natural conditions.

- k. **Total Suspended Solids.** The current permit established an AMEL of 30 mg/L and a MDEL of 60 mg/L for TSS based on BPJ, as discussed in section IV.A of this fact sheet. However, the 2001 revision of GWQS established a more stringent water quality standard for TSS in M-2 category waters of 20 mg/L. Effluent limitations for TSS are established in this permit based on the revised 2001 GWQS. The 20 mg/L will be applied direction as a MDEL.

Based on GWQS, the current permit also prohibited a variation of TSS of more than 10 percent between the effluent and receiving water, unless due to natural conditions. The current GWQS states, “concentrations of suspended matters at any point shall not be increased more than ten percent from ambient at any time...” Thus, the effluent limitation has been revised from the current permit to prohibit the effluent TSS concentration of exceeding 10 percent *over* ambient conditions at any time.

- l. **Temperature.** Based on GWQS for M-2 category waters, the current permit establishes an effluent limitation of, “Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural

conditions.” This effluent limitation is consistent with the GWQS and is being carried over from the current permit.

- m. **Toluene.** The permit includes an effluent limit for toluene since it is a common component of gasoline and other petroleum products and is known to be present in discharges from other similar ship building and repairing facilities. GWQS provide criteria for toluene for the protection of human health. There are no GWQS or federal criteria for toluene for the protection of aquatic life. The human health criterion for toluene (consumption of organisms only) is 200,000 µg/L. In accordance with section 5 of the TSD, EPA proposes a MDEL and AMEL of 200,000 µg/L and 402,000 µg/L, respectively, for toluene. WQBEL calculations are summarized in Table 12.

Table 12. WQBEL Calculations for Toluene.

| Description | Human Health Criteria (Consumption of Organisms Only) |
|---|--|
| Human Health Criterion, µg/L | 200,000 |
| WLA, µg/L | 200,000 |
| AMEL = WLA, µg/L | 200,000 |
| MDEL/AMEL Multiplier (95 th %) | 2.01 |
| MDEL, µg/L | 402,000 |

- n. **Tributyltin (TBT).** TBT is a metal-based biocide which has been used historically in antifouling paints applied to vessel hulls. TBT has been determined to cause deformities in aquatic life, including deformities that disrupt or prevent reproduction. In 1988 Congress adopted the Organotin Anti-Foulant Paint Control Act, 33 USC 2403(a), which prohibits the application of anti-fouling coating containing TBT on vessels less than 25 meters in length. A treaty, adopted at the International Maritime Organization (IMO) in October 2001, prohibits the use of organotins, like TBT, in anti-fouling paints. The treaty entered into force on September 17, 2008. The treaty has been forwarded to the U.S. Senate for ratification. Because of the historic use of TBT in anti-fouling paints, and the acute toxicity of TBT, reasonable potential for storm water runoff and wash water has been determined.

The current permit established effluent limitations for TBT by directly implementing the acute and chronic criteria as effluent limitations. As previously explained, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health criteria are statistically translated into effluent limitations based on the more stringent acute, chronic, or human health criteria.

Table VI of Appendix A of the GWQS establishes water quality criteria for TBT. The acute and chronic criteria for TBT are 0.356 µg/L and 0.010 µg/L, respectively. WQBELs were recalculated based on the procedures specified in

section 5 of the TSD. The calculations to determine the effluent limitations for TBT are summarized in Table 13.

Table 13. WQBEL Calculations for TBT.

| Description | Aquatic Life Criteria (Acute) | Aquatic Life Criteria (Chronic) |
|---|-------------------------------|---------------------------------|
| Aquatic Life Criterion, µg/L | 0.356 | 0.010 |
| WLA, µg/L | 0.356 | 0.010 |
| WLA Multiplier (99 th %) | 0.321 | 0.527 |
| LTA, µg/L | 0.11 | 0.0053 |
| LTA _{MDEL} Multiplier (99 th %) | - | 3.11 |
| MDEL (Total Recoverable), µg/L | - | 0.016 |
| LTA _{AMEL} Multiplier (95 th %) | - | 1.55 |
| AMEL (Total Recoverable), µg/L | - | 0.008 |

- o. **Turbidity.** Based on GWQS, the current permit established an effluent limitation of, “Variations of more than 1.0 NTU from ambient conditions shall not be allowed unless due to natural conditions.”

The current GWQS for category M-2 waters state, “Turbidity values at any point shall not exceed 1.0 NTU over ambient conditions...” Thus, the effluent limitation has been revised from the current permit to prohibit the effluent turbidity of exceeding 1.0 NTU *over* ambient conditions.

- p. **Zinc.** Effluent data for zinc was available for review for seven monitoring events between October 2005 and January 2008. The maximum effluent concentration was reported as 10.3 µg/L. The GWQS for zinc are based on EPA’s National Recommended Water Quality Criteria. The CMC and CCC for zinc are 95 µg/L and 86 µg/L, respectively. Based on the reasonable potential analyses procedures outlined in section 3.3 of the TSD, the discharge does not demonstrate reasonable potential to exceed water quality criteria, and a WQBEL is not required. However, due to the nature of activities conducted at the facility and the materials present (zinc anodes), reasonable potential for zinc has been established, consistent with section 3.2 of the TSD.

The current permit established effluent limitations for zinc by directly implementing the acute and chronic criteria as effluent limitations. As previously explained, EPA recommends the use of a permit limit derivation procedure where the acute, chronic, and human health criteria are statistically translated into effluent limitations based on the more stringent acute, chronic, or human health criteria. Thus, WQBELs were recalculated based on the procedures specified in section 5 of the TSD. The calculations to determine the effluent limitations for zinc are summarized in Table 14.

Table 14. WQBEL Calculations for Zinc.

| Description | Aquatic Life Criteria (Acute) | Aquatic Life Criteria (Chronic) |
|---|-------------------------------|---------------------------------|
| Aquatic Life Criterion, µg/L | 95 | 86 |
| WLA, µg/L | 95 | 86 |
| WLA Multiplier (99 th %) | 0.321 | 0.527 |
| LTA, µg/L | 30.495 | 45.322 |
| LTA _{MDEL} Multiplier (99 th %) | 3.11 | - |
| MDEL (Total Recoverable), µg/L | 94.8 | - |
| LTA _{AMEL} Multiplier (95 th %) | 1.55 | - |
| AMEL (Total Recoverable), µg/L | 47.27 | - |

2. Non-contact Cooling Water.

- a. **Coliform Bacteria.** The current permit established an AMEL and MDEL for coliform bacteria of 70/100 mL and 400/100 mL, respectively. These effluent limitations are based on water quality standards from the previous revision of the GWQS, which stated that the fecal coliform bacteria count shall not exceed an arithmetic mean of 70/100 mL during any 30-day period and shall not exceed 400/100 mL at any time. DMRs from October 2005 through January 2008 indicate a maximum coliform bacteria effluent concentration of 40/100 mL. However, based on the findings of EPA’s June 30, 2009 compliance evaluation inspection that data from the facility is unreliable and reasonable potential for bacteria remains.

A 2001 revision of GWQS removed the water quality standards for coliform bacteria for M-2 category waters and replaced them with water quality standards for enterococci bacteria. The enterococci bacteria objective is considered to be a better bacterial indicator. Thus, an effluent limitation for bacteria has been established based on the water quality standard for enterococci, which states, “Concentrations of enterococci bacteria shall not exceed 35 enterococci/100 mL based on the geometric mean of five sequential samples taken over a period of 30 days. No instantaneous reading shall exceed 104 enterococci/100 mL.”

Monitoring for enterococci has been established to provide effluent data for compliance determination and future permitting efforts.

- b. **Nitrate (NO₃-N).** The current permit established an AMEL for nitrate of 0.20 mg/L based on the GWQS, which states, “shall not exceed 0.20 mg/L”. The maximum detected value for nitrate reported by the Discharger for six monitoring events between January 2006 and January 2008 was 0.1 mg/L. The other five monitoring events reported non-detect for nitrate. However, due to the finding from EPA’s June 30, 2009 inspection that effluent data reported by the Discharger is unreliable, reasonable potential for nitrate has not been removed and the effluent limitation is carried over.

US EPA ARCHIVE DOCUMENT

- c. **Orthophosphate (PO₄-P).** The current permit established an AMEL for orthophosphate of 0.05 mg/L based on the GWQS, which states, “shall [not] exceed 0.05 mg/L”. The maximum detected value for orthophosphate reported by the Discharger for six monitoring events between January 2006 and January 2008 reported 0.03 mg/L for orthophosphate. The other five monitoring events were all non-detect. However, due to the finding from EPA’s June 30, 2009 inspection that effluent data reported by the Discharger is unreliable, reasonable potential for orthophosphate has not been removed and the effluent limitation is carried over.
- d. **Total Polychlorinated Biphenyls (PCBs).** The permit includes an effluent limit for PCBs since shipyards have been recognized as a source of PCBs in other recently adopted EPA permits in the EPA Region 9 territories (e.g., MYD Samoa, Inc, NPDES Permit No. AS0020036). In 2008, Apra Harbor was listed on the CWA’s section 303(d)list of impaired waterbodies in Guam as a result of PCBs contamination in fish. A total maximum daily load has not yet been finalized by EPA. Effluent data for PCBs are not available for review, however due to the location of the facility directly adjacent to the impaired receiving water, the nature of activities conducted on-site, and the nature of the discharge, reasonable potential to contribute to an exceedance of water quality criteria has been determined as recommended in section 3.3 of the TSD.

GWQS provide criteria for PCBs based on EPA’s 1998 National Recommended Water Quality Criteria. The human health criterion for PCBs (consumption of organisms only) is 0.00017 µg/L. Table 15 provides a summary of the derivation of the effluent limitation for PCBs. In accordance with section 5 of EPA’s TSD, EPA proposes a MDEL and AMEL of 0.00034 and 0.00017 µg/L, respectively, for PCBs.

Table 15. WQBEL Calculations for PCBs.

| Description | Human Health Criteria (Consumption of Organisms Only) |
|---|--|
| Human Health Criterion, µg/L | 0.00017 |
| WLA, µg/L | 0.00017 |
| AMEL = WLA, µg/L | 0.00017 |
| MDEL/AMEL Multiplier (95 th %) | 2.01 |
| MDEL, µg/L | 0.00034 |

- e. **pH.** The current permit establishes an instantaneous effluent limitation for pH of between 7.0 and 9.0 s.u. This effluent limitation is based on a water quality standard from a previous revision of the GWQS, which established an ambient pH range from 7.0 – 9.0 for marine waters. The 2001 revision of Guam Water Quality Standards (Public Law 26-113, June 18, 2002, GEPA) revised the water quality objective for pH in M-2 category waters with a range of 6.5 to 8.5 s.u. Effluent limitations are established in this permit for pH based on the revised GWQS.

The current permit also prohibited a variation of pH of more than 0.5 s.u. between the effluent and receiving water. This permit carries over the requirement that variations of more than 0.5 s.u. from ambient conditions are prohibited, unless due to natural conditions.

- f. **Total Suspended Solids.** The current permit established a AMEL of 30 mg/L and a MDEL of 60 mg/L for TSS based on BPJ, as discussed in section IV.A of this fact sheet. However, the 2001 revision of GWQS established a more stringent water quality standard for TSS in M-2 category waters of 20 mg/L. Effluent limitations for TSS are established in this permit based on the 2001 revised GWQS. The 20 mg/L will be applied as a MDEL.

Based on GWQS, the current permit also prohibited a variation of TSS of more than 10 percent between the effluent and receiving water, unless due to natural conditions. The current GWQS states, “concentrations of suspended matters at any point shall not be increased more than ten percent from ambient at any time...” Thus, the effluent limitation has been revised from the current permit to prohibit the effluent TSS concentration of exceeding 10 percent *over* ambient conditions at any time.

- g. **Temperature.** Based on GWQS for M-2 category waters, the current permit establishes an effluent limitation of, “Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural conditions.” This effluent limitation is consistent with the GWQS and is being carried over from the current permit.
- h. **Turbidity.** Based on GWQS, the current permit established an effluent limitation of, “Variations of more than 1.0 NTU from ambient conditions shall not be allowed unless due to natural conditions.”

The current GWQS for category M-2 waters state, “Turbidity values at any point shall not exceed 1.0 NTU over ambient conditions...” Thus, the effluent limitation has been revised from the current permit to prohibit the effluent turbidity of exceeding 1.0 NTU *over* ambient conditions.

3. Fire Protection System Relief Water.

- a. **pH.** Effluent limitations for pH have been established based on GWQS for pH in M-2 category waters. The discharge of fire protection system relief water shall be between 6.5 to 8.5 s.u. at all times and not vary from ambient conditions more than 0.5 s.u., unless due to natural conditions.
- b. **Temperature.** Effluent limitations for temperature have been established based on GWQS for M-2 category waters. Variations of more than 1.0 degree centigrade from ambient conditions shall not be allowed unless due to natural conditions.

4. Compliance with Federal Anti-Backsliding Provisions for Proposed WQBELS.

Section 402(o) of the CWA and 40 CFR 122.44(l) prohibits the renewal or reissuance of an NPDES permit that contains WQBELS less stringent than those established in the current permit, with some exceptions. The permit includes effluent limitations at least as stringent as those contained in the previous permit. The requirements of this permit are consistent with the requirements of 40 CFR 122.44(l) and are not expected to result in the degradation of water quality.

C. Whole Effluent Toxicity Testing Requirements.

The current permit establishes a chronic toxicity effluent limitation of 94 chronic toxicity units (TUc) for unit-in-dock wash water and storm water. Available data from January 2003 through January 2005 include three data points, ranging from 1 TUc to 31.75 TUc, and reported survival percentages of 100 percent to 3.15 percent.

Section 5103.B.11.A.i of the GWQS state, *“All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological, acute or chronic responses in human, plant, animal or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density growth anomalies, bioassays of appropriate duration, or other appropriate, scientifically defensible methods.”*

Based on the 3.15 percent survival, toxicity was observed in the effluent, and demonstrates reasonable potential to exceed the toxic substances water quality standard for storm water and unit-in-dock wash water. Chronic toxicity effluent limitations for storm water and other short-term intermittent discharges (i.e., unit-in-dock wash water) is not appropriate. Chronic toxicity is intended to determine longer-term exposure toxicity than is likely to occur from the permitted intermittent discharges, and is more appropriate for continuous or long-term discharges. Acute toxicity is intended to determine the short-term exposure toxicity, and is more appropriate for the discharge of intermittent discharges such as unit-in-dock wash water and storm water.

Section 5104.A.11 of the GWQS state that compliance with the toxicity requirements may be evaluated with a 96 hour bioassay, or short-term method for estimating chronic toxicity. Further, GWQS suggest using a 96 hour LC50 concentration for determining compliance with the toxicity requirements. Because dilution has not been granted to the Discharger, and the effluent limitations are applied end-of-pipe, the use of an LC50 is not appropriate to determine compliance with the water quality standard, which requires that waters be maintained free of toxic substances in concentrations that produce detrimental responses in aquatic life. The use of the LC50 when dilution has not been granted would allow for a 50 percent survival result, which is not consistent with the narrative water quality standards. For these discharge situations, EPA supports the use of hypothesis testing.

Consistent with the GWQS, and EPA guidance on the application of acute toxicity effluent limitations for low-flow situations, an acute toxicity effluent limitation has been established.

The acute toxicity effluent limit for the discharge of storm water and unit-in-dock wash water is “Pass” for any one test result. For this permit, the determination of Pass or Fail from a single-effluent-concentration (paired) acute toxicity test is determined using a one-tailed hypothesis test called a t-test, as detailed in section II.A.5 of the permit. The objective of a Pass or Fail test is to determine if survival in the single treatment (100% effluent) is significantly different from survival in the control (0% effluent), indicating non-compliance with the GWQS which require waters to be maintained free of toxic substances in concentrations that produce detrimental physiological, acute or chronic responses in aquatic life.

D. Summary of Final Effluent Limitations.

1. The permittee shall maintain compliance with all effluent limitations and monitoring requirements specified in Table 16 for the discharge of storm water and unit-in-dock wash water through Outfall Serial Nos. 001 through 004, 007 through 010 to Apra Harbor:

Table 16. Effluent Limitations for Storm Water and Unit-In-Dock Wash Water Discharges.

| Parameter | Unit | Effluent Limitations | | | Monitoring Requirements | |
|-------------------------------------|----------|----------------------|---------------|-----------------------|---------------------------|-------------|
| | | Average Monthly | Maximum Daily | Instantaneous Maximum | Frequency | Sample Type |
| Flow | mgd | Monitoring Only | | | Monthly | Estimate |
| Temperature | °C | - | - | (1) | Monthly ⁽⁴⁾ | Grab |
| Total Suspended Solids | mg/L | - | 20 | (2) | Monthly ⁽³⁾⁽⁴⁾ | Grab |
| pH | s.u. | - | - | (5) | Monthly ⁽³⁾⁽⁴⁾ | Grab |
| Oil and Grease | mg/L | 10 | 15 | - | Monthly ⁽³⁾⁽⁴⁾ | Grab |
| Nitrate (NO ₃ -N) | mg/L | 0.20 | - | - | Monthly ⁽⁴⁾ | Grab |
| Orthophosphate (PO ₄ -P) | mg/L | 0.05 | - | - | Monthly ⁽⁴⁾ | Grab |
| Turbidity | NTU | - | - | (6) | Monthly ⁽⁴⁾ | Grab |
| Benzene | µg/L | 71 | 142.7 | - | Monthly ⁽⁴⁾ | Grab |
| Ethylbenzene | µg/L | 29,000 | 58,290 | - | Monthly ⁽⁴⁾ | Grab |
| Toluene | µg/L | 200,000 | 402,000 | - | Monthly ⁽⁴⁾ | Grab |
| Chromium VI ⁽⁷⁾ | µg/L | 40.8 | 81.9 | - | Monthly ⁽⁴⁾ | Grab |
| Lead ⁽⁷⁾ | µg/L | 6.7 | 13.4 | - | Monthly ⁽⁴⁾ | Grab |
| Copper ⁽⁷⁾ | µg/L | 2.39 | 4.79 | - | Monthly ⁽⁴⁾ | Grab |
| Tributyltin ⁽⁷⁾ | µg/L | 0.008 | 0.016 | - | Monthly ⁽⁴⁾ | Grab |
| Zinc ⁽⁷⁾ | µg/L | 47.3 | 94.8 | - | Monthly ⁽⁴⁾ | Grab |
| Enterococci Bacteria | #/100 mL | (8) | - | 104 | Monthly ⁽⁴⁾ | Grab |

| Parameter | Unit | Effluent Limitations | | | Monitoring Requirements | |
|----------------|-----------------------|----------------------|---------------|-----------------------|--------------------------|-------------|
| | | Average Monthly | Maximum Daily | Instantaneous Maximum | Frequency | Sample Type |
| PCBs | µg/L | 0.00017 | 0.00034 | - | Quarterly ⁽⁴⁾ | Grab |
| Acute Toxicity | "Pass" ⁽⁹⁾ | | | | | |

- (1) The discharge of effluent shall not exceed the ambient receiving water temperature by more than 1.0 °C.
- (2) The effluent TSS concentration shall not be 10% over ambient conditions at any time.
- (3) Discharges of in-dock unit wash water shall be monitored weekly for a minimum of 3 months and 4 sampling events. If no effluent limitation exceedances are detected in the initial 3 months and a minimum of four sampling events, the Discharger may reduce monitoring to monthly. If a pollutant is detected above an effluent limitation during the period of reduced monitoring, monitoring for that pollutant shall return to weekly, and may be reduced to monthly again only after demonstrating compliance with the effluent limitations for another 3 months and a minimum of 4 sampling events.
- (4) Both the effluent and ambient water samples shall be collected in as close a time period as reasonably possible.
- (5) The discharge shall stay between 6.5 and 8.5 standard pH units at all times. Variations of more than 0.5 s.u. from ambient conditions are prohibited unless due to natural conditions.
- (6) The effluent turbidity shall not exceed 1.0 NTU over ambient conditions.
- (7) All metals are expressed as total recoverable.
- (8) Concentrations of enterococci shall not exceed 35 enterococci/100 mL based upon the geometric mean of five sequential samples taken over a 30 day period.
- (9) No statistical difference between effluent and control, as further detailed in Part II.5 of the permit.

2. The permittee shall maintain compliance with all effluent limitations and monitoring requirements specified in Table 17 for the discharge of non-contact cooling water through Outfall Serial Nos. 007 and 008 to Apra Harbor:

Table 17. Effluent Limitations for Non-Contact Cooling Water.

| Parameter | Unit | Effluent Limitations | | | Monitoring Requirements | |
|-------------------------------------|----------|----------------------|---------------|-----------------------|--------------------------|-------------|
| | | Average Monthly | Maximum Daily | Instantaneous Maximum | Frequency | Sample Type |
| Flow | mgd | Monitoring Only | | | Monthly | Estimate |
| Temperature | °C | - | - | (1) | Monthly ⁽⁴⁾ | Grab |
| Turbidity | NTU | - | - | (2) | Monthly ⁽⁴⁾ | Grab |
| Oil and Grease | mg/L | 10 | 15 | - | Monthly | Grab |
| pH | s.u. | - | - | (5) | Monthly ⁽⁴⁾ | Grab |
| Total Suspended Solids | mg/L | - | 20 | (3) | Monthly ⁽⁴⁾ | Grab |
| Nitrate (NO ₃ -N) | mg/L | 0.20 | - | - | Monthly ⁽⁴⁾ | Grab |
| Orthophosphate (PO ₄ -P) | mg/L | 0.05 | - | - | Monthly ⁽⁴⁾ | Grab |
| Enterococci Bacteria | #/100 mL | (6) | - | 104 | Monthly ⁽⁴⁾ | Grab |
| PCBs | µg/L | 0.00017 | 0.00034 | - | Quarterly ⁽⁴⁾ | Grab |

(1) The discharge of effluent shall not exceed the ambient receiving water temperature by more than 1.0 °C.

- (2) The effluent turbidity shall not exceed 1.0 NTU over ambient conditions.
- (3) The effluent TSS concentration shall not be 10% over ambient conditions at any time.
- (4) Both the effluent and ambient water samples shall be collected in as close a time period as reasonably possible.
- (5) The discharge shall stay between 6.5 and 8.5 standard pH units at all times. Variations of more than 0.5 s.u. from ambient conditions are prohibited unless due to natural conditions.
- (6) Concentrations of enterococci bacteria shall not exceed 35 enterococci/100 mL based upon the geometric mean of five sequential samples taken over a period of 30 days.

3. Fire Protection System Relief Water

- a. The permittee shall maintain compliance with all effluent limitations and monitoring requirements specified in Table 18 for the discharge of fire protection system pressure relief water through Outfall Serial Nos. 011 to Apra Harbor:

Table 18. Effluent Limitations for Fire Protection System Relief Water.

| Parameter | Unit | Effluent Limitations | | | Monitoring Requirements | |
|-------------|------|----------------------|---------------|-----------------------|-------------------------|-------------|
| | | Average Monthly | Maximum Daily | Instantaneous Maximum | Frequency | Sample Type |
| Flow | mgd | Monitoring Only | | | Monthly | Estimate |
| Temperature | °C | - | - | (1) | Monthly ⁽²⁾ | Grab |
| pH | s.u. | - | - | (3) | Monthly ⁽²⁾ | Grab |

(1) The discharge of effluent shall not exceed the ambient receiving water temperature by more than 1.0 °C.

(2) Both the effluent and ambient water samples shall be collected in as close a time period as reasonably possible.

(3) The discharge shall stay between 6.5 and 8.5 standard pH units at all times. Variations of more than 0.5 s.u. from ambient conditions are prohibited unless due to natural conditions.

4. Ballast Water and Cathodic Protection Leachate

The Discharger shall operate in a method consistent with their BMP Plan.

PART V - DETERMINATION OF DISCHARGE PROHIBITIONS

The following discharge prohibitions have been established in the proposed permit based on GWQS and the requirements of the current permit.

- A. Discharges other than storm water runoff and unit-in-dock wash water through Outfall Serial Nos. 001 to 004, 009, and 010; non-contact cooling water through Outfall Serial Nos. 007 and 008; fire protection water through Outfall Serial No. 011; dry dock ballast water; and the discharge of pollutants from cathodic protection anodes, as described in Part III.A.5 of this fact sheet are prohibited (GWQS, section 5104, part F).

- B. The permitted discharges shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land use practices or other human activities that (GWQS, section 5103, part A):
1. cause visible floating materials, debris, oils, grease, scum, foam, or other floating matter which degrades water quality or use;
 2. produce visible turbidity, settle to form deposits or otherwise adversely affect aquatic life;
 3. produce objectionable color, odor or taste, directly or by chemical or biological action;
 4. injure or are toxic or harmful to humans, animals, plants, or aquatic life; or
 5. induce the growth of undesirable aquatic life.
- C. Discharges contaminated with petroleum products which result in any the following are prohibited (GWQS, section 5103, part B):
1. detectable as a visible film, or sheen, or results in visible discoloration of the surface with a corresponding oil and petroleum product odor;
 2. causes damage to fish or invertebrates; or
 3. forms an oil deposit on the shores or bottom of the receiving body of water.
- D. Discharges that cause organisms in the receiving waters to exhibit deleterious effects or otherwise impair species recruitment, reproduction or survivorship, is prohibited (GWQS, section 5104, part F).
- E. Discharges that cause organisms normally harvested for food to become harmful to humans, wildlife or other organisms, if consumed, are prohibited ((GWQS, section 5104, part F).
- F. Discharges that substantially impair anchorage and navigation, including any discharge which the Secretary of the Army, acting through the Corps of Engineers, finds would result in this damage, is prohibited (GWQS, section 5104, part F).
- G. Discharges that the Administrator of the EPA has objected to in writing pursuant to any right to object provided by the Federal Water Pollution Control Act, is prohibited (GWQS, section 5104, part F).
- H. The discharge of blasting abrasive (new and spent), rust, scale, paint particles, bilge water, trash, debris, sanitary wastes, chemical and biological warfare agents, and radioactive materials is prohibited (GWQS, section 5103, part B; GWQS, section 5104, part F).
- J. The discharge of ballast water from units-in-dock is prohibited (GWQS, section 5104, part F).
- K. The use of cooling water additives is prohibited (GWQS, section 5104, part F).

PART VI - MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to continue to monitor the effluent for pollutants or parameters with technology-based effluent limits (i.e., TSS, oil and grease) and water quality-based effluent limits (i.e., pH, copper, etc.) for the duration of the permit term.

A. Effluent and Ambient Monitoring and Reporting.

The permit requires the permittee to conduct effluent and ambient monitoring to evaluate compliance with the 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 Part 136, unless otherwise specified in the permit. All monitoring data shall be reported on DMR forms and submitted quarterly, as specified in the permit. Monitoring frequencies for most parameters are based on the requirements established in the previous permit (monthly), with the exception of quarterly monitoring for PCBs. Quarterly monitoring for PCBs should be sufficient to determine compliance with effluent limitations and gather sufficient data for future permitting efforts.

B. Priority Pollutants Scan.

The permit requires the permittee to conduct a priority pollutants scan during the third and fifth 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 toxic pollutants scan in accordance with the methods described in the most recent edition of 40 CFR Part 136, unless otherwise specified in the permit. The method quantitation limit should be lower than the most stringent applicable water quality criterion. If such method is not available, then the method with the lowest quantitation limit shall be used. 40 CFR 131.36 provides a complete list of priority pollutants.

PART VII - STANDARD CONDITIONS

A. Reopenor Provision.

In accordance with 40 CFR Part 122 and 124, the 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 TMDLs; 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 9 Standard Federal NPDES Permit Conditions, dated July 1, 2001.

PART VIII - SPECIAL CONDITIONS

A. Development and Implementation of Best Management Practices Plan.

Pursuant to section 304(e) of the CWA and 40 CFR 122.44(k)(4), EPA may impose BMPs which are “reasonably necessary...to carry out the purposes of the Act.” The pollution prevention requirements or BMPs proposed in the permit operate as technology-based limitations on effluent discharges that reflect the application of BAT and BCT. The proposed permit requires the permittee to develop (or update) and implement a BMP Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Apra Harbor while performing normal processing operations at the facility.

B. Development and Implementation of Storm Water Pollution Prevention Plan.

In accordance with section 304(e) of the CWA and 40 CFR 122.44(k)(2), the permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) that is consistent with Sector R, Ship and Boat Building and Repairing Yards, of the Final Reissuance of the NPDES Storm Water Multi-Sector General Permit (MSGP) for Industrial Activities (73 FR 56572; September 29, 2008). The permit requires the permittee to develop (or update) and implement a SWPPP with appropriate pollution prevention measures or BMPs designed to prevent pollutants related to storm water from entering Apra Harbor.

BMPs to be considered for implementation in the BMP Plan and SWPPP shall include, but not be limited to the following:

Table 19. Example BMPs.

| Category | Practices |
|---|--|
| Pressure Washing | <ul style="list-style-type: none"> • Collect discharge and remove visible solids • Use no detergents or additives • Direct deck drainage to a collection system sump • Implement diagonal trenches or berms and sumps to collect wash water • Use solid decking, gutters, and sumps at lift platforms and collect for possible reuse |
| Surface Preparation, Sanding, and Paint Removal | <ul style="list-style-type: none"> • Enclose, cover, or contain blasting and sanding activities • Use the least hazardous blasting media economically available • Cover drains, trenches, and drainage channels; prohibit uncontained blasting or sanding activities over open water • Clean storm water conveyances of deposits of blasting debris and paint chips • Prohibit blasting or sanding activities during windy conditions • Inspect and clean sediment traps • Sweep accessible areas of the dry dock • Collect spent abrasives and store under a cover to await proper disposal |

| Category | Practices |
|-------------------------|--|
| Painting | <ul style="list-style-type: none"> • Enclose, cover, or contain painting activities • Prohibit uncontained spray painting over open water • Prohibit spray painting during windy conditions • Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters, preferable indoors, under a shed • Have absorbent and other cleanup items readily available for immediate cleanup of spills; allow empty paint cans to dry before disposal; keep paint and paint thinner away from traffic areas • Recycle paint, paint thinner, and solvents • Train employees on proper painting and spraying techniques |
| Dry Dock Maintenance | <ul style="list-style-type: none"> • Clean and maintain dry dock • Perform routine clean up of litter and debris • Sweep accessible areas to remove debris and spent sandblasting material prior to flooding • If using hosing then collect wash water to remove solids • Clean remaining areas of the dock after vessel has been removed and the dock raised • Remove and dispose of floatable and other low-density waste |
| Dry Dock Activities | <ul style="list-style-type: none"> • Use plastic barriers beneath the hull, between the hull and dry dock walls for containment • Use plastic barriers hung from the flying bridge of the dry dock, from the bow or stern of the vessel, or from temporary structures for containment • Weight the bottom edge of containment • Use plywood and/or plastic sheeting to cover open areas between decks when sandblasting • Install rings or cleats, cable suspension systems, or scaffolding to make containment easier • Have absorbent materials and oil containment berms readily available • Use the least toxic cathodic protection anodes economically available (magnesium is less toxic than aluminum, which is less toxic than zinc) • Replace flaking cathodic protection anodes • Store old and new cathodic protection anodes out of contact with storm water or areas that may contact storm water (e.g., dry dock floor) |
| Non Dry Dock Activities | <ul style="list-style-type: none"> • Hang tarpaulin from the boat, fixed, or floating platforms to reduce pollutants transported by wind • Pave or tarp surfaces under marine railways • Clean railways before incoming tide; haul vessels beyond high tide line before work commences or halt work during high tide • Place plastic sheeting or tarpaulin underneath boats to contain and collect waste and spent materials • Use fixed or floating platforms with appropriate plastic or tarpaulin barriers as work surfaces and for containment when work is performed on vessel in the blast material or paint overspray • Sweep rather than hose debris present on dock |

| Category | Practices |
|--|--|
| <p>Engine Maintenance and Repairs</p> | <ul style="list-style-type: none"> • Maintain an organized inventory materials used in the maintenance shop • Dispose of greasy rag, oil filters, air filters, batteries, spent coolant, and degreasers properly • Minimize contamination of precipitation and surface runoff • Perform operations indoors • Label and track the recycling of waste material • Drain oil filters before disposal or recycling • Store cracked batteries in non-leaking secondary containers • Promptly transfer used fluids to proper container • Do not leave full drip pans or other open containers around the shop • Empty and clean drip pans and containers • Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets • Plug floor drains that are connected to the storm or sanitary sewer • Inspect maintenance area regularly • Train employees on proper waste control and disposal procedures • Store permanent tanks in paved area surrounded by dike system which provides sufficient containment for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank • Prohibit hosing down the shop floor |
| <p>Bulk Liquid Storage and Containment</p> | <ul style="list-style-type: none"> • Maintain good integrity of all storage tanks • Routinely inspect storage tanks for leaks • Routinely inspect piping for failures or leaks • Train employees of proper filling and transfer stations • Store containerized materials in a protected, secure location and away from drains or otherwise minimize the contamination of precipitation and surface runoff • Cover fueling areas • Use spill and overflow protection |

| Category | Practices |
|----------------------------------|---|
| Containerized Material Storage | <ul style="list-style-type: none"> • Store reactive, ignitable, or flammable liquids in compliance with the local fire code • Label all containerized materials • Identify potentially hazardous materials, their characteristics, and use • Control excessive purchasing, storage, and handling of potentially hazardous materials • Keep records to identify quantity, receipt date, service life, users, and disposal routes • Secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials • Educate personnel for proper storage, use cleanup, and disposal of materials • Provide sufficient containment for outdoor storage areas with a minimum of 110 percent of the volume of the largest tank • Use temporary containment where required by portable drip pans; use spill troughs for drums with taps • Mix paints and solvents in designated areas with secondary containment and away from drains, ditches, piers, and surface waters • Locate designated material storage areas indoors or under a shed or otherwise minimize the contamination of precipitation and surface runoff |
| Designated Material Mixing Areas | <ul style="list-style-type: none"> • If a spill occurs, stop the source; contain the liquid until cleanup is complete; deploy oil containment booms if spill may reach water; cover spill with absorbent material; keep area well ventilated; dispose cleanup materials properly; do not use emulsifier or dispersant |
| Shipboard Process Water Handling | <ul style="list-style-type: none"> • Keep process and cooling water used aboard ships separate from sanitary wastes • Keep process and cooling water from contact with spent abrasives and paint • Keep wash water from contact with spent abrasives, cathodic protection anodes, and paint • Inspect connecting hoses for leaks |
| Ballast Water | <ul style="list-style-type: none"> • Routinely inspect the integrity of the ballast tanks to ensure pollutants from other dry dock operations are not contacting and polluting ballast water • Implement operational procedures to minimize the amount of ballast water discharged essential for dry dock operations • Routinely inspect the receiving water during cycling events for oil sheens |

PART IX - OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Threatened and Endangered Species.

Section 7 of the Endangered Species Act of 1973 (ESA; 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.

On March 26, 2009, EPA requested informal consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service to identify any federally listed, proposed and candidate endangered or threatened species and designated and proposed critical habitats that occur in Apra Harbor or in the vicinity of the effluent discharges. The NOAA National Marine Fisheries Service provided a list of marine protected species under their jurisdiction that may be present in the vicinity of the effluent discharged to Apra Harbor. The list includes the 28 species of marine mammals (including whales, dolphins, dugong and seal) and four species of sea turtles as listed in Table 20.

Table 20. Marine Protected Species.

| Common Name | Scientific Name | ESA Listing |
|-----------------------------|-----------------------------------|-------------|
| MARINE MAMMALS | | |
| Blue Whale | <i>Balaenoptera musculus</i> | Endangered |
| Blainville's Beaked Whale | <i>Mesoplodon densirostris</i> | |
| Bryde's Whale | <i>Balaenoptera edeni</i> | |
| Cuvier's Beaked Whale | <i>Ziphius cavirostris</i> | |
| Dwarf Sperm Whale | <i>Kogia simus</i> | |
| False Killer Whale | <i>Pseudorca crassidens</i> | |
| Fin Whale | <i>Balaenoptera physalus</i> | Endangered |
| Humpback Whale | <i>Megaptera novaeangliae</i> | Endangered |
| Killer Whale | <i>Orcinus orca</i> | |
| Long-finned Pilot Whale | <i>Globicephala melaena</i> | |
| Longman's Beaked Whale | <i>Indopacetus pacificus</i> | |
| Melon-headed Whale | <i>Peponocephala electra</i> | |
| Minke Whale | <i>Balaenoptera acutorostrata</i> | |
| Pygmy Killer Whale | <i>Feresa attenuata</i> | |
| Pygmy Sperm Whale | <i>Kogia breviceps</i> | |
| Sei Whale | <i>Balaenoptera borealis</i> | Endangered |
| Short-finned Pilot Whale | <i>Globicephala macrorhynchus</i> | |
| Sperm Whale | <i>Physeter macrocephalus</i> | Endangered |
| Bottlenose Dolphin | <i>Tursiops truncatus</i> | |
| Common Dolphin | <i>Delphinus delphis</i> | |
| Fraser's Dolphin | <i>Lagenodelphis hosei</i> | |
| Pantropical Spotted Dolphin | <i>Stenella attenuata</i> | |
| Risso's Dolphin | <i>Grampus griseus</i> | |
| Rough-toothed Dolphin | <i>Steno bredanensis</i> | |
| Spinner Dolphin | <i>Stenella longirostris</i> | |
| Striped Dolphin | <i>Stenella coeruleoalba</i> | |
| Dugong ⁽¹⁾ | <i>Dugong dugon</i> | Endangered |
| Northern Elephant Seal | <i>Mirounga angustirostris</i> | |
| SEA TURTLES | | |
| Green Turtle | <i>Chelonia mydas</i> | Threatened |
| Hawksbill Turtle | <i>Eretmochelys imbricata</i> | Endangered |
| Leatherback Turtle | <i>Dermochelys coriacea</i> | Endangered |

| Common Name | Scientific Name | ESA Listing |
|---------------------|------------------------------|-------------|
| Olive Ridley Turtle | <i>Lepidochelys olivacea</i> | Threatened |

⁽¹⁾ Dugongs are under the jurisdiction of the U.S. Fish and Wildlife Service.

The permit is a reissuance of a permit for an existing facility. No new construction, new pipelines, land, habitat, or hydrology alterations are associated with the permit reissuance. The effluent limits in the permit will not result in acute or chronic exposures to contaminants that would affect federally listed threatened and endangered species, or impair any designated critical habitat. The effluent limits and monitoring requirements in the permit are designed to be fully protective of the beneficial uses of the receiving waters.

Thus, EPA believes that this permit reissuance will not affect any federally listed threatened and endangered species under the NOAA National Marine Fisheries or U.S. Fish and Wildlife Services jurisdictions that may be present in the area of discharge. If, in the future, EPA obtains information or is provided information that indicates that there could be adverse impacts to federally listed species, EPA will contact the appropriate agency or agencies and initiate consultation, to ensure that such impacts are minimized or mitigated.

B. 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 Part 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. On September 3, 2010, the Guam Bureau of Statistics and Plans issued their concurrence with the permittee determination of Federal Consistency.

C. 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) in marine environments. Apra Harbor connects to the Philippine Sea and is considered a marine ecosystem, thus federal requirements of the MSA apply to EPA's proposed action to issue an NPDES permit to discharge into Apra Harbor. Therefore, EPA is required to make a determination on whether this action may adversely impact EFH, as defined under the MSA. EPA has determined that reissuance of the NPDES permit for the Guam Shipyard will not adversely affect impact EFH, as defined under the MSA.

EPA has provided the National Marine Fisheries Service with copies of this fact sheet and the draft permit during the public notice period.

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 either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to federal requirements of NHPA and 36 CFR 800.3(a)(1), EPA has determined that the permit does not have the potential to affect any historic or cultural properties.

PART X - ADMINISTRATIVE INFORMATION

A. Public Notice.

In accordance with 40 CFR 124.10, the EPA Director shall give public notice that a proposed permit has been prepared under 40 CFR 124.6(d) 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. The public notice shall allow at least 30 days for public comment on the draft permit.

B. Public Comment Period.

In accordance with 40 CFR 124.11 and 124.12, during the public comment period, any interested person may submit written comments on the proposed 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 by the close of the public comment period.

Comments must be submitted either in person or mailed to:

Regional Administrator
U.S. Environmental Protection Agency
Region 9., Attn: CMD-5
75 Hawthorne Street
San Francisco, California 94105
Telephone: (415) 972-3769

Administrator
Guam EPA
P.O. Box 22349 GMF
Barrigada, Guam 96921
(671) 475-1660/1661

Interested persons may obtain further information, including copies of the permit application, fact sheet, and proposed permit, by contacting Jamie Marincola via email (Marincola.jamespaul@epa.gov), telephone (415-972-3520) or at the EPA Region 9 address listed above. Copies of the Administrative Record (other than those which EPA Region 9 maintains as confidential) are available for public inspection between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday (excluding federal holidays).

C. Public Hearing.

In accordance with 40 CFR 124.12, the EPA Director shall hold a public hearing whenever 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.

D. Territorial Certification.

In accordance with 40 CFR 124.53, under section 401 of the CWA, EPA may not issue a permit until certification is granted or waived in accordance with that section by the State or Territory in which the discharge originates. Territorial 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. In a letter dated May 18th, 2010, Guam EPA issued their 401 Water Quality Certification for Guam Shipyard. The certification stipulated several conditions which must be complied with as enforced by Title 10, Chapter 47, GCA Water Pollution Control Act, Section 47111: penalties as amended by Public Law 17-87. The letter and certification are included with this fact sheet (Appendix D).

PART XI - REFERENCES

GEPA (Guam Environmental Protection Agency). 2001. *Guam Water Quality Standards*. Guam Environmental Protection Agency.

USEPA (U.S. Environmental Protection Agency). 2008. Draft National Pollutant Discharge Elimination System (NPDES) Vessel General Permits for Discharges Incidental to the Normal Operation of Vessels, U.S. Environmental Protection Agency, Office of Water. *Fed Regist.*, June 17, 2008, 73:34296.

USEPA. 2002. *Fact Sheet, Guam Shipyard, NPDES Permit No. GU0020362*. Environmental Protection Agency, Region 9.

USEPA. 2003. *Fact Sheet for Southwest Marine of Samoa, Inc. for reissuance of NPDES Permit No. AS0020036*. Environmental Protection Agency, Region 9.

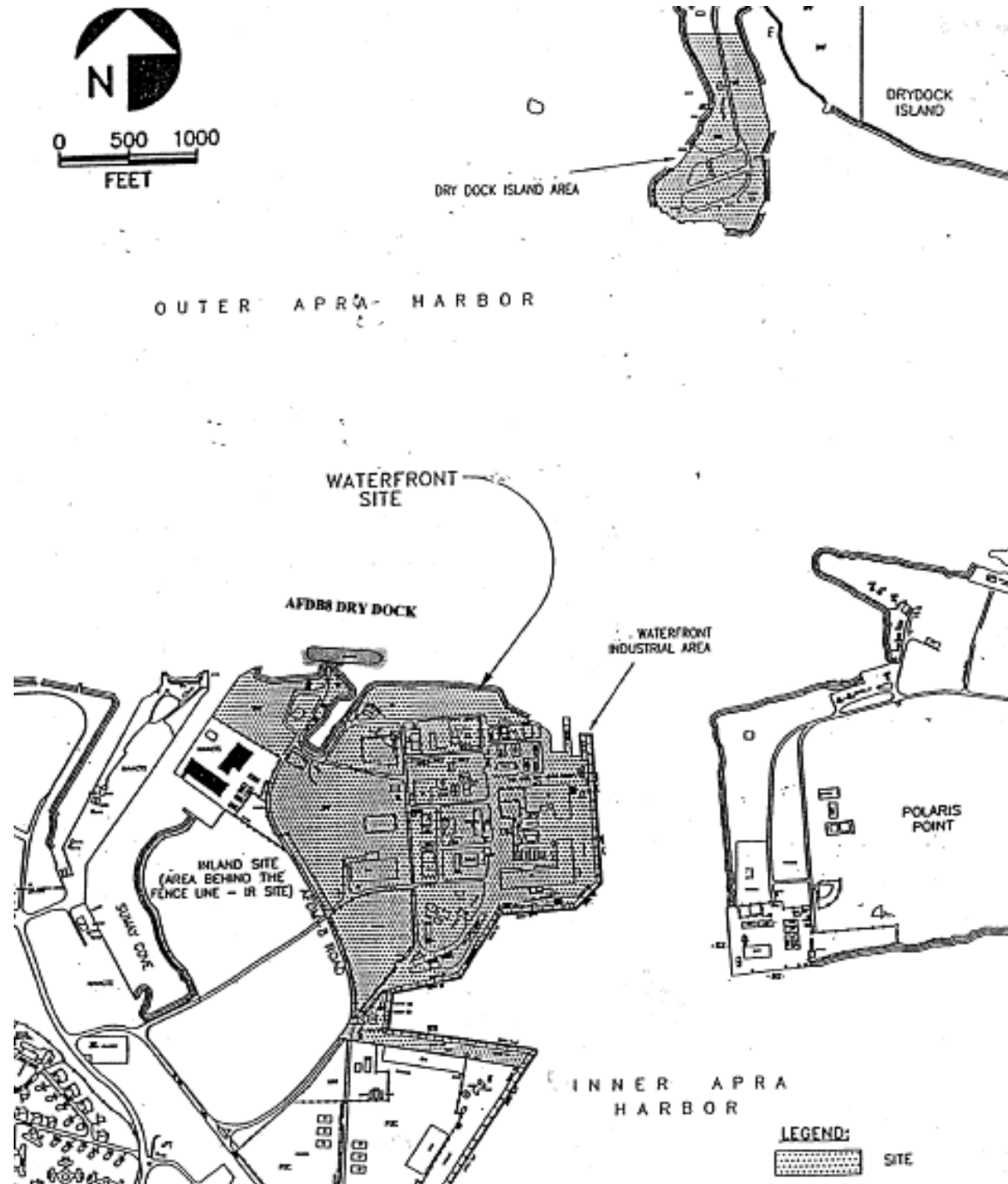
USEPA. 2008. Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges From Industrial Activities, U.S. Environmental Protection Agency, Office of Water. *Fed Regist.*, September 29, 2008, 73:56572.

USEPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. U.S. Environmental Protection Agency, Office of Water Enforcement and Permits, March 1991. EPA/505/2-90-001.

PART XII - APPENDICIES

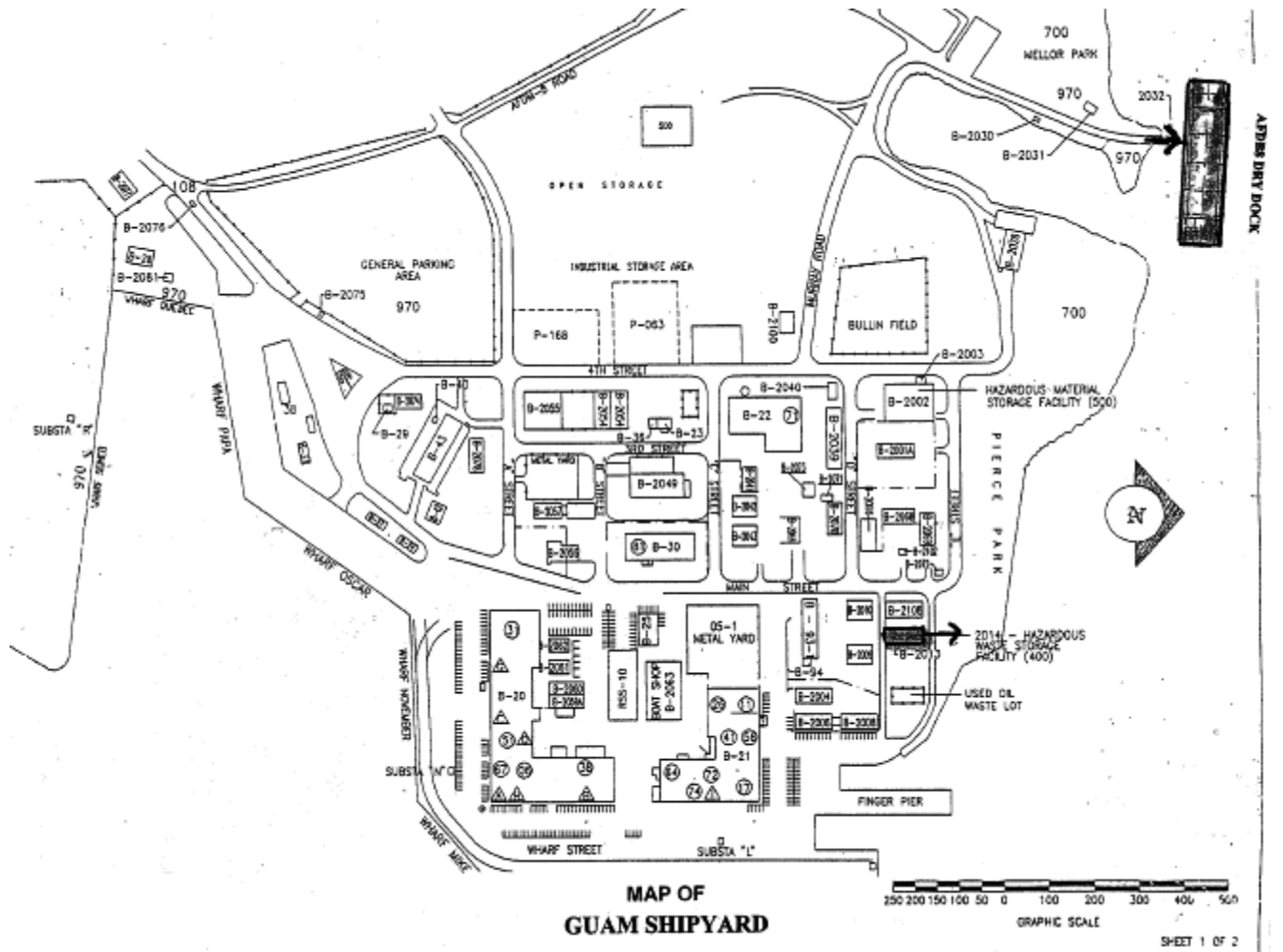
APPENDIX A

Location of Guam Shipyard in Apra Harbor



APPENDIX B

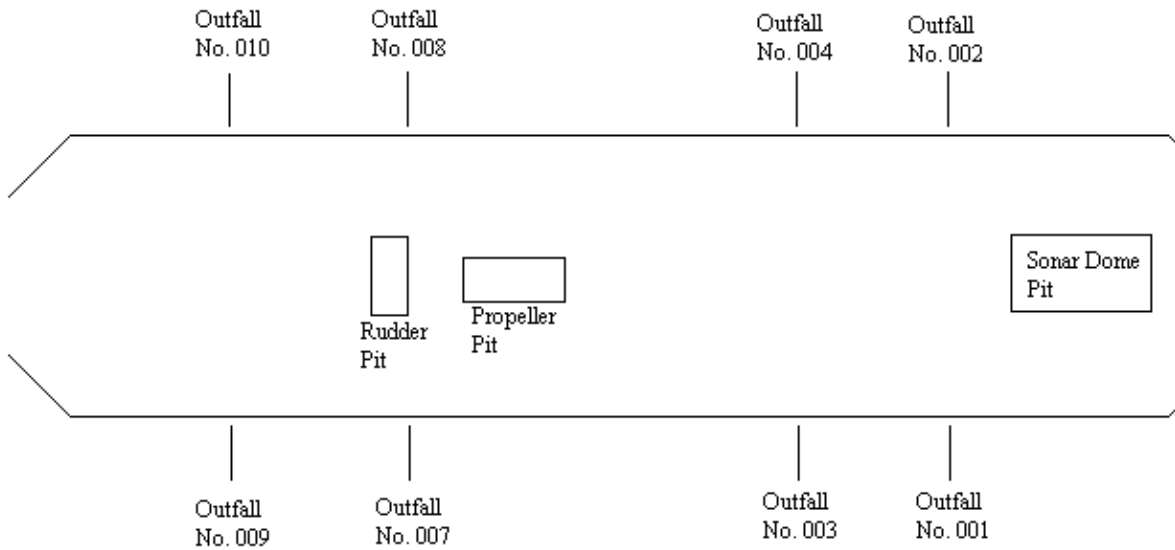
Facility Diagram for Guam Shipyard



US EPA ARCHIVE DOCUMENT

APPENDIX C

Outfall Serial Locations for Storm Water and Unit-in-dock Wash Water



APPENDIX D

Section 401 Water Quality Certification for NPDES Permit No. GU0020362