National Pollutant Discharge Elimination System Permit

issued to

Electric Boat Corporation
75 Eastern Point Road
Groton, CT 06340

Location Address:
Electric Boat Corporation
75 Eastern Point Road
Groton, CT 06340

Permit ID: CT0003824

Effective Date: October 1, 2024

Receiving Stream: Thames River

Issuance Date: September 18, 2024

Stream Segment ID: CT-E1_014-SB

Permit Expires: September 30, 2029

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and Section 402(b) of the Clean Water Act, as amended, 33 USC 1251, et. seq., and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer an N.P.D.E.S. permit program.

(B) **Electric Boat Corporation,** ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to Section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of Section 22a-430-3.

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)

(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4 Procedures and Criteria

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(s) Treatment Requirements for Metals and Cyanide

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under Section 22a-438 or 22a-131a of the CGS or in accordance with Section 22a-6, under Section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Energy and Environmental Protection ("Commissioner"). To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in Section 22a4307 of the RCSA.

(I) The Permittee shall operate and maintain its collection and treatment system in accordance with its Operation and Maintenance Plan and with any approvals in accordance with RCSA Section 22a-430-3(i)(3).

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in Section 22a-423 of the CGS and Section 22a-430-3(a) and 22a-430-6 of the RCSA, except for "No Observable Acute Effect Level (NOAEL)" which is redefined below.

(B) In addition to the above, the following definitions shall apply to this permit:

"----" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the Discharge Monitoring Report (DMR).

"40 CFR" means Title 40 of the Code of Federal Regulations.

"Average Monthly Limit"; means the maximum allowable "Average Monthly Concentration" as defined in Section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g. mg/l); otherwise, it means "Average Monthly Discharge Limitation" as defined in Section 22a-430-3(a) of the RCSA.

"Composite" means a sample collected over a specified period of time in order that the results are representative of the monitored activity over the same time period.

"Critical Test Concentration (CTC)" means the specified effluent dilution at which the Permittee is to conduct a single-concentration Aquatic Toxicity test.

"CWIS" means Cooling Water Intake Structure.

"Daily composite" means (1) a composite sample taken over a full operating day consisting of grab samples collected at equal intervals of no more than sixty (60) minutes and combined proportionally to flow, or (2) a composite sample continuously collected over a full operating day proportionally to flow.

"Daily Concentration" means the concentration of a substance as measured in a daily composite sample, or the arithmetic average of all grab sample results defining a grab sample average.

"Daily Quantity" means the quantity of waste discharged during an operating day.

"GD" means graving dock.

"GPD" means gallons per day.

"GPH" means gallons per hour.

"Grab sample" means an individual sample collected in less than fifteen minutes.

"Grab sample average" means the arithmetic average of all grab sample analyses. Grab samples shall be collected at least once every four hours over a full operating day for as long as a discharge exists on that day (minimum of two grab samples per day).

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"Instream Waste Concentration (IWC)" means the concentration of a discharge in the receiving water after mixing has occurred in the allocated zone of influence.

"Maximum Daily Limit", means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g. mg/l); otherwise, it means the maximum allowable "Daily Quantity" as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity, it means “Maximum Daily Flow” as defined in Section 22a-430-3(a) of the RCSA.

"NA" as a Monitoring Table abbreviation means “not applicable”.

"NR" as a Monitoring Table abbreviation means “not required”.

"No Observable Acute Effect Level (NOAEL)" means any concentration equal to or less than the critical test concentration in a single concentration (pass/fail) toxicity test conducted pursuant to Section 22a-430-3(j)(7)(A)(i) of the RCSA, demonstrating 90% or greater survival of test organisms at the CTC.

"Quarterly", in the context of a sampling frequency, means sampling is required in the months of January, April, July, and October.

"Range During Month" ("RDM"), as a sample type, means the lowest and the highest values of all of the monitoring data for the reporting month.

"Range During Sampling" ("RDS"), as a sample type, means the maximum and minimum of all values recorded as a result of analyzing each grab sample of; 1) a Composite Sample, or, 2) a Grab Sample Average. For those permittees with continuous monitoring and recording pH meters, Range During Sampling means the maximum and minimum readings recorded with the continuous monitoring device during the Composite or Grab Sample Average sample collection.

“Reporting Frequency” means the frequency at which monitoring results must be provided.

"Semi Annually" in the context of a sampling frequency, means the sample must be collected in the months of January and July.

"ZOI" means zone of influence.

"µg/l" means micrograms per liter.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner has issued a final determination and found that 1) with respect to DSN 001-E and DSN 002-C, continuance of the existing systems to treat the discharges when necessary would protect the waters of the state from pollution; 2) with respect to DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 002-A, DSN 002-B, DSN 003-1, DSN 004-1, DSN 007-A, and DSN 007-B, continuance of the existing discharges would not cause pollution of the waters of the state; and 3) with respect to DSN 001-G, DSN 001-H, DSN 002-D, DSN 002-E, DSN 002-F, DSN 002-G, DSN 003-2, DSN 003-3, DSN 003-4, DSN 003-5, DSN 003-6, DSN 003-7, DSN 003-8, DSN 003-9, DSN 003-10, DSN 003-11, DSN 003-12, DSN 003-13, DSN 004-2, DSN 004-3, DSN 004-4, DSN 004-5, DSN 004-6, DSN 004-7, DSN 004-8, DSN 004-9, DSN 004-10, DSN 101-1, DSN 101-2, DSN 101-3, DSN 101-4, DSN 101-5, DSN 101-6, DSN 101-7, DSN 101-8, DSN 101-9, DSN 102-1, DSN 102-2, DSN 102-3, DSN 102-4, DSN 102-5, DSN 102-6, DSN 102-7, DSN 102-8, DSN 102-9, DSN 103-1, DSN 103-2, DSN 103-3, DSN 103-4, DSN 103-5, DSN 104-1, DSN 104-2, DSN 104-3, DSN 104-4, DSN 104-5, DSN 104-6, DSN 104-7, DSN 104-8, DSN 104-9, DSN 104-10, DSN 105-1, DSN 105-2, DSN 105-3, DSN 105-4, DSN 106-1 and DSN 106-2, such discharge would not cause pollution of the waters of the state. The Commissioner's decision is based on Application No. 201006743 for permit reissuance, received on December 16, 2010, and the administrative record established in the processing of that application.

(B) Upon the effective date of this permit and continuing until this permit expires or is modified or revoked, the Commissioner hereby authorizes the Permittee to discharge in accordance with the terms and conditions of this permit, the information provided in Application No. 201006743 received by the Commissioner on December 16, 2010, the administrative record established in the processing of that application, and all modifications and approvals issued by the Commissioner or the Commissioner's authorized agent for the discharge and/or activities authorized by, or associated with this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

(D) This permit includes an interim determination regarding Section 316(a) of the federal Water Pollution Control Act 33 U.S.C. § 1326(a) regarding the thermal component of the discharge, and compliance with this permit is sufficient to assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving waters.

(E) This permit includes the Commissioner's determination regarding the Permittee's Cooling Water Intake Structures in accordance with Section 316(b) of the federal Water Pollution Control Act, 33 U.S.C. § 1326(b) and Conn. Gen. Stat. § 22a-430. Compliance with this permit, specifically Sections 7 and 10, constitutes Best Technology Available.

(F) Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

SECTION 4: GENERAL EFFLUENT LIMITATIONS

(A) The Permittee shall assure that the surface water affected by the subject discharge shall conform to the *Connecticut Water Quality Standards*.

(B) No discharge shall contain, or cause in the receiving stream, a visible oil sheen or floating solids, or cause visible discoloration or foaming in the receiving stream.

(C) No discharge shall cause acute or chronic toxicity in the receiving water body beyond any zone of influence specifically allocated to that discharge in this permit.

(D) The temperature of any discharge shall not increase the temperature of the receiving stream above 83°F, or, in any case, raise the normal temperature of the receiving stream more than 4°F, beyond the approved zone of influence. The incremental temperature increase in coastal and marine waters is limited to 1.5°F during the period including July, August, and September.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharge is restricted by and shall be monitored in accordance with the following tables in this section. The wastewater discharge shall not exceed the effluent limitations in these tables and shall otherwise conform to the specific terms and conditions listed in the tables.

(B) All samples shall be comprised of only the wastewater described in this table. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. All samples collected shall be representative of the discharge during standard operating conditions.

(C) In cases where limits and sample type are specified but sampling is not required by this permit, the limits specified shall apply to all samples which may be collected and analyzed by DEEP personnel, the Permittee, or other parties.

(D) The Permittee shall comply with the "Remarks" and "Footnotes" noted in the tables that follow. Such remarks and footnotes are enforceable like any other term or condition of this permit.

TABLE A

Discharge Serial Number: 001-A | **Monitoring Location:** 1

Wastewater Description:

1. Partially or fully flooded GD #1 dewatering after the arrival of a vessel. Discharge occurs for 6 hours over 1-2 operating days per event, 1-3 times per year.
2. Partially or fully flooded GD #1 dewatering after wet berth of a vessel in an enclosed dock. Discharge occurs for 6 hours over 1-2 operating days per event, 1-3 times per year.
3. Partially or fully flooded GD #1 dewatering after undocking a vessel or for maintenance. Discharge occurs for 4-6 hours per event, 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, pump seal water, stormwater, incidental precipitation, and ballast water.

Monitoring Location Description: At Stormwater outfall #16 of GD #1 (GDs #1 & # 2 Sluice Gate)

Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria)
Instream waste concentration (IWC) for total residual oxidants (as chlorine) for acute criteria: 15%
Instream waste concentration (IWC) for total residual oxidants (as chlorine) for chronic criteria: 4.2%

Allocated Site-wide ZOI for copper: 21,660,000 gph
Allocated ZOI for total residual oxidants (as chlorine): 10,747,677 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency[2]	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total [5]	µg/l	01042	NA	---	Monthly	Daily Composite	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	11,413,703	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average	15	NR	NA	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	NA	---	Monthly	Grab Sample Average	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Daily Composite	NA	NR	NA	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	86	Monthly	Grab Sample Average	129	NR	Grab	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] See Table X for water quality-based site-wide mass copper limits. The mass of copper shall be calculated and reported as specified in Table X.

TABLE B

Discharge Serial Number: 001-B | **Monitoring Location:** 1

Wastewater Description:

1. Opening the gate to dewater GD #1 in preparation to receive a vessel. Discharge occurs instantaneously 1-3 times per year.
2. Opening the gate to dewater GD #1 after wet berth of a vessel in an enclosed dock. Discharge occurs instantaneously 1-3 times per year.
3. Opening the gate to dewater GD #1 in preparation to receive a vessel or for dock maintenance. Discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, pump seal water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation.

Monitoring Location Description: Inside GD #1 following flood-up with vessel in the dock

Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria)
Instream waste concentration (IWC) for copper and total residual oxidants (as chlorine) for acute criteria: 15%
Instream waste concentration (IWC) for copper and total residual oxidants (as chlorine) for chronic criteria: 4.2%

Allocated Site-wide ZOI for copper: 21,660,000 gph
Allocated ZOI for copper and total residual oxidants (as chlorine): 10,747,677 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Composite[6]	NA	NR	NA	
Chromium, Total	µg/l	01034	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Copper, Total[5]	µg/l	01042	NA	---	Monthly	Composite[6]	NA	NR	Grab	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	11,413,703	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[7]	15	NR	Grab	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	NA	---	Monthly	Grab Sample Average[7]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[6]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	598	Monthly	Composite[6]	897	NR	Grab	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	86	Monthly	Grab Sample Average[7]	129	NR	Grab	*

TABLE B	
Discharge Serial Number: 001-B	**Monitoring Location:** 1
Wastewater Description: 1. Opening the gate to dewater GD #1 in preparation to receive a vessel. Discharge occurs instantaneously 1-3 times per year. 2. Opening the gate to dewater GD #1 after wet berth of a vessel in an enclosed dock. Discharge occurs instantaneously 1-3 times per year. 3. Opening the gate to dewater GD #1 in preparation to receive a vessel or for dock maintenance. Discharge occurs instantaneously 1-3 times per year. Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, pump seal water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation.	
Monitoring Location Description: Inside GD #1 following flood-up with vessel in the dock	
Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria) **Instream waste concentration (IWC) for copper and total residual oxidants (as chlorine) for acute criteria:** 15% **Instream waste concentration (IWC) for copper and total residual oxidants (as chlorine) for chronic criteria:** 4.2%	**Allocated Site-wide ZOI for copper:** 21,660,000 gph **Allocated ZOI for copper and total residual oxidants (as chlorine):** 10,747,677 gph

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] See Table X for water quality-based site-wide mass copper limits. The mass of copper shall be calculated and reported as specified in Table X.

[6] Composite sample shall consist of a minimum of six aliquots collected from the graving dock basin and combined into one sample. The six aliquots shall be collected from two opposite corners of the graving dock. Three aliquots shall be collected from each corner. One aliquot shall be collected at the top of the water depth, one aliquot shall be collected from the middle of the water depth (approximately 25 feet below the surface), and one aliquot shall be collected from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

[7] Grab sample average means the arithmetic average of results from six grab samples collected from two opposite corners of the graving dock. Three grab samples shall be collected from each corner. One grab sample shall be collected at the top of the water depth, one from the middle of the water depth (approximately 25 feet below the surface), and one from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

TABLE C

Discharge Serial Number: 001-C | **Monitoring Location:** 1

Wastewater Description:

1. Partially or fully flooded GD #2 dewatering after the arrival of a vessel. Discharge occurs for 10 hours over 1-2 operating days per event, 1-3 times per year.
2. Partially or fully flooded GD #2 dewatering immediately after wet berth of a vessel in an enclosed dock. Discharge occurs for 10 hours over 1-2 operating days per event, 1-3 times per year.
3. Partially or fully flooded GD #2 dewatering immediately after undocking a vessel or for maintenance. Discharge occurs for 6-10 hours per event, 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, pump seal water, stormwater, incidental precipitation, and ballast water.

Monitoring Location Description: At Stormwater outfall #16 of Graving Dock #2 (GDs #1 & # 2 Sluice Gate)

Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria) | **Allocated Site-wide ZOI for copper:** 21,660,000 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 95% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 95% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent[4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total[5]	µg/l	01042	NA	---	Monthly	Daily Composite	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	17,948,947	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Daily Composite	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] See Table X for water quality-based site-wide mass copper limits. The mass of copper shall be calculated and reported as specified in Table X.

TABLE D

Discharge Serial Number: 001-D | **Monitoring Location:** 1

1. Opening the gate to dewater GD #2 after vessel maintenance or repair. Discharge occurs instantaneously 1-3 times per year.
2. Opening the gate to dewater GD #2 after wet berth of a vessel in an enclosed dock. Discharge occurs instantaneously 1-3 times per year.
3. Opening the gate to dewater GD #2 in preparation to receive a vessel or for dock maintenance. Discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, pump seal water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation.

Monitoring Location Description: Inside Graving Dock #2 prior to opening gate

Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria)
Instream waste concentration (IWC) for total residual oxidants (as chlorine) for acute criteria: 14.3%
Instream waste concentration (IWC) for total residual oxidants (as chlorine) for chronic criteria: 6.5%

Allocated Site-wide ZOI for copper: 21,660,000 gph
Allocated ZOI for total residual oxidants (as chlorine): 10,747,677 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 95% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 95% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent [4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Composite[6]	NA	NR	NA	
Chromium, Total	µg/l	01034	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Copper, Total[5]	µg/l	01042	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	17,948,947	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[7]	15	NR	Grab	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	NA	---	Monthly	Grab Sample Average[7]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[6]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	628	Monthly	Composite[6]	942	NR	Grab	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	91	Monthly	Grab Sample Average	137	NR	Grab	*

TABLE D	
Discharge Serial Number: 001-D	**Monitoring Location:** 1
1. Opening the gate to dewater GD #2 after vessel maintenance or repair. Discharge occurs instantaneously 1-3 times per year. 2. Opening the gate to dewater GD #2 after wet berth of a vessel in an enclosed dock. Discharge occurs instantaneously 1-3 times per year. 3. Opening the gate to dewater GD #2 in preparation to receive a vessel or for dock maintenance. Discharge occurs instantaneously 1-3 times per year. Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, pump seal water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation.	
Monitoring Location Description: Inside Graving Dock #2 prior to opening gate	
Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria) **Instream waste concentration (IWC) for total residual oxidants (as chlorine) for acute criteria:** 14.3% **Instream waste concentration (IWC) for total residual oxidants (as chlorine) for chronic criteria:** 6.5%	**Allocated Site-wide ZOI for copper:** 21,660,000 gph **Allocated ZOI for total residual oxidants (as chlorine):** 10,747,677 gph

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] See Table X for water quality-based site-wide mass copper limits. The mass of copper shall be calculated and reported as specified in Table X.

[6] Composite sample shall consist of a minimum of six aliquots collected from the graving dock basin and combined into one sample. The six aliquots shall be collected from two opposite corners of the graving dock. Three aliquots shall be collected from each corner. One aliquot shall be collected at the top of the water depth, one aliquot shall be collected from the middle of the water depth (approximately 25 feet below the surface), and one aliquot shall be collected from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

[7] Grab sample average means the arithmetic average of results from six grab samples collected from two opposite corners of the graving dock. Three grab samples shall be collected from each corner. One grab sample shall be collected at the top of the water depth, one from the middle of the water depth (approximately 25 feet below the surface), and one from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

TABLE E

Discharge Serial Number: 001E | **Monitoring Location:** 1

Wastewater Description: Continuous dewatering to maintain dryness in GD #1 and GD #2.
Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface washwater, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, pump seal water, stormwater, and incidental precipitation.

Monitoring Location Description: At Stormwater outfall #16 (GDs #1 & # 2 Sluice Gate - Stripper pumps)

Instream waste concentration (IWC) for copper, total residual oxidants (as chlorine), lead and nickel: 5.5%

Allocated ZOI for copper, total residual oxidants (as chlorine), lead and nickel: 1,148,190 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Weekly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 37% [4]	%	TDA3E	NA	≥ 90% survival	Monthly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 37% [4]	%	TDA6A	NA	≥ 90% survival	Monthly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Monthly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Monthly	Daily Composite	NA	NR	NA	
Chronic Aquatic Toxicity (Survival) Mysidopsis bahia[4]	%	TOP3E	NA	---	Annually	Daily Composite	NR	NA	NA	
Chronic Aquatic Toxicity (Reproduction) Mysidopsis bahia[4]	%	TPP3E	NA	---	Annually	Daily Composite	NR	NA	NA	
Chronic Aquatic Toxicity (Survival) Cyprinodon variegatus[4]	%	TOP6A	NA	---	Annually	Daily Composite	NR	NA	NA	
Chronic Aquatic Toxicity (Growth) Cyprinodon variegatus[4]	%	TPP6A	NA	---	Annually	Daily Composite	NR	NA	NA	
Chromium, Total	µg/l	01034	---	---	Weekly	Daily Composite	NA	NR	NA	*
Copper, Total	µg/l	01042	---	---	Weekly	Daily Composite	NA	NR	NA	*
Copper, Total	kg/d	01042	0.172	0.530	Weekly	Daily Composite	NA	NR	NA	
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow rate, (Average Daily)	gpd	00056	1,600,000	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	3,686,400	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Weekly	Daily Composite	NA	NR	NA	*
Lead, Total	kg/d	01051	0.456	1.403	Weekly	Daily Composite	NA	NR	NA	
Mercury, Total	µg/l	71900	0.051	0.15	Monthly	Daily Composite	0.23	NR	NA	
Nickel, Total	µg/l	01067	---	---	Monthly	Daily Composite	NA	NR	NA	

TABLE E

Discharge Serial Number: 001E | **Monitoring Location:** 1

Wastewater Description: Continuous dewatering to maintain dryness in GD #1 and GD #2.
Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface washwater, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, pump seal water, stormwater, and incidental precipitation.

Monitoring Location Description: At Stormwater outfall #16 (GDs #1 & # 2 Sluice Gate - Stripper pumps)

Instream waste concentration (IWC) for copper, total residual oxidants (as chlorine), lead and nickel: 5.5%

Allocated ZOI for copper, total residual oxidants (as chlorine), lead and nickel: 1,148,190 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Nickel, Total	kg/d	01067	0.547	1.629	Monthly	Daily Composite	NA	NR	NA	
Total Nitrogen, Total	mg/l	51445	---	---	Weekly	Daily Composite	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Weekly	Grab Sample Average	15	NR	NA	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	---	---	Weekly	Grab Sample Average	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Weekly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Weekly	Grab	
Polynuclear aromatic hydrocarbons (PAHs)	µg/l	22456	NA	NA	NR	NA	---	Monthly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Weekly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Weekly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	---	---	Weekly	Daily Composite	NA	NR	NA	*
Zinc, Total	kg/d	01092	---	---	Weekly	Daily Composite	NA	NR	NA	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	82	237	Weekly	Grab Sample Average	237	NR	Grab	

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remark:

The Permittee shall report the maximum temperature of the discharge for each sampling month.

TABLE F

Discharge Serial Number: 001G | **Monitoring Location:** 1

Wastewater Description: Tidal discharge from a flooded GD#1 with a vessel in wet berth with gate valves opened. Discharge occurs 1-3 times per year about twice per day. Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation.

Monitoring Location Description: Inside GD #1 prior to tidal discharge

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	2,608,846	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[6]	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average[6]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of six aliquots collected from the graving dock basin and combined into one sample. The six aliquots shall be collected from two opposite corners of the graving dock. Three aliquots shall be collected from each corner. One aliquot shall be collected at the top of the water depth, one aliquot shall be collected from the middle of the water depth (approximately 25 feet below the surface), and one aliquot shall be collected from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

[6] Grab sample average means the arithmetic average of results from six grab samples collected from two opposite corners of the graving dock. Three grab samples shall be collected from each corner. One grab sample shall be collected at the top of the water depth, one from the middle of the water depth (approximately 25 feet below the surface), and one from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

TABLE G

Discharge Serial Number: 001H | **Discharge Serial Number:** 001H

Wastewater Description: Tidal discharge from flooded GD#2 with a vessel in wet berth with gate valves opened. Discharge occurs 1-3 times per year about twice per a day. Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation.

Monitoring Location Description: Inside Graving Dock #2 prior to tidal discharge

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	4,102,621	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[6]	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average[6]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of six aliquots collected from the graving dock basin and combined into one sample. The six aliquots shall be collected from two opposite corners of the graving dock. Three aliquots shall be collected from each corner. One aliquot shall be collected at the top of the water depth, one aliquot shall be collected from the middle of the water depth (approximately 25 feet below the surface), and one aliquot shall be collected from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

[6] Grab sample average means the arithmetic average of results from six grab samples collected from two opposite corners of the graving dock. Three grab samples shall be collected from each corner. One grab sample shall be collected at the top of the water depth, one from the middle of the water depth (approximately 25 feet below the surface), and one from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

TABLE H

Discharge Serial Number: 002A | **Monitoring Location:** 1

Wastewater Description:

1. Opening the caisson gate to release water from a flooded GD #3 following new construction or maintenance/repair. Discharge occurs instantaneously 1-3 times per year.
2. Opening the caisson gate to release water from a flooded GD #3 after wet berth of a vessel in an enclosed dock. Discharge occurs instantaneously 1-3 times per year.
3. Opening the caisson gate to release water from a flooded GD #3 in preparation to receive a vessel or for dock maintenance. Discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation.

Monitoring Location Description: Inside Graving Dock #3 prior to opening gate of flooded dock to launch vessel

Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria)
Instream waste concentration (IWC) total residual oxidants (as chlorine): 9.6%

Allocated Site-wide ZOI for copper: 21,660,000 gph
Allocated ZOI for total residual oxidants (as chlorine): 10,915,306 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 64% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 64% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent [4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Composite[6]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent[4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Composite[6]	NA	NR	NA	
Chromium, Total	µg/l	01034	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Copper, Total [5]	µg/l	01042	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	27,731,574	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Monthly	Composite[6]	NA	NR	NA	*
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[7]	15	NR	Grab	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	NA	---	Monthly	Grab Sample Average[7]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[6]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Composite[6]	NA	NR	NA	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	128	Monthly	Grab Sample Average[7]	172	NR	Grab	*

TABLE H

Discharge Serial Number: 002A | **Monitoring Location:** 1

Wastewater Description:

1. Opening the caisson gate to release water from a flooded GD #3 following new construction or maintenance/repair. Discharge occurs instantaneously 1-3 times per year.
2. Opening the caisson gate to release water from a flooded GD #3 after wet berth of a vessel in an enclosed dock. Discharge occurs instantaneously 1-3 times per year.
3. Opening the caisson gate to release water from a flooded GD #3 in preparation to receive a vessel or for dock maintenance. Discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation.

Monitoring Location Description: Inside Graving Dock #3 prior to opening gate of flooded dock to launch vessel

Site-wide Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria)
Instream waste concentration (IWC) total residual oxidants (as chlorine): 9.6%

Allocated Site-wide ZOI for copper: 21,660,000 gph
Allocated ZOI for total residual oxidants (as chlorine): 10,915,306 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] See Table X for water quality-based site-wide mass copper limits. The mass of copper shall be calculated and reported as specified in Table X.

[6] Composite sample shall consist of a minimum of six aliquots collected from the graving dock basin and combined into one sample. The six aliquots shall be collected from two opposite corners of the graving dock. Three aliquots shall be collected from each corner. One aliquot shall be collected at the top of the water depth, one aliquot shall be collected from the middle of the water depth (approximately 25 feet below the surface), and one aliquot shall be collected from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

[7] Grab sample average means the arithmetic average of results from six grab samples collected from two opposite corners of the graving dock. Three grab samples shall be collected from each corner. One grab sample shall be collected at the top of the water depth, one from the middle of the water depth (approximately 25 feet below the surface), and one from the bottom of the water depth (approximately 50 feet below the surface) from each corner of the dock.

TABLE I

Discharge Serial Number: 002B | **Monitoring Location:** 1

Wastewater Description:

1. Partially or fully flooded GD #3 dewatering after the arrival of a vessel. This discharge occurs 1-3 times per year for 2-3 operating days per event.
2. Partially or fully flooded GD #3 dewatering immediately after wet berth of a vessel in an enclosed dock. This discharge occurs 1-2 times per year for 2-3 operating days per event.
3. Partially or fully flooded GD #3 dewatering immediately after undocking a vessel or for maintenance occurs 1-3 times per year for 2-3 operating days per event.
4. Partially or fully flooded GD #3 dewatering with a vessel on the pontoon during transfer of a new construction vessel occurs 1-3 times per year for 2-3 operating days per event.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, incidental precipitation, and ballast water.

Monitoring Location Description: Inside Graving Dock #3 prior to discharge

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 64% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 64% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Daily Composite	NA	NR	Grab	*
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	27,731,574	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average	15	NR	Grab	
Oxidants, Total Residual	µg/l	34044	NA	---	Monthly	Grab Sample Average	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Daily Composite	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] See Table X for water quality-based site-wide mass copper limits. The mass of copper shall be calculated and reported as specified in Table X.

TABLE J

Discharge Serial Number: 002C | **Monitoring Location:** 1

Wastewater Description:

1. Continuous dewatering to maintain GD #3 water level below the dry-docked vessel and pontoon surface (-40' mean level water (MLW)) or maintain dock level below 0' MLW for dock maintenance with no vessel present in the dock.
2. Continuous maintenance dewatering to maintain GD #3 water level with a vessel wet-berthed in an enclosed dock.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface wash water, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, stormwater, and incidental precipitation.

Monitoring Location Description: Pump wet well at GD #3

Instream waste concentration (IWC) for copper, total residual oxidants (chlorine) and zinc: 5.5%

Allocated Zone of Influence (ZOI) for copper, total residual oxidants (chlorine) and zinc: 1,315,819 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Weekly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 37% [4]	%	TDA3E	NA	≥ 90% survival	Monthly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 37% [4]	%	TDA6A	NA	≥ 90% survival	Monthly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Monthly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Monthly	Daily Composite	NA	NR	NA	
Chronic Aquatic Toxicity (Survival) Mysidopsis bahia[4]	%	TOP3E	NA	---	Annually	Daily Composite	NR	NA	NA	
Chronic Aquatic Toxicity (Reproduction) Mysidopsis bahia[4]	%	TPP3E	NA	---	Annually	Daily Composite	NR	NA	NA	
Chronic Aquatic Toxicity (Survival) Cyprinodon variegatus[4]	%	TOP6A	NA	---	Annually	Daily Composite	NR	NA	NA	
Chronic Aquatic Toxicity (Growth) Cyprinodon variegatus[4]	%	TPP6A	NA	---	Annually	Daily Composite	NR	NA	NA	
Chromium, Total	µg/l	01034	---	---	Weekly	Daily Composite	NA	NR	NA	*
Copper, Total	µg/l	01042	---	---	Weekly	Daily Composite	NA	NR	NA	*
Copper, Total	kg/d	01042	0.251	0.606	Weekly	Daily Composite	NA	NR	NA	
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow rate, (Average Daily)	gpd	00056	1,833,600	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	2,640,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Weekly	Daily Composite	NA	NR	NA	*

TABLE J

Discharge Serial Number: 002C | **Monitoring Location:** 1

Wastewater Description:

1. Continuous dewatering to maintain GD #3 water level below the dry-docked vessel and pontoon surface (-40' mean level water (MLW)) or maintain dock level below 0' MLW for dock maintenance with no vessel present in the dock.
2. Continuous maintenance dewatering to maintain GD #3 water level with a vessel wet-berthed in an enclosed dock.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface wash water, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, stormwater, and incidental precipitation.

Monitoring Location Description: Pump wet well at GD #3

Instream waste concentration (IWC) for copper, total residual oxidants (chlorine) and zinc: 5.5%

Allocated Zone of Influence (ZOI) for copper, total residual oxidants (chlorine) and zinc: 1,315,819 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Mercury, Total	µg/l	71900	---	---	Monthly	Daily Composite	NA	NR	NA	
Nickel, Total	µg/l	01067	NA	---	Monthly	Daily Composite	NA	NR	NA	
Total Nitrogen, Total	mg/l	51445	---	---	Weekly	Daily Composite	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Weekly	Grab Sample Average	15	NR	NA	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	NA	---	Weekly	Grab Sample Average	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Weekly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Weekly	Grab	
Polynuclear aromatic hydrocarbons (PAHs)	µg/l	22456	NA	NA	NR	NA	---	Monthly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Weekly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Weekly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	---	---	Weekly	Daily Composite	NA	NR	NA	*
Zinc, Total	kg/d	01092	3.817	11.37	Weekly	Daily Composite	NA	NR	NA	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	82	236	Weekly	Grab Sample Average	236	NR	NA	*

TABLE J

Discharge Serial Number: 002C | **Monitoring Location:** 1

Wastewater Description:

1. Continuous dewatering to maintain GD #3 water level below the dry-docked vessel and pontoon surface (-40' mean level water (MLW)) or maintain dock level below 0' MLW for dock maintenance with no vessel present in the dock.
2. Continuous maintenance dewatering to maintain GD #3 water level with a vessel wet-berthed in an enclosed dock.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface wash water, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, stormwater, and incidental precipitation.

Monitoring Location Description: Pump wet well at GD #3

Instream waste concentration (IWC) for copper, total residual oxidants (chlorine) and zinc: 5.5% | **Allocated Zone of Influence (ZOI) for copper, total residual oxidants (chlorine) and zinc:** 1,315,819 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

The Permittee shall report the maximum temperature of the discharge for each sampling month.

TABLE K

Discharge Serial Number: 002D | **Monitoring Location:** 1

Wastewater Description:

1. Partial dewatering of a super flooded GD #3 immediately following wet berth of a vessel in an enclosed dock. This discharge occurs 1-3 times a year for about 5 hours per event.
2. Partial dewatering of a super flooded GD #3 with a vessel on the pontoon during transfer of a new construction vessel. This discharge occurs 1-3 times a year for about 5 hours per event.
3. Partial dewatering of a super flooded GD #3 immediately following dock maintenance. This discharge occurs 1- 3 times a year for about 5 hours per event.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, air conditioning condensate, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation.

Monitoring Location Description: Inside Graving Dock #3 following flood-up with vessel in the dock

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	8,200,000	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[6]	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average[6]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of six aliquot grab samples collected from the graving dock basin and combined into one sample. The six grab samples shall be collected at the top, the middle (approximately 25 feet below the surface), and the bottom (approximately 50 feet below the surface), of the opposite corners of the graving dock.

[6] Grab sample average means the arithmetic average of six aliquot grab sample analyses. The six grab samples shall be collected at the top, the middle (approximately 25 feet below the surface), and the bottom (approximately 50 feet below the surface), of the opposite corners of the graving dock.

TABLE L

Discharge Serial Number: 002E | **Monitoring Location:** 1

Wastewater Description:

1. Tidal discharge from a flooded GD#3 with a vessel in wet berth with the caisson gate valves opened. This discharge occurs 1-3 times a year for about 6 hours about twice in a day.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, pump seal water, stormwater, and incidental precipitation.

Monitoring Location Description: Inside Graving Dock #3 prior to tidal discharge

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	3,521,470	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[6]	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average[6]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Monthly	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of six aliquot grab samples collected from the graving dock basin and combined into one sample. The six grab samples shall be collected at the top, the middle (approximately 25 feet below the surface), and the bottom (approximately 50 feet below the surface), of the opposite corners of the graving dock.

[6] Grab sample average means the arithmetic average of six aliquot grab sample analyses. The six grab samples shall be collected at the top, the middle (approximately 25 feet below the surface), and the bottom (approximately 50 feet below the surface), of the opposite corners of the graving dock.

TABLE M

Discharge Serial Number: 002F | **Monitoring Location:** 1

Wastewater Description: Removal of water from the ballast tanks in the North caisson gate occurs 5-8 times a year for 4 hours per event.

Monitoring Location Description: Ballast tank water prior to caisson gate opening

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	134,000	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[6]	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average[6]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[5]	NA	NR	NA	
Zinc, Total	mg/l	01092	NA	---	Monthly	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquots collected once every hour and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquots analyses collected once every hour. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE N

Discharge Serial Number: 002G | **Monitoring Location:** 1

Wastewater Description: Removal of water from the ballast tanks in the South caisson gate occurs 5-8 times a year for 4 hours per event.

Monitoring Location Description: Ballast tank water prior to caisson gate opening

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Quarterly	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Monthly	Composite[5]	NA	NR	NA	*
Fecal coliform	#/100ml	31641	NA	NA	NR	NA	---	Monthly	Grab	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	134,000	Daily	Total Daily Flow	NA	NR	NA	
Oil and grease, Total	mg/l	00556	NA	10	Monthly	Grab Sample Average[6]	15	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Monthly	Grab Sample Average[6]	NA	NR	NA	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Monthly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Monthly	Grab	
Total Suspended Solids	mg/l	00530	NA	---	Monthly	Composite[5]	NA	NR	NA	
Zinc, Total	mg/l	01092	NA	---	Monthly	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquots collected once every hour and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquots analyses collected once every hour. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE O

Discharge Serial Number: 003-1 | **Monitoring Location:** 1

Wastewater Description: Temporary auxiliary continuous non-contact cooling for shipboard heat exchangers on new vessels under construction in Building 260

Monitoring Location Description: Submarine discharge inside Building # 260 Bay 5

Instream waste concentration (IWC) for copper and total residual oxidants (chlorine): 6.8% | **Allocated Zone of Influence (ZOI) for copper and total residual oxidants (chlorine):** 1,317,998 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total	µg/l	01042	25	71	Quarterly	Daily Composite	107	NR	Grab	*
Flow rate, (Average Daily)	gpd	00056	2,310,000	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	2,880,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Oxidants, Total Residual (as chlorine)	µg/l	34044	62	191	Quarterly	Grab Sample Average	191	NR	Grab	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Quarterly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Quarterly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Quarterly	Continuous	
Total Suspended Solids	mg/l	00530	NA	---	Quarterly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Quarterly	Daily Composite	NA	NR	NA	*

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

a) The Permittee shall report the maximum temperature of the discharge for each sampling quarter.

TABLE P

Discharge Serial Number: 004-1 | **Monitoring Location:** 1

Wastewater Description: Temporary auxiliary continuous non-contact cooling for shipboard heat exchangers on new vessels under construction prior to being moved into Graving Dock #3.

Monitoring Location Description: Submarine discharge inside Building # 263 East end

Instream waste concentration (IWC) for zinc: 6.8% | **Allocated Zone of Influence (ZOI) for zinc:** 2,807,165 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total	µg/l	01042	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Flow rate, (Average Daily)	gpd	00056	4,920,000	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	5,760,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Quarterly	Grab Sample Average	NA	NR	Grab	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Quarterly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Quarterly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Quarterly	Continuous	
Total Suspended Solids	mg/l	00530	NA	---	Quarterly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	658	1320	Quarterly	Daily Composite	1980	NR	NA	*

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

a) The Permittee shall report the maximum temperature of the discharge for each sampling quarter.

TABLE Q										
Discharge Serial Number: 007-A							**Monitoring Location:** 1			
Wastewater Description: Continuous seasonal (typically November–April) freeze protection bleed water from 32 individual outfalls.										
Monitoring Location Description: Sample from freeze protection bleed-off										
Instream waste concentration (IWC) for copper and total residual oxidants: 3.0 %										
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
LC_{50} Static 48 Hr Acute Toxicity, Mysidopsis bahia[4]	%	TAA3E	NA	---	Annually	Composite[5]	NA	NR	NA	
LC50 Static 48 Hr Acute Toxicity, Cyprinodon variegatus[4]	%	TAA6A	NA	---	Annually	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	69	159	Annually	Composite[5]	239	NR	Grab	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	25,920	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Annually	Composite[5]	NA	NR	NA	
Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	µg/l	34044	NA	---	Annually	Grab Sample Average[6]	NA	NR	NA	*
pH (Day of sampling)	S.U.	00400	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Zinc, Total	µg/l	01092	NA	---	Annually	Composite[4]	NA	NR	NA	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
Oxidants, Total Residual (as chlorine)	µg/l	34044	240	277	Annually	Grab Sample Average[6]	277	NR	Grab	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than month, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite samples shall consist of a minimum of three aliquots with equal volumes collected from three different outfalls and proportionally combined.

[6] Grab sample average means the arithmetic average of a minimum of three aliquots analyses collected from three different outfalls.

TABLE R										
Discharge Serial Number: 007-B							**Monitoring Location:** 1			
Wastewater Description: Continuous or intermittent seasonal steam condensate from 33 individual outfalls.										
Monitoring Location Description: Sample from steam condensate purge water										
Instream waste concentration (IWC) for lead: 3.0 %										
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
LC_{50} Static 48 Hr Acute Toxicity, Mysidopsis bahia[4]	%	TAA3E	NA	---	Annually	Composite[4]	NA	NR	NA	
LC50 Static 48 Hr Acute Toxicity, Cyprinodon variegatus[4]	%	TAA6A	NA	---	Annually	Composite[4]	NA	NR	NA	
Copper, Total	µg/l	01042	69	159	Annually	Composite[4]	239	NR	NA	*
Flow rate (Average daily)	gpd	00056	3,600	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	4,986	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	143	430	Annually	Composite[4]	645	NR	Grab	*
Oil and grease, Total	mg/l	00556	NA	---	Annually	Grab Sample Average[5]	NA	NR	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	NA	Annually	Grab Sample Average[5]	NA	NR	Grab	*
pH (Day of sampling) (Ends 24 months after permit's effective date)	S.U.	00400	NA	NA	NR	NA	6.0 – 9.5	Quarterly	Grab	
Total Suspended solids	mg/l	00530	NA	---	NR	NA	NA	NR	NA	
Zinc, Total	µg/l	01092	---	---	Annually	Composite[4]	NA	NR	NA	*
APPLICABLE 24 MONTHS AFTER THE EFFECTIVE DATE OF PERMIT										
pH (Day of sampling)	S.U.	00400	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than month, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] Composite samples shall consist of a minimum of three aliquots with equal volumes collected from three different outfalls and proportionally combined.

[5] Grab sample average means the arithmetic average of a minimum of three aliquots analyses collected from three different outfalls.

TABLE S

Discharge Serial Number: 101-1 | **Monitoring Location:** 1

Wastewater Description: Continuous temporary auxiliary NCCW from Intake 007-T for shipboard heat exchangers on vessels under construction, diesel engine wet exhaust and diesel stack contact cooling water in Building 600. Wastewater may be chlorinated to reduce biofouling.

Monitoring Location Description: Submarine discharge inside Building # 600 TASW room

Instream waste concentration (IWC): 6.8% | **Allocated Zone of Influence (ZOI) for zinc:** 2,065,430 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total	µg/l	01042	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Flow rate, (Average Daily)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	8,064,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Oxidants, Total Residual (as chlorine)	µg/l	34044	---	---	Quarterly	Grab Sample Average	NA	NR	Grab	*
Polynuclear aromatic hydrocarbons (PAHs)	µg/l	22456	NA	NA	NR	NA	---	Quarterly	Grab	
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Quarterly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Quarterly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Quarterly	Continuous	
Total Suspended Solids	mg/l	00530	---	---	Quarterly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	---	---	Quarterly	Daily Composite	1980	NR	NA	*

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

a) The Permittee shall report the maximum temperature of the discharge for each sampling quarter.

TABLE T

Discharge Serial Number: 102-1 | **Monitoring Location:** 1

Wastewater Description: Continuous temporary main NCCW from Intake 008-T for shipboard steam testing operations in Building 600. This discharge occurs continuously for 12 weeks about 1-2 times per year. Wastewater may be chlorinated to reduce biofouling.

Monitoring Location Description: Submarine discharge inside Building # 600 North east end

Instream waste concentration (IWC): 6.8% | **Allocated Zone of Influence (ZOI) for zinc:** 3,366,311 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total	µg/l	01042	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Flow rate, (Average Daily)	gpd	00056	NA	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	6,912,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Oxidants, Total Residual (as chlorine)	µg/l	34044	---	---	Quarterly	Grab Sample Average	NA	NR	Grab	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Quarterly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Quarterly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Quarterly	Continuous	
Total Suspended Solids	mg/l	00530	---	---	Quarterly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	---	---	Quarterly	Daily Composite	1980	NR	NA	*

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

a) The Permittee shall report the maximum temperature of the discharge for each sampling quarter.

TABLE U

Discharge Serial Number: 104-1 | **Monitoring Location:** 1

Wastewater Description: Continuous once-through temporary main NCCW from Intake 004-T used for shipboard testing operations (South discharge). This discharge occurs continuously for 12 weeks about 1-2 times per year. Wastewater may be chlorinated to reduce biofouling.

Monitoring Location Description: Submarine discharge inside Building # 263 East end

Instream waste concentration (IWC) for zinc: 6.8% | **Allocated Zone of Influence (ZOI) for zinc:** 2,807,165 gph

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Aluminum, Total	µg/l	01105	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45% [4]	%	TDA3E	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	%	TDA6A	NA	≥ 90% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent[4]	%	TRB3E	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent [4]	%	TCN6A	NA	≥ 50% survival	Quarterly	Daily Composite	NA	NR	NA	
Copper, Total	µg/l	01042	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Flow rate, (Average Daily)	gpd	00056	4,920,000	NA	Daily	Total Daily Flow	NA	NR	NA	
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	5,760,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	---	---	Quarterly	Daily Composite	NA	NR	NA	*
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Quarterly	Grab Sample Average	NA	NR	Grab	*
pH, Minimum	S.U.	61942	NA	NA	NR	NA	6.8	Quarterly	Grab	
pH, Maximum	S.U.	61941	NA	NA	NR	NA	8.5	Quarterly	Grab	
Temperature	°F	00011	NA	NA	NR	NA	---	Quarterly	Continuous	
Total Suspended Solids	mg/l	00530	NA	---	Quarterly	Daily Composite	NA	NR	NA	
Zinc, Total	µg/l	01092	658	1320	Quarterly	Daily Composite	1980	NR	NA	*

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each quarter.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

a) The Permittee shall report the maximum temperature of the discharge for each sampling month.

TABLE V1

Discharge Serial Number: 105-1 | **Monitoring Location:** 1

Wastewater Description: Biennial dewatering of berthing fender at the east end of GD #1

Monitoring Location Description: At the berthing fender discharge port

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Annually	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Annually	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Annually	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	18,500	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Annually	Composite[5]	NA	NR	NA	*
Nickel, Total	µg/l	01067	NA	---	Monthly	Composite[5]	NA	NR	NA	*
pH, (Day of sampling)	S.U.	61942	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Annually	Grab Sample Average[6]	NA	NR	Grab	*
Total Suspended Solids	mg/l	00530	NA	---	Annually	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Annually	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each year.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquot grab samples collected approximately one hour apart and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquot grab sample analyses collected approximately one hour apart. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE V2

Discharge Serial Number: 105-2 | **Monitoring Location:** 1

Wastewater Description: Biennial dewatering of berthing fender at the west end of GD #1

Monitoring Location Description: At the berthing fender discharge port

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Annually	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Annually	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Annually	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	~~18,500~~	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Annually	Composite[5]	NA	NR	NA	*
Nickel, Total	µg/l	01067	NA	---	Monthly	Composite[5]	NA	NR	NA	*
pH, (Day of sampling)	S.U.	61942	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Annually	Grab Sample Average[6]	NA	NR	Grab	*
Total Suspended Solids	mg/l	00530	NA	---	Annually	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Annually	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each year.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquot grab samples collected approximately one hour apart and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquot grab sample analyses collected approximately one hour apart. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE V3

Discharge Serial Number: 105-3 | **Monitoring Location:** 1

Wastewater Description: Biennial dewatering of berthing fender at the east end of GD #2

Monitoring Location Description: At the berthing fender discharge port

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Annually	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Annually	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Annually	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	18,500	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Annually	Composite[5]	NA	NR	NA	*
Nickel, Total	µg/l	01067	NA	---	Monthly	Composite[5]	NA	NR	NA	*
pH, (Day of sampling)	S.U.	61942	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Annually	Grab Sample Average[6]	NA	NR	Grab	*
Total Suspended Solids	mg/l	00530	NA	---	Annually	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Annually	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each year.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquot grab samples collected approximately one hour apart and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquot grab sample analyses collected approximately one hour apart. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE V4										
Discharge Serial Number: 105-4							**Monitoring Location:** 1			
Wastewater Description: Biennial dewatering of berthing fender at the west end of GD #2										
Monitoring Location Description: At the berthing fender discharge port										
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Annually	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Annually	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Annually	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	18,500	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Annually	Composite[5]	NA	NR	NA	*
Nickel, Total	µg/l	01067	NA	---	Monthly	Composite[5]	NA	NR	NA	*
pH, (Day of sampling)	S.U.	61942	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Annually	Grab Sample Average	NA	NR	Grab	*
Total Suspended Solids	mg/l	00530	NA	---	Annually	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Annually	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each year.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquot grab samples collected approximately one hour apart and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquot grab sample analyses collected approximately one hour apart. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE W1

Discharge Serial Number: 106-1 | **Monitoring Location:** 1

Wastewater Description: Dewatering of river silt on barge during GD #3 demucking operations from the north wing wall. Discharge occurs for approximately 2 weeks every 5 years.

Monitoring Location Description: At the north wing of GD #3

PARAMETER	UNITS	NET DMR CODE	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Per event	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Per event	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Per event	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	300,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Per event	Composite[5]	NA	NR	NA	*
Nickel, Total	µg/l	01067	NA	---	Per event	Composite[5]	NA	NR	NA	*
pH, (Day of sampling)	S.U.	61942	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Per event	Grab Sample Average[6]	NA	NR	Grab	*
Total Suspended Solids	mg/l	00530	NA	---	Per event	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Per event	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each year.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquot grab samples collected approximately one hour apart and combined into one sample. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

[6] Grab sample average means the arithmetic average of a minimum of three aliquot grab sample analyses collected approximately one hour apart. When the duration of the discharge is anticipated to be less than 3 hours, grab samples shall be taken at the beginning, middle and close to the end of the discharge.

TABLE W2										
Discharge Serial Number: 106-2							**Monitoring Location:** 1			
Wastewater Description: Dewatering of river silt on barge during GD #3 demucking operations from the west wing wall. Discharge occurs for approximately 2 weeks every 5 years.										
Monitoring Location Description: At the west wing of GD #3										
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	%	TDA3E	NA	---	Per event	Composite[5]	NA	NR	NA	
Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	%	TDA6A	NA	---	Per event	Composite[5]	NA	NR	NA	
Copper, Total	µg/l	01042	NA	---	Per event	Composite[5]	NA	NR	NA	*
Flow, Maximum during 24 hr period[1]	gpd	50047	NA	300,000	Daily	Total Daily Flow	NA	NR	NA	
Lead, Total	µg/l	01051	NA	---	Per event	Composite[5]	NA	NR	NA	*
Nickel, Total	µg/l	01067	NA	---	Per event	Composite[5]	NA	NR	NA	*
pH, (Day of sampling)	S.U.	61942	NA	NA	NR	NA	6.8 – 8.5	Quarterly	Grab	
Oxidants, Total Residual (as chlorine)	µg/l	34044	NA	---	Per event	Grab Sample Average[6]	NA	NR	Grab	*
Total Suspended Solids	mg/l	00530	NA	---	Per event	Composite[5]	NA	NR	NA	
Zinc, Total	µg/l	01092	NA	---	Per event	Composite[5]	NA	NR	NA	*

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the maximum daily flow for each year.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than quarterly, then the 'Reporting Frequency' is quarterly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] The results of the toxicity tests shall be recorded in % on the DMR.

[5] Composite sample shall consist of a minimum of three aliquot grab samples collected approximately one hour apart and combined into one sample.

[6] Grab sample average means the arithmetic average of a minimum of three aliquot grab sample analyses collected approximately one hour apart.

TABLE X										
Discharge Serial Number: 111										
Wastewater Description: All wastewaters that contribute to copper mass load at Electric Boat site							**Monitoring Location:** SC[1]			
Instream waste concentration (IWC) for copper: 28.5% (Acute criteria), 11.9% (Chronic criteria)							**Allocated ZOI for copper:** 21,660,000 gph			
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**			Minimum Level Test [3]
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Copper, Total [4,5,6]	Kg/d	01042	2.223	4.459	Monthly	Calculated total mass discharged	NA	NR	NA	*

Table Footnotes:

[1] This is a mathematical summation of the total mass of copper from all outfalls specified in footnote 5 and in Attachment A of this permit.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] Minimum Level Test refers to Section 6, Paragraph A(3) of this permit.

[4] To determine compliance with the average monthly and maximum daily limits, the Permittee shall calculate the daily mass discharge of copper in kg/d for each outfall listed in footnote 5 using the following equation: daily concentration of copper (µg/l) X daily discharge flow (gpd) X conversion factor 3.78 kg/gallon X 10^{-9}. The Permittee shall then sum the daily mass discharges from all outfalls listed in footnote 5 to determine the site wide daily mass discharge. The Permittee shall calculate the average monthly and maximum daily site wide mass copper discharges for the month. The site wide average monthly discharge shall be used to determine compliance with the average monthly limit of outfall 111. The site wide maximum daily discharge shall be used to determine compliance with the maximum daily limit of outfall 111. The total mass of copper for each day shall be recorded on the Attachment A of this permit.

[5] To determine compliance with the water quality-based site-wide mass copper limits contained in this table, any day a discharge occurs from DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 002-A or DSN 002-B, copper and flow sampling shall be conducted for discharges occurring the same day from DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 001-E, DSN 001-G, DSN 001-H, DSN 002-A, DSN 002-B, DSN 002-C, DSN 002-D, DSN 002-E, DSN 002-F, DSN 002-G, DSN 003-1, DSN 004-1, DSN 007-A, and DSN 007-B, DSN 101-1, DSN 102-1, DSN 104-1, DSN 105-1, DSN 105-2, DSN 105-3, DSN 105-4, DSN 106-1 and DSN 106-2.

[6] The average and the maximum mass of copper shall be reported on the monthly DMR. The Permittee shall submit completed Attachments A and A1 as attachments to the monthly DMR.

TABLE Y			
Discharge Serial Number: 003-2, 003-3, 003-4, 003-5, 003-6, 003-7, 003-8, 003-9, 003-10, 003-10, 003-12, 003-13, 004-2, 004-3, 004-4, 004-5, 004-6, 004-7, 004-8, 004-9, 004-10, 101-2, 101-3, 101-4, 101-5, 101-6, 101-7, 101-8, 101-9, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-8, 102-9, 103-1, 103-2, 103-3, 103-4, 103-5, 104-2, 104-3, 104-4, 104-5, 104-6, 104-7, 104-8, 104-9, 104-10			**Monitoring Location:** NR
DISCHARGE SERIAL NUMBER	**FLOW, MAXIMUM DURING 24 HR PERIOD (gpd) [1]**	**WASTEWATER DESCRIPTION**	**SAMPLE/REPORTING FREQUENCY**
DSN 003-2	288,000	Continuous bypass to river from Intake 002-T for pump testing. Discharge occurs infrequently about once a year and only if pump testing is required.	**PERMITTEE NOT REQUIRED TO SUBMIT FLOW DATA**
DSN 003-3	43,200	Pump system draining in the supply header from Intake 002-T. Discharge occurs infrequently about once a year and only if pump testing is required.	
DSN 003-4	50	Continuous intake pump gland seal water from Intake 002-T pump #4 when pump is operating.	
DSN 003-5	50	Continuous intake pump gland seal water from Intake 002-T pump #5 when pump is operating.	
DSN 003-6	50	Continuous intake pump gland seal water from Intake 002-T pump #6 when pump is operating.	
DSN 003-7	500	Pump system draining from Intake 002-T pump #4. This discharge occurs infrequently about once a year and only if pump testing is required.	
DSN 003-8	500	Pump system draining from Intake 002-T pump #5. This discharge occurs infrequently about once a year and only if pump testing is required.	
DSN 003-9	500	Pump system draining from Intake 002-T pump #6. This discharge occurs infrequently about once a year and only if pump testing is required.	
DSN 003-10	90	Secondary strainer draining from Intake 002-T. Discharge occurs 1-3 times per day during operation.	
DSN 003-11	230,400	Continuous strainer backwash from Intake 002-T pump #4 when pump is operating.	
DSN 003-12	230,400	Continuous strainer backwash from Intake 002-T pump #5 when pump is operating.	
DSN 003-13	230,400	Continuous strainer backwash from Intake 002-T pump #6 when pump is operating.	
DSN 004-2	6,200	Pump system draining in the supply header from Intake 003-T. Discharge occurs infrequently about once a year and only if pump testing is required.	
DSN 004-3	2	Sampling point header discharge from Intake 003-T. Discharge occurs 1 – 3 times per day during operations.	
DSN 004-4	90	Draining of secondary strainer from Intake 003-T. Discharge occurs 1 – 3 times per day during operations.	
DSN 004-5	50	Continuous intake pump gland seal water from Intake 003-T north pump #1 when pump is operating.	
DSN 004-6	50	Continuous intake pump gland seal water from Intake 003-T north pump #2 when pump is operating	
DSN 004-7	50	Continuous intake pump gland seal water from Intake 003-T north pump #3 when pump is operating	
DSN 004-8	230,400	Continuous strainer backwash from Intake 003-T north pump #1 when pump is operating.	
DSN 004-9	230,400	Continuous strainer backwash from Intake 003-T north pump #2 when pump is operating.	
DSN 004-10	230,400	Continuous strainer backwash from Intake 003-T north pump #3 when pump is operating.	
DSN 101-2	50	Continuous Intake 007-T north pump gland seal water when pump is operating.	
DSN 101-3	50	Continuous Intake 007-T center pump gland seal water when pump is operating.	
DSN 101-4	50	Continuous Intake 007-T south pump gland seal water when pump is operating.	
DSN 101-5	285,120	Continuous Intake 007-T north pump strainer backwash when pump is operating.	
DSN 101-6	285,120	Continuous Intake 007-T center pump strainer backwash when pump is operating.	
DSN 101-7	285,120	Continuous Intake 007-T south pump strainer backwash when pump is operating.	

TABLE Y			
Discharge Serial Number: 003-2, 003-3, 003-4, 003-5, 003-6, 003-7, 003-8, 003-9, 003-10, 003-10, 003-12, 003-13, 004-2, 004-3, 004-4, 004-5, 004-6, 004-7, 004-8, 004-9, 004-10, 101-2, 101-3, 101-4, 101-5, 101-6, 101-7, 101-8, 101-9, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-8, 102-9, 103-1, 103-2, 103-3, 103-4, 103-5, 104-2, 104-3, 104-4, 104-5, 104-6, 104-7, 104-8, 104-9, 104-10			**Monitoring Location:** NR
DSN 101-8	90	Secondary strainer draining from Intake 007-T. Discharges occurs 1-3 times per day during operation.	**PERMITTEE NOT REQUIRED TO SUBMIT FLOW DATA**
DSN 101-9	6,200	Continuous Intake 007-T pump system and supply header drain. Discharge occurs infrequently once in a year if pump test is required.	
DSN 102-2	90	Continuous south Intake 008-T pump strainer backwash. Discharge occurs 1 – 3 times per day during operation.	
DSN 102-3	6,200	Continuous Intake 008-T pump system and supply header drain. Discharge occurs infrequently once in a year if pump test is required.	
DSN 102-4	50	Continuous gland seal water from Intake 008-T north pump when pump is operating.	
DSN 102-5	50	Continuous gland seal water from Intake 008-T center pump when pump is operating.	
DSN 102-6	50	Continuous gland seal water from Intake 008-T south pump when pump is operating.	
DSN 102-7	285,120	Continuous strainer backwash from Intake 008-T north pump when pump is operating.	
DSN 102-8	285,120	Continuous strainer backwash from Intake 008-T center pump when pump is operating.	
DSN 102-9	285,120	Continuous strainer backwash from Intake 008-T south pump when pump is operating.	
DSN 103-1	153,040	Intermittent pump system and supply header draining from Intake 001-T. Discharge occurs infrequently once in a year if pump test is required.	
DSN 103-2	8,640	Continuous Intake 001-T gland seal water when pump is operating.	
DSN 103-3	230,400	Continuous Intake 001-T pump #11 strainer backwash when pump is operating.	
DSN 103-4	230,400	Continuous Intake 001-T pump #12 strainer backwash when pump is operating.	
DSN 103-5	230,400	Continuous Intake 001-T pump #13 strainer backwash when pump is operating.	
DSN 104-2	6,200	Supply header gravity drain from Intake 004-T. Discharge occurs annually if pump testing is required.	
DSN 104-3	2	Sampling point supply header discharge from Intake 004-T. Discharge occurs daily.	
DSN 104-4	90	Secondary strainer drain from Intake 004-T. Discharge occurs 1 – 3 times per day during operation.	
DSN 104-5	50	Continuous Intake 004-T south pump #1 gland seal water when pump is operating.	
DSN 104-6	50	Continuous Intake 004-T south pump #2 gland seal water when pump is operating.	
DSN 104-7	50	Continuous Intake 004-T south pump #3 gland seal water when pump is operating.	
DSN 104-8	230,400	Continuous Intake 004-T south pump #1 strainer backwash when pump is operating.	
DSN 104-9	230,400	Continuous Intake 004-T south pump #2 strainer backwash when pump is operating.	
DSN 104-10	230,400	Continuous Intake 004-T south pump #3 strainer backwash when pump is operating.	

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

TABLE Z1									
Intake Monitoring Serial Number: 001-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	2,880,000	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z2									
Intake Monitoring Serial Number: 002-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	2,880,000	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z3									
Intake Monitoring Serial Number: 003-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	5,760,000	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z4									
Intake Monitoring Serial Number: 004-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	5,760,000	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z5									
Intake Monitoring Serial Number: 005-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	806,400	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z6									
Intake Monitoring Serial Number: 006-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	806,400	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z7									
Intake Monitoring Serial Number: 007-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	8,064,000	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

TABLE Z8									
Intake Monitoring Serial Number: 008-T							**Monitoring Location:** 0		
Water Description: Intake Water									
Monitoring Location Description: At the Intake									
PARAMETER	**UNITS**	**NET DMR CODE**	**FLOW/TIME BASED MONITORING**				**INSTANTANEOUS MONITORING**		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported
Average Flow (Intake)	gpd	00056	---	NA	Daily	Total Daily Flow	NA	NR	NA
Flow, Total[1,3]	gpd	51500	NA	6,912,000	Daily	Total Daily Flow	NA	NR	NA

Table Footnotes:

[1] For this parameter, the Permittee shall maintain at the facility a record of the total intake flow for each day and shall report the maximum intake flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly, then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

[3] The intake flow may be calculated using the pumps capacities and duration of flows.

SECTION 6: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES

(A) Chemical Analysis

(1) All samples shall be collected, handled, and analyzed in accordance with the methods approved under 40 CFR 136, unless another method is required under 40 CFR subchapter N or unless an alternative method has been approved in writing pursuant to 40 CFR 136.5. To determine compliance with limits and conditions established in this permit, monitoring must be performed using sufficiently sensitive methods approved pursuant to 40 CFR 136 for the analysis of pollutants having approved methods under that part, unless a method is required under 40 CFR subchapter N or unless an alternative method has been approved in writing pursuant to 40 CFR 136.5. Monitoring parameters which do not have approved methods of analysis defined in 40 CFR 136 shall be collected, handled, and analyzed in accordance with the methods in Section 6(B), below.in 40 CFR 136 shall be analyzed in accordance with methods specified in this permit.

(2) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136 unless otherwise specified.

(3) The term Minimum Level (ML) refers to either the sample concentration equivalent to the lowest calibration point in a method, or a multiple of the method detection limit (MDL). MLs may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by the laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in Section 5 Tables A - W2. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.

Parameter	Minimum Level
Aluminum	10.0 µg/L
Chromium	5.0 µg/L
Copper	5.0 µg/L
Lead	5.0 µg/L
Mercury, Total	0.05 µg/L
Nickel	5.0 µg/L
Oxidant, Total Residual	20.0 µg/L
Polynuclear aromatic hydrocarbons (PAHs)	10.0 µg/L
Zinc	10.0 µg/L

(4) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this section of the permit.

(5) Effluent analyses for which quantification was verified during the analysis at or below the minimum levels specified in this section and which indicate that a parameter was not detected shall be reported as "less than non-detect" where 'non-detect' is the numerical value equivalent to the analytical method detection limit for that analysis. If the Permittee is required to submit its DMRs through the NetDMR system, the Permittee shall report the non-detect value consistent with the reporting requirements for NetDMR.

(6) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.

(7) Analysis for Total Residual Oxidants shall be conducted by Hach method 8167.

(8) It is a violation of this permit for a Permittee or his/her designated agent, to manipulate test samples in any manner, to delay sample shipment, or to terminate or to cause to terminate a toxicity test. Once initiated, all toxicity tests must be completed.

(9) Analyses required under this permit shall be performed in accordance with CGS Section 19a-29a. An "environmental laboratory", as that term is defined in the referenced section, that is performing analyses required by this permit, shall be registered and have certification acceptable to the Commissioner, as such registration and certification is necessary.

(B) Acute Aquatic Toxicity Test

(1) Samples for monitoring of aquatic toxicity shall be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012).

(a) Composite samples shall be chilled as they are collected. Grab samples shall be chilled immediately following collection. Samples shall be held at 0 - 6 degrees Centigrade until Aquatic Toxicity testing is initiated.

(b) Effluent samples shall not be dechlorinated, filtered, or modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.

(c) Chemical analyses of the parameters identified in Section 5 Tables A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T and U, V1, V2, V3, V4, W1 and W2, shall be conducted on an aliquot of the same sample tested for Aquatic Toxicity.

(i) At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual oxidants shall be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of test solution and in the dilution (control) water at the beginning of the test and at test termination. If total residual oxidants are not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination. Salinity shall be measured in each test concentration at the beginning of the test and at test termination.

(ii) For tests with saltwater organisms that require salinity adjustment of the effluent, chemical analyses shall be conducted on an aliquot of the effluent sample collected for Aquatic Toxicity testing and on an aliquot of the effluent following salinity adjustment. Both sets of results shall be reported on the Aquatic Toxicity Monitoring Report (ATMR).

(d) Tests for Aquatic Toxicity shall be initiated within 24 hours of sample collection.

(2) Monitoring for Aquatic Toxicity to determine compliance with the permit limit on Aquatic Toxicity (invertebrate) above shall be conducted for 48 hours utilizing neonatal *Mysidopsis bahia* (15 days old with no more than 24hours range in age)

(3) Monitoring for Aquatic Toxicity to determine compliance with the permit limit on Aquatic Toxicity (vertebrate) above shall be conducted for 48 hours utilizing larval *Cyprinodon variegatus* (114 days old with no more than 24hours range in age).

(4) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.

(a) Definitive (multi-concentration) testing, with LC50 as the endpoint, shall be conducted to determine compliance with limits on Aquatic Toxicity and monitoring conditions and shall incorporate, at a minimum, the following effluent concentrations:

(i) For Aquatic Toxicity Limits expressed as LC50 values of 33% or greater: 100%, 75%, 50%, 25%, 12.5%, and 6.25%

(ii) For Aquatic Toxicity Limits expressed as LC50 values between 15% and 33% and for monitoring only conditions: 100%, 50%, 25%, 12.5%, and 6.25%

(iii) For Aquatic Toxicity Limits expressed as LC50 values of 15% or less: 100%, 50%, 25%, 12.5%, 6.25%, and 3%

(b) For Aquatic Toxicity Limits and for monitoring only conditions, expressed as an NOAEL value, Pass/Fail (single concentration) tests shall be conducted at a specified Critical Test Concentration (CTC) equal to the Aquatic Toxicity Limit, or 100% in the case of monitoring only conditions, as prescribed in Section 22a4303(j)(7)(A)(i) of the RSCA, except that five replicates of undiluted effluent and five replicates of effluent diluted to the CTC shall be included.

(c) *Mysidopsis bahia* shall be fed during the tests.

(d) Copper nitrate shall be used as the reference toxicant in tests with freshwater organisms.

(e) Aquatic toxicity tests with saltwater organisms shall be conducted at a salinity of 28 parts per thousand, plus or minus 2 parts per thousand.

(i) Sodium lauryl sulfate or sodium dodecyl sulfate shall be used as the reference toxicant.

(ii) Synthetic seawater for use as dilution water or controls shall be prepared with deionized water and artificial sea salts as described in EPA/821-R-02-012.

(iii) If the salinity of the source water is more than 5 parts per thousand ("ppt") higher, or lower than the culture water used for rearing the organisms, a second set of controls matching the salinity of the culture water shall be added to the test series. Test validity shall be determined using the controls adjusted to match the source water salinity.

(iv) Salinity adjustment that may be required in tests with saltwater organisms shall utilize the minimum amount of synthetic hypersaline brine (not to exceed 100 ppt) or dilute (2 ppt) synthetic seawater necessary to achieve the required salinity.

(v) The actual effluent concentrations in definitive tests with saltwater organisms shall be used in calculating test results.

(5) Compliance with limits on Aquatic Toxicity shall be determined as follows:

(a) For limits expressed as a minimum LC50 value, compliance shall be demonstrated when the results of a valid definitive Aquatic Toxicity test indicates that the LC50 value for the test is greater than the Aquatic Toxicity Limit.

(b) For limits expressed as a NOAEL value, compliance shall be demonstrated when the results of a valid pass/fail Aquatic Toxicity test indicates there is greater than 50% survival in the undiluted effluent and 90% or greater survival in the effluent at the specified CTC.

(C) The Permittee shall annually monitor the chronic toxicity of the DSN 001E and DSN 002C, in accordance with the following specifications.

(1) Chronic toxicity testing of the discharge shall be conducted annually during July, August or September of each year.

(2) Chronic toxicity testing shall be performed on the discharge in accordance with the test methodology established in "Short term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms" (EPA-821-R-02-014) as referenced in 40 CFR 136 for *Mysidopsis bahia* survival and reproduction and *Cyprinodon variegatus* larval survival and growth.

(3) Chronic toxicity tests shall utilize a minimum of five effluent dilutions prepared using a dilution factor of 0.5 (100% effluent, 50% effluent, 25% effluent, 12.5% effluent, 6.25% effluent, 0% effluent).

(4) Thames River water collected immediately upstream of the area influenced by the discharge shall be used as site water control (0% effluent) and dilution water in the toxicity tests.

(5) A laboratory water control consisting of synthetic saltwater prepared in accordance with EPA-821-R-02-014 at a salinity of 28 ± 2 ppt shall be included in the test protocol in addition to the site-water control.

(6) Daily composite samples of the discharge and grab samples of the Thames River for use as site water control and dilution water shall be collected on: day 0, for test solution renewal on day 1 and day 2 of the test; day 2, for test solution renewal on day 3 and day 4 of the test; and day 4, for test solution renewal on day 5, 6, and 7 of the test. Samples shall not be dechlorinated, pH or hardness adjusted, or chemically altered in any way.

(7) All samples of the discharge and the Thames River water used in the chronic toxicity test shall, at a minimum, be analyzed and results reported in accordance with the provisions listed in Section 6(A) of this permit for the following parameters:

Aluminum, Total	Alkalinity
Conductivity	Copper, (Total recoverable and dissolved)
Hardness	Lead, (Total recoverable and dissolved)
Mercury, Total	Nickel (Total recoverable and dissolved)
Oxidant, Total residual	Nitrogen, Ammonia (total as N)
pH	Nitrogen, Nitrate (Total as N)
Salinity	Nitrogen, Total
Solids, Total Suspended	Temperature
Iron, Total	Zinc, (Total recoverable and dissolved)

(8) A reference toxicant test shall be conducted with each chronic toxicity monitoring test using sodium chloride. Endpoints to be reported are: 48-hour LC50 (survival), 7-day LC50 (survival), 7-day C-NOEC (survival), 7-day C-LOEC (survival), 7-day C-NOEC (growth), 7-day C-LOEC (growth), 7-day C-NOEC (reproduction), 7-day C-LOEC (reproduction), 7-day EC50 (reproduction), 7-day EC50 (growth), 7-day IC25 (growth and reproduction).

SECTION 7: SPECIAL CONDITIONS REGARDING GRAVING DOCKS AND COOLING WATER INTAKE STRUCTURES

(A) Starting from the effective date of this permit, the Permittee shall implement Best Management Practices ("BMP") consistent with EPA Guidance Manual for Developing Best Management Practices (EPA 833-B-93-004). The BMP shall include but is not limited to the following:

(1) Containers staged outside of enclosures must be covered unless when adding or removing trash.

(2) When an exposed operational activity generates particulate or debris, additional precaution must be taken to prevent the particulate or debris from entering the dock drainage system.

(3) External grease specified for use on submarines must not transfer to dock floodwater.

(4) A cloth filter must be used to prevent discharge of solids to the dock drainage system during hydro-blasting process in Graving Docks #1 and #2.

(5) Dock surfaces must be cleaned immediately following dewatering.

(6) Ensure graving docks are clear of garbage, exposed raw materials, oil, any visible pollutant or constituent of concern that could be discharged with any waste stream.

(7) Ensure that pollution prevention mechanisms are in proper working order.

(B) To satisfy Best Technology Available ("BTA") requirements, the Permittee shall retrofit Intakes 001-T, 002-T, 003-T, 004-T, 005-T and 006-T with 2mm cylindrical woven mesh screens with through-screen velocities that are equal to or less than 0.5 feet per second (fps), and install 1mm cylindrical woven mesh screens with through-screen velocities that are equal to or less than 0.5 feet per second (fps) for Intakes 007-T and 008-T, in accordance with plans and specifications in the report "Supplemental Information for Entrainment Reduction in Cooling Water Intakes", report "Information Required for Existing Cooling Water Intake Structures per 40 CFR § 122.21(r)(2-8)-SYAB, both prepared by Woodard & Curran and all related addenda.

The installation of all intake structures shall be deemed complete following the submittal of as built drawings, a certification statement by the Permittee to the Commissioner, indicating the date of installation and a statement that the installation was completed in accordance with the approved plans and specifications. The certification shall be signed by a Professional Engineer.

(C) Intakes 003-T, 004-T and 008-T are comprised of equipment leased by the Permittee, which may be temporarily taken out of service due to the terms and conditions of the lease agreement. In all cases, the specifications, installation, operation, and maintenance of leased equipment shall be consistent with the BTA approval in accordance with Section 7(B) of the permit.

The Permittee shall submit for the Commissioner's review and approval, any proposed modification(s) to the intake structures that differs from the initial approval (this permit serves as an approval), including but not limited to, any associated intake piping, pumps, screens and appurtenances. At least ninety (90) days prior to reinstalling the intake, the Permittee shall submit a report to the Commissioner indicating plans and specifications of the intake and the proposed reinstallation schedule and the proposed date of intake use. The report shall be signed by a Professional Engineer and certified that the proposed modifications, operation, maintenance, and reinstallation of the intake(s) are consistent with the BTA requirements under Section 7(B) of the permit. The report shall be reviewed and approved by the Commissioner.

Fourteen (14) days following the completion of the reinstallation, the Permittee shall submit a certification of completion to the Commissioner signed by a Professional Engineer, indicating the date of completion and certifying the intake(s) was installed in accordance with the approved plans, consistent with Section 7(B) of the permit.

(D) The Permittee shall develop and submit a Copper Minimization Plan (Plan) to minimize the discharge of copper from graving dock outfalls DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 001-E, DSN 001-G, DSN 001-H, DSN 002-A, DSN 002-B, DSN 002-C, DSN 002-D, DSN 002-F, DSN 002-G, DSN 105-1, DSN 105-2, DSN 105-3, DSN 105-4, DSN 106-1 and DSN 106-2, to the Thames River by implementing optimization techniques and identifying and implementing copper-free replacement(s) for the copper-based paint used on submarine hulls. The Plan shall be submitted for the Commissioner's review no later than one hundred and eighty (180) days after the effective date of this permit. The Plan shall include the following, at a minimum:

(1) Alternatives to copper-based submarine hull paint: Develop a plan and schedule for the Permittee to identify alternatives to the existing copper-based paint(s) used on new construction and existing overhaul and repair submarine hulls; evaluate the feasibility of replacing the copper-based paint(s) using alternatives containing no or less copper; and identify the steps necessary to implement suitable alternatives.

(2) Optimization of existing facilities to minimize existing copper discharges: The Permittee shall identify methods to reduce copper discharged through outfalls DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 001-E, DSN 001-G, DSN 001-H, DSN 002-A, DSN 002-B, DSN 002-C, DSN 002-D, DSN 002-F, DSN 002-G, DSN 105-1, DSN 105-2, DSN 105-3, DSN 105-4, DSN 106-1 and DSN 106-2, by implementing optimization techniques that minimize the copper discharge using primarily existing facilities and equipment, to the maximum extent practicable. The Plan shall:

(a) Evaluate alternative methods of operating the Permittee's facilities, including operational, process, treatment, material and chemical substitutions, and equipment changes to reduce copper from the DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 001-E, DSN 001-G, DSN 001-H, DSN 002-A, DSN 002-B, DSN 002-C, DSN 002-D, DSN 002-F, DSN 002-G discharges. At a minimum, the methods evaluated shall include: operational, maintenance, and process changes to minimize copper entering the wastewater discharge; procedures to limit the time at which submarines with copper-based painted hulls are exposed to graving dock discharge water; chemical or material substitutions (excluding the submarine hull paint identified in Section 7(D)(1) to eliminate or reduce copper entering the graving docks and associated wastewater discharge; and pollution prevention and source reduction strategies to minimize copper usage at the facility and entering the graving docks and wastewater discharge;

(b) Determine which methods will be most effective at decreasing copper levels in the discharge; and

(c) Include a proposed implementation schedule for those methods which were determined to be most effective at reducing copper.

(3) The Permittee shall implement the Plan ninety (90) days following submittal to the Commissioner, unless the Commissioner rejects the Plan prior to that date.

(4) The Permittee shall submit a "Facility and Wastewater Treatment System Modification Request for Determination" for any facility expansion or process change that may result in an increased or new discharge or constitute a new source, and of any expansion or significant changes made to a wastewater collection or treatment system or its method of operation.

(5) Progress Reports: The Permittee shall submit to the Commissioner annual status reports as an attachment to the June DMR. Annual status reports shall also be directed to:

DEEP.WaterPermittingEnforcement@ct.gov with the subject line "CT0003824"

(6) Status reports shall include, but not be limited to:

(a) A detailed description of progress made by the Permittee in performing actions pursuant to the elimination of copper-based submarine hull paint in accordance with Section 7(D)(1), including:

(i) A detailed description of the work performed and results of all efforts to identify alternatives to the existing copper-based paint(s) used on new construction and existing overhaul and repair submarine hulls; evaluate the feasibility of replacing the copper-based paint(s) with alternatives containing no or less copper; and identify the steps necessary to implement suitable alternatives, including results of any feasibility test and product trials.

(ii) An assessment of whether the Permittee is on schedule to comply with the schedule to evaluate and implement the proposed alternatives pursuant to Section 7(D(1) of this permit; and

(iii) If the Permittee is not on-track with the Plan and schedule, the steps the Permittee will take to comply with the Plan and schedule.

(iv) If the Permittee cannot comply with the schedule, revisions to the schedule shall be submitted to the Commissioner for review and approval with justification of the proposed change(s).

(b) A detailed description of progress made by the Permittee in performing actions pursuant to the optimization of existing facilities to minimize existing copper discharges pursuant to Section 7(D)(2) of this permit, including, but not limited to:

(i) A description of the optimization methods implemented under the Plan during the previous calendar year;

(ii) Whether the techniques are performing as expected; and

(iii) The copper discharge trends relative to the previous year.

(7) The Permittee shall revise and maintain the Plan to address equipment or operational changes or upon the Commissioner's request.

(8) Summary Report: Four and a half years from the effective date of this permit, the Permittee shall submit a Summary Report summarizing the work performed to date pursuant to Sections 7(D)(1) and 7(D)(2) of this permit, and the remaining steps and associated schedule for copper minimization.

SECTION 8: REPORTING REQUIREMENTS

(A) The results of chemical analyses and any aquatic toxicity test required by this permit shall be submitted electronically using NetDMR. Monitoring results shall be reported at the monitoring frequency specified in this permit. Any monitoring required more frequently than monthly shall be reported on an attachment to the DMR, and any additional monitoring conducted in accordance with 40 CFR 136, or another method required for an industry-specific waste stream under 40 CFR subchapter N or O, or other methods approved by the Commissioner, shall also be included on the DMR, or as an attachment, if necessary, and the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit. All aquatic toxicity reports shall also be included as an attachment to the DMR. A report shall also be included with the DMR which includes a detailed explanation of any violations of the limitations specified. DMRs, attachments, and reports, shall continue to be submitted electronically in accordance with Section 8(D) below. However, if the DMRs, attachments, and reports are required to be submitted in hard copy form, they shall be received at the address below by the last day of the month following the month in which samples are collected.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127

(B) The Aquatic Toxicity Monitoring Report (ATMR) shall include all applicable items identified in Section 12 of EPA-821-R-02-012 and in Section 10 of EPA-821-R-02-014, including complete and accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC_{50} values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, including measured daily flow and hours of operation for the 30 consecutive operating days prior to sample collection. The ATMR shall be submitted electronically as an attachment to the DMR, and a hard copy shall be sent to the Bureau of Water Protection and Land Reuse at the address below. The ATMR required by Section 6(B) and 6(C) shall be received at this address by the last day of the month following the month in which the samples are collected.

Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity)
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127

(C) If this permit requires monitoring of a discharge on a calendar basis (e.g., monthly, quarterly, etc.), but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE". For those permittees whose required monitoring is discharge dependent (e.g., per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.

(D) NetDMR Reporting Requirements

(1) The Permittee shall report electronically using NetDMR, a web-based tool that allows permittees to electronically submit DMRs and other required reports through a secure internet connection. All reports required under the permit, including any monitoring conducted more frequently than monthly or any additional monitoring conducted in accordance with 40 CFR 136, shall be submitted to the Department as an electronic attachment to the DMR in NetDMR.

(2) Submittal of Reports Using NetDMR

The Permittee and/or the signatory authority shall electronically submit DMRs required by this permit to the Commissioner using NetDMR in satisfaction of the DMR submission requirement of Sections 5 and 6 of this permit. DMRs shall be submitted electronically to the Commissioner no later than the last day of the month following the completed reporting period. Any monitoring conducted more frequently than monthly or any additional monitoring shall be submitted to the Commissioner as an electronic attachment to the DMR in NetDMR. The Permittee shall also electronically file any written report of noncompliance described in Section 9 of this permit as an attachment in NetDMR. NetDMR is accessed from: http://www.epa.gov/netdmr.

SECTION 9: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

(A) *Noncompliance Notifications:*

(1) In accordance with Section 22a-430-3(j)(8), 22a-430-3(j)(11)(D), 22a-430-3(k)(4), and 22a-430-3(i)(3) of the RSCA, the Permittee shall notify the Commissioner of the following actual or anticipated noncompliance with the terms or conditions of this permit within two hours of becoming aware of the circumstances. All other actual or anticipated violations of the permit shall be reported to the Commissioner within 24 hours of becoming aware of the circumstances:

(a) A noncompliance that is greater than two times an effluent limitation;

(b) A noncompliance of any minimum or maximum daily limitation or excursion beyond a minimum or maximum daily range;

(c) Any condition that may endanger human health or the environment, including but not limited to noncompliance with WET limitations;

(d) Any condition that may endanger the operation of a POTW, including sludge handling and disposal;

(e) A failure or malfunction of monitoring equipment used to comply with the monitoring requirements of this permit;

(f) Any actual or potential bypass of the Permittee's collection system or treatment facilities; or

(g) Expansions or significant alterations of any wastewater collection, treatment facility, or its method of operation for the purpose of correcting or avoiding a permit violation.

(2) Notifications shall be submitted via the Commissioner's online Noncompliance Notification Form:https://portal.ct.gov/deep/water-regulating-and-discharges/industrial-wastewater/compliance-assistance/notification-requirements.

(3) Within five days of any notification of noncompliance in accordance with Sections 9(A)(a) through 9(A)(f) of this permit, the Permittee shall submit a follow-up report using the Commissioner's online Noncompliance Follow-up Report Form: https://portal.ct.gov/deep/water-regulating-and-discharges/industrial-wastewater/compliance-assistance/notification-requirements.

The follow-up report shall contain, at a minimum, the following information: (i) A description of the noncompliance and its cause; (ii) the period of noncompliance, including exact dates and times; (iii) if the noncompliance has not been corrected, the anticipated time it is expected to continue; and (iv) steps taken or planned to correct the noncompliance and reduce, eliminate and prevent recurrence of the noncompliance.

(4) Within 30 days of any notification of facility modifications reported in accordance with Section 9(A)(g) of this permit, the Permittee shall submit a written follow-up report by submitting a "Facility and Wastewater Treatment System Modification Request for Determination" for the review and approval of the Commissioner. The report shall fully describe the changes made to the facility and reasons therefor.

(5) Notification of an actual or anticipated noncompliance or facility modification does not stay any term or condition of this permit.

(B) In accordance with Section 22a-430-3(j)(11)(E) of the RSCA, the Permittee shall notify the Commissioner within 72 hours and in writing within 30 days when he or she knows or has reason to believe that the concentration in the discharge of any substance listed in the application, or any toxic substance as listed in Appendix B or D of RSCA Section 22a-430-4, has exceeded or will exceed the highest of the following levels: (1) One hundred micrograms per liter; (2) Two hundred micrograms per liter for acrolein and acrylonitrile, five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter for antimony; (3) An alternative level specified by the Commissioner, provided such level shall not exceed the level which can be achieved by the Permittee's treatment system; or (4) A level two times the level specified in the Permittee's application.

72 hour initial notifications shall be submitted via the Commissioner's online Noncompliance Notification Form. 30 day follow-up reports shall be submitted via the Commissioner's online Noncompliance Follow-up Report Form. The Forms are available at the Commissioner's website, here: https://portal.ct.gov/deep/water-regulating-and-discharges/industrial-wastewater/compliance-assistance/notification-requirements.

(C) In addition to any other written reporting requirements, the Permittee shall report any instances of noncompliance with this permit with its DMR. Such reporting shall be due no later than the last day of the month following the reporting period in which the noncompliant event occurred. The information provided in the DMR shall include, at a minimum: the type of violation, the duration of the violation, the cause of the violation, and any corrective action(s) or preventative measure(s) taken to address the violation.

(D) The Permittee shall notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division, within 72 hours and in writing within 30 days of the discharge

of any substance listed in the application if the concentration or quantity of that substance exceeds two times the level listed in the application.

(E) If any sample analysis indicates that an aquatic toxicity effluent limitation in Section 5 of this permit has been exceeded, or that the test was invalid, another sample of the effluent shall be collected and tested for aquatic toxicity and associated chemical parameters, as described above in Section 6, and the results reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing), at the address listed above, within 30 days of the exceedance or invalid test. Results of all tests, whether valid or invalid, shall be reported.

(F) If any two consecutive test results or any three test results in a twelve-month period indicate that an aquatic toxicity limit has been exceeded, the Permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall also submit a report, for the review and written approval of the Commissioner, which describes in detail the steps taken or that shall be taken to eliminate the toxic impacts of the discharge on the receiving water and it shall also include a proposed schedule for implementation. Such report shall be submitted in accordance with the timeframe set forth in Section 22a-430-3(j)(10)(C) of the RCSA. The Permittee shall implement all actions in accordance with the approved report and schedule.

SECTION 10: COMPLIANCE SCHEDULE

(A) Pursuant to Section 316(b) of the Federal Water Pollution Control Act, 33 U.S.C. § 1326(b) regarding cooling water intake structures, the Permittee shall comply with Sections 7(B) and 7(C) of this permit and the following:

(1) On or before February 28, 2025, the Permittee shall retrofit Intake 002-T with 2 mm mesh screen with a through screen velocity that is equal or lower than 0.5 fps.

(2) On or before April 30, 2025, the Permittee shall retrofit Intake 003-T with 2 mm mesh screen with a through screen velocity that is equal or lower than 0.5 fps.

(3) On or before April 30, 2025, the Permittee shall retrofit Intake 004-T with 2 mm mesh screen with a through screen velocity that is equal or lower than 0.5 fps.

(4) On or before October 31, 2025, the Permittee shall retrofit Intake 005-T with 2 mm mesh screen with a through screen velocity that is equal or lower than 0.5 fps.

(5) On or before June 30, 2026, the Permittee shall retrofit Intake 006-T with 2 mm mesh screen with a through screen velocity that is equal or lower than 0.5 fps.

(6) On or before May 31, 2026, the Permittee shall retrofit Intake 001-T with 2 mm mesh screen with a through screen velocity that is equal or lower than 0.5 fps.

(B) The Permittee shall achieve compliance with the total residual oxidants (chlorine) effluent limitations and in Table A (DSN 001A), Table B (DSN 001B), Table D (DSN 001D), Table E (DSN 001E), Table H (DSN 002A), Table J (DSN 002C), Table Q (DSN 007A) and the pH limits in Table R (DSN 007B) of Section 5 of this permit, as soon as possible, but in no event later than 24 months after the effective date of this permit in accordance with the following:

(1) On or before one hundred and eighty (180) days after the date of issuance of this permit, the Permittee shall submit for the Commissioner's review and written approval a comprehensive

plan and thorough report which describes and evaluates alternative actions which may be taken by the Permittee to achieve compliance with the limitations in Section 5 of this permit. Such report shall:

(a) Evaluate alternative actions to achieve compliance with Section 5 limits including, but not limited to, pollutant source reduction, process changes/innovations, chemical substitutions, recycle and zero discharge systems, water conservation measures, and other internal and/or end-of-pipe treatment technologies;

(b) State in detail the most expeditious schedule for performing each alternative;

(c) Dilution shall not be included as one of the alternatives;

(d) List all permits and approvals required for each alternative, including but not limited to any permits required under Sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the CGS;

(e) Propose a preferred alternative or combination of alternatives with supporting justification; and

(f) Propose a detailed program and schedule to perform all actions required by the preferred alternative including but not limited to a schedule for submission of engineering plans and specifications on any internal and/or end of pipe treatment facilities, start and completion of any construction activities related to any treatment facilities, and applying for and obtaining all permits and approvals required for such actions.

(C) Pursuant to Section 316(a) of the Federal Water Pollution Control Act, 33 U.S.C. § 1326(a) regarding the thermal component of the discharge, the Permittee shall comply with the following to verify that the thermal discharge from DSNs 003-1, 004-1, 101-1, 102-1 and 104-1 will not cause or contribute to an instream water quality violation of the ambient daily maximum and maximum allowable increase in temperature of 1.5^{o}F during the period including July, August, and September or 4^{o}F during the other months:

(1) On or before six (6) months after the date of issuance of this permit, the Permittee shall submit for the Commissioner's review, a scope of study for the thermal verification required in Section 10(C) of this permit. The scope of study shall provide all necessary details on how the study will be performed and shall include a schedule that identifies study commencement and completion dates. The scope of study shall include at a minimum:

(a) In situ sampling during summer (July – September) and winter (January – March);

(b) Upstream and downstream sampling locations;

(c) Hydrographic and real time temperature surveys; and

(d) Thermal plume mappings.

(2) On or before two (2) years after the DEEP's concurrence of the scope of study, the Permittee shall conduct a field verification study of the combined thermal discharges (DSNs 003-1, 004-

1, 101-1 and 102-1) impact to the Thames River in accordance with the approved scope of study pursuant to Section 10(C)(1).

(3) On or before four (4) months from completing the field verification study, the Permittee shall submit a Thermal Verification Report describing the results of this study for the Commissioner's review. The study shall include but not be limited to all in situ data collected and analyzed in an electronic and editable format, thermal plume mapping reflecting the current outfall release cross-sectional area and potential aquatic impacts within wetlands and watercourse in the thermal plume. The thermal plume mapping shall include, at a minimum:

(a) A map of the nearfield area, circumscribed by a radial distance extending outward from the location of the discharge (DSN001-1) into the receiving water body, at a scale of no greater than 750 feet per inch. Such map shall also delineate the location of any watercourses, discharges, designated tidal wetlands, and structural features such as bridges and culverts. The cross-sectional bathymetry of the Thames River shall be plotted;

(b) Thermal isotherms delineating the areal extent of the plume equivalent to a ΔT of 1.5°F and 4°F and a maximum temperature of 83°F or ambient temperature, if ambient temperature is above 83°F in increments of 0.5°F. Isotherms shall be labeled for both maximum temperature and maximum temperature increase beginning at the outfall and at ΔT of 1.5 °F and 4°F intervals. Isotherms should be labeled from point of discharge until the thermal component of that plume has been reduced to ambient temperatures. Nearfield temperature increases should be well documented to determine the localized effect of high temperature discharges; and

(c) Measurements will be taken during the summer months (July – September) and winter months (January - March) a normal operating day at high tide, low tide, and at two mid tides (ebb tide and flood tide).

(D) The Permittee shall submit to the Commissioner semi-annual status reports on June 30th and December 31st of each year, beginning sixty days after the date of concurrence of the reports referenced in Sections 10(A) - 10(C). Status reports shall include the following:

(1) A summary of all effluent monitoring data collected by the Permittee during the previous six (6) month period;

(2) A description of the work performed by the Permittee during the past six (6) months towards compliance with Section 10(A) - 10(C) above;

(3) An assessment of whether the Permittee is on schedule to comply with the compliance deadline;

(4) If the Permittee is not on-track to comply with the compliance deadline, the steps the Permittee will take to comply; and

(5) Status reports of Section 10(C) shall include the start and anticipated end dates of the studies, fieldwork, and anticipated report submission date.

(E) The Permittee shall perform the approved actions in accordance with the approved schedule. Within fourteen days after completing such actions, the Permittee shall certify to the Commissioner in writing that the actions have been completed as reviewed/approved.

(F) The Permittee shall use best efforts to submit to the Commissioner all documents required by this section of the permit in a complete and approvable form. If the Commissioner notifies the Permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the Permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. In approving any document or other action under this Compliance Schedule, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.

(G) Dates. The date of submission to the Commissioner of any document required by this section of the permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this section of the permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this section of the permit means calendar day. Any document or action which is required by this section only of the permit, to be submitted, or performed, by a date which falls on, Saturday, Sunday, or, a legal Connecticut or federal holiday, shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or legal Connecticut or federal holiday.

(H) Notification of noncompliance. Except as otherwise provided in this permit, in the event that the Permittee becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this section of the permit or of any document required hereunder, the Permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates that may be approved in writing by the Commissioner. Notification by the Permittee shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the Commissioner in writing.

(I) Notice to Commissioner of changes. Within fifteen days of the date the Permittee becomes aware of a change in any information submitted to the Commissioner under this section of the permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the Commissioner.

(J) Submission of documents. Any document, other than a DMR, required to be submitted to the Commissioner under this section of the permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

DEEP.WaterPermittingEnforcement@ct.gov with the subject line "CT0003824"

and

Industrial Wastewater Permitting Program
Department of Energy and Environmental Protection
Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division
79 Elm Street
Hartford, CT 06106-5127

This permit is hereby issued on September 18, 2024.

Jennifer L. Perry, P.E.
Bureau Chief
Bureau of Materials Management and Compliance Assurance
Department of Energy and Environmental Protection

JP/OF

ATTACHMENT A

TABLE 1: Electric Boat's Daily[1] Copper Site Wide Mass Discharge			
Wastewater Description: All wastewaters that contribute to copper mass load at Electric Boat site as defined in Outfall 111			
Date of Sample collection: _____			
DISCHARGES	Discharge Flow (gpd)	Discharge copper concentration (µg/l)	Copper Mass (kg/d) = Copper concentration (µg/l) multiplied by discharge flow (gpd) multiplied by 3.785 X 10^{-9}
DSN 001-A	---	---	---
DSN 001-B	---	---	---
DSN 001-C	---	---	---
DSN 001-D	---	---	---
DSN 001-E	---	---	---
DSN 001-G	---	---	---
DSN 001-H	---	---	---
DSN 002-A	---	---	---
DSN 002-B	---	---	---
DSN 002-C	---	---	---
DSN 002-D	---	---	---
DSN 002-E	---	---	---
DSN 002-F	---	---	---
DSN 002-G	---	---	---
DSN 003-1	---	---	---
DSN 004-1	---	---	---
DSN 007-A	---	---	---
DSN 007-B	---	---	---
DSN 101-1	---	---	---
DSN 102-1	---	---	---
DSN 104-1	---	---	---
DSN 105-1	---	---	---
DSN 105-2	---	---	---
DSN 105-3	---	---	---
DSN 105-4	---	---	---
DSN 106-1	---	---	---
DSN 106-2	---	---	---
Total [2]	---	---	---

Footnotes:

[1] "Daily" means any day a discharge occurs from any of the following outfalls: DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 002-A or DSN 002-B.

[2] Total = the site wide daily mass discharge = the summation of the mass of copper discharged from the above listed outfalls on the day that there is a discharge from any of the following outfalls: DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 002-A or DSN 002-B.

ATTACHMENT A1

TABLE 1: Electric Boat's Site Wide Average Monthly and Maximum Daily Copper Mass Discharge	
Wastewater Description: All wastewaters that contribute to copper mass load at Electric Boat site as defined in Outfall 111	
Month of Report: _____	
DAYS	Total copper mass (kg/d) from all completed Attachment A for the reporting month.
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
Site Wide Average Monthly Copper Mass Discharge (kg/d): _____	
Site Wide Maximum Daily Copper Mass Discharge (kg/d): _____	

Fact Sheet
National Pollutant Discharge Elimination System (NPDES)
Permit Reissuance

SECTION 1 FACILITY SUMMARY

APPLICANT	Electric Boat Corporation
PERMIT NO.	CT0003824
APPLICATION NO.	201006743
DATE APPLICATION RECEIVED	December 16, 2010
LOCATION ADDRESS	75 Eastern Point Road, Groton, CT 06340
MAILING ADDRESS	75 Eastern Point Road, Groton, CT 06340
FACILITY CONTACT	Michael S. Sinko, Senior Manager Phone: (860) 433-2791 Email: msinko@gdeb.com
DMR CONTACT	Clare Schlink Phone: (860) 433-6534 Email: cschlink@gdeb.com
SECRETARY OF STATE BUSINESS ID	0525741
PERMIT TERM	5 Years
PERMIT CATEGORY	NPDES MAJOR
SIC & NAICS CODE(S)	3731 & 336611 (Ship Building and Repairing)
APPLICABLE EFFLUENT GUIDELINES	None
PERMIT TYPE	Reissuance
OWNERSHIP	Private
RECEIVING WATER	Thames River
WATERBODY SEGMENT ID	CT-E1_014-SB
WATERBODY CLASSIFICATION	SB
DISCHARGE LOCATIONS (LAT, LONG)	DSN 001-A: 41° 20′ 36.8″, - 72° 05′ 0.2″ DSN 001-B: 41° 20′ 36.7″, - 72° 04′ 59.1″ DSN 001-C: 41° 20′ 36.8″, - 72° 05′ 0.2″ DSN 001-D: 41° 20′ 37.7″, - 72° 05′ 0.2″ DSN 001-E: 41° 20′ 36.8″, - 72° 05′ 0.2″ DSN 001-G: 41° 20′ 36.7″, - 72° 04′ 59.1″ DSN 001-H: 41° 20′ 37.7″, - 72° 05′ 0.2″ DSN 002-A: 41° 20′ 51.5″, - 72° 05′ 2.7″

	DSN 002-B1: 41° 20′ 52.8″, - 72° 05′ 1.4″ DSN 002-B2: 41° 20′ 52.8″, - 72° 05′ 1.3″ DSN 002-C: 41° 20′ 52.8″, - 72° 05′ 1.1″ DSN 002-D: 41° 20′ 51.5″, - 72° 05′ 2.9″ DSN 002-E: 41° 20′ 51.5″, - 72° 05′ 2.9″ DSN 002-F: 41° 20′ 51.5″, - 72° 05′ 2.9″ DSN 002-G: 41° 20′ 51.6″, - 72° 05′ 2.9″ DSN 003-1: 41° 20′ 53.4″, - 72° 04′ 54″ DSN 003-2: 41° 20′ 53.4″, - 72° 04′ 55.7″ DSN 003-3: 41° 20′ 53.2″, - 72° 04′ 56.6″ DSN 003-4: 41° 20′ 53.4″, - 72° 04′ 55.8″ DSN 003-5: 41° 20′ 53.4″, - 72° 04′ 55.7″ DSN 003-6: 41° 20′ 53.4″, - 72° 04′ 55.9″ DSN 003-7: 41° 20′ 53.4″, - 72° 04′ 55.8″ DSN 003-8: 41° 20′ 53.4″, - 72° 04′ 55.7″ DSN 003-9: 41° 20′ 53.4″, - 72° 04′ 55.9″ DSN 003-10: 41° 20′ 53.4″, - 72° 04′ 53.8″ DSN 003-11: 41° 20′ 53.4″, - 72° 04′ 55.5″ DSN 003-12: 41° 20′ 53.4″, - 72° 04′ 55.5″ DSN 003-13: 41° 20′ 53.4″, - 72° 04′ 55.5″ DSN 004-1: 41° 20′ 53.4″, - 72° 04′ 57.1″ DSN 004-2: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-3: 41° 20′ 53.3″, - 72° 04′ 55.1″ DSN 004-4: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-5: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-6: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-7: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-8: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-9: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 004-10: 41° 20′ 53.4″, - 72° 04′ 58.2″ DSN 007-A1: 41° 20′ 34.5″, - 72° 04′ 56.5″ DSN 007-A2: 41° 20′ 34.3″, - 72° 04′ 55.4″ DSN 007-A3: 41° 20′ 36.8″, - 72° 04′ 57.1″ DSN 007-A4: 41° 20′ 36.9″, - 72° 04′ 57″ DSN 007-A5: 41° 20′ 37.5″, - 72° 04′ 56″ DSN 007-A6: 41° 20′ 37.6″, - 72° 04′ 55.9″ DSN 007-A7: 41° 20′ 38.7″, - 72° 05′ 0.6″ DSN 007-A8: 41° 20′ 39.3″, - 72° 04′ 59.6″ DSN 007-A9: 41° 20′ 40.1″, - 72° 04′ 58.4″ DSN 007-A10: 41° 20′ 41″, - 72° 04′ 57″ DSN 007-A11: 41° 20′ 39.7″, - 72° 04′ 59.1″ DSN 007-A12: 41° 20′ 40.9″, - 72° 04′ 57″ DSN 007-A13: 41° 20′ 50.3″, - 72° 04′ 58.7″ DSN 007-A14: 41° 20′ 50.3″, - 72° 04′ 58.7″ DSN 007-A15: 41° 20′ 51.8″, - 72° 04′ 58.9″ DSN 007-A16: 41° 20′ 53.4″, - 72° 04′ 59.2″ DSN 007-A17: 41° 20′ 53.5″, - 72° 05′ 0.6″ DSN 007-A18: 41° 20′ 53.4″, - 72° 04′ 53.7″ DSN 007-A19: 41° 20′ 53.4″, - 72° 04′ 54″ DSN 007-A20: 41° 20′ 37.6″, - 72° 04′ 55.9″

	DSN 007-A21: 41° 20′ 36.8″, - 72° 04′ 57.1″ DSN 007-A22: 41° 20′ 39.9″, - 72° 04′ 58.6″ DSN 007-A23: 41° 20′ 39.7″, - 72° 04′ 58.6″ DSN 007-A24: 41° 20′ 50.8″, - 72° 04′ 58.9″ DSN 007-A25: 41° 20′ 51.3″, - 72° 04′ 58.7″ DSN 007-A26: 41° 20′ 51.1″, - 72° 04′ 59″ DSN 007-A27: 41° 20′ 51.1″, - 72° 05′ 0.7″ DSN 007-A28: 41° 20′ 50.9″, - 72° 05′ 0.5″ DSN 007-A29: 41° 20′ 37.2″, - 72° 04′ 57.6″ DSN 007-A30: 41° 20′ 38″, - 72° 04′ 56.4″ DSN 007-A31: 41° 20′ 40.1″, - 72° 04′ 58.4″ DSN 007-A32: 41° 20′ 40.6″, - 72° 04′ 56.5″ DSN 007-B1: 41° 21′ 0″, - 72° 04′ 57.6″ DSN 007-B2: 41° 20′ 53.4″, - 72° 04′ 56.1″ DSN 007-B3: 41° 20′ 53.2″, - 72° 04′ 56.6″ DSN 007-B4: 41° 20′ 53.2″, - 72° 04′ 56.6″ DSN 007-B5: 41° 20′ 53.3″, - 72° 04′ 57.9″ DSN 007-B6: 41° 20′ 53.3″, - 72° 04′ 57.9″ DSN 007-B7: 41° 20′ 51.6″, - 72° 04′ 59.4″ DSN 007-B8: 41° 20′ 51″, - 72° 04′ 59.4″ DSN 007-B9: 41° 20′ 51.1″, - 72° 05′ 1.3″ DSN 007-B10: 41° 20′ 51.1″, - 72° 05′ 1.8″ DSN 007-B11: 41° 20′ 51.1″, - 72° 05′ 1.3″ DSN 007-B12: 41° 20′ 51″, - 72° 04′ 59.4″ DSN 007-B13: 41° 20′ 49.4″, - 72° 04′ 53″ DSN 007-B14: 41° 20′ 49.4″, - 72° 04′ 53″ DSN 007-B15: 41° 20′ 42.8″, - 72° 04′ 54.4″ DSN 007-B16: 41° 20′ 42.1″, - 72° 04′ 55.4″ DSN 007-B17: 41° 20′ 38.6″, - 72° 05′ 1″ DSN 007-B18: 41° 20′ 38.8″, - 72° 05′ 0.6″ DSN 007-B19: 41° 20′ 39.8″, - 72° 04′ 59.1″ DSN 007-B20: 41° 20′ 38.8″, - 72° 05′ 0.6″ DSN 007-B21: 41° 20′ 39.8″, - 72° 04′ 59.1″ DSN 007-B22: 41° 20′ 36.1″, - 72° 04′ 58.1″ DSN 007-B23: 41° 20′ 36.3″, - 72° 04′ 57.7″ DSN 007-B24: 41° 20′ 37.2″, - 72° 04′ 56.5″ DSN 007-B25: 41° 20′ 36.3″, - 72° 04′ 57.7″ DSN 007-B26: 41° 20′ 37.2″, - 72° 04′ 56.5″ DSN 007-B27: 41° 20′ 44.2″, - 72° 04′ 53.3″ DSN 007-B28: 41° 20′ 38.4″, - 72° 04′ 56.5″ DSN 007-B29: 41° 20′ 39.3″, - 72° 04′ 55″ DSN 007-B30: 41° 20′ 39.3″, - 72° 04′ 58.1″ DSN 007-B31: 41° 20′ 39.8″, - 72° 04′ 57.3″ DSN 007-B32: 41° 20′ 40.3″, - 72° 04′ 56.6″ DSN 007-B33: 41° 20′ 44.2″, - 72° 04′ 53.3″ DSN 101-1: 41° 20′ 27.3″, - 72° 04′ 52.5″ DSN 101-2: 41° 20′ 24.8″, - 72° 04′ 56.3″ DSN 101-3: 41° 20′ 24.8″, - 72° 04′ 56.3″ DSN 101-4: 41° 20′ 24.8″, - 72° 04′ 56.3″ DSN 101-5: 41° 20′ 24.8″, - 72° 04′ 56.3″

	DSN 101-6: 41° 20′ 24.8″, - 72° 04′ 56.3″ DSN 101-7: 41° 20′ 24.8″, - 72° 04′ 56.3″ DSN 101-8: 41° 20′ 25″, - 72° 04′ 56.3″ DSN 101-9: 41° 20′ 25.1″, - 72° 04′ 56.3″ DSN 102-1: 41° 20′ 25″, - 72° 04′ 51.4″ DSN 102-2: 41° 20′ 24.8″, - 72° 04′ 56.8″ DSN 102-3: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 102-4: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 102-5: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 102-6: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 102-7: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 102-8: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 102-9: 41° 20′ 24.9″, - 72° 04′ 56.3″ DSN 103-1: 41° 20′ 38.7″, - 72° 05′ 0.6″ DSN 103-2: 41° 20′ 38.7″, - 72° 05′ 0.6″ DSN 103-3: 41° 20′ 38.7″, - 72° 05′ 0.6″ DSN 103-4: 41° 20′ 38.7″, - 72° 05′ 0.6″ DSN 103-5: 41° 20′ 38.7″, - 72° 05′ 0.6″ DSN 104-1: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 104-2: 41° 20′ 49.7″, - 72° 04′ 55.5″ DSN 104-3: 41° 20′ 49.6″, - 72° 04′ 53.3″ DSN 104-4: 41° 20′ 49.7″, - 72° 04′ 55.5″ DSN 104-5: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 104-6: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 104-7: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 104-8: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 104-9: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 104-10: 41° 20′ 49.6″, - 72° 04′ 55.7″ DSN 105-1: 41° 20′ 38.8″, - 72° 05′ 0.5″ DSN 105-2: 41° 20′ 37.7″, - 72° 05′ 0.8″ DSN 105-3: 41° 20′ 37.6″, - 72° 04′ 55.8″ DSN 105-4: 41° 20′ 36.1″, - 72° 05′ 0″ DSN 106-1: 41° 20′ 52.5″, - 72° 05′ 3.2″ DSN 106-2: 41° 20′ 51.6″, - 72° 05′ 3.5″
WATER INTAKE LOCATIONS (LAT, LONG)	DSN 001-T: 41° 20′ 38.7″, - 72° 05′ 0.5″ DSN 002-T: 41° 20′ 53.4″, - 72° 04′ 55.8″ DSN 003-T: 41° 20′ 53.5″, - 72° 04′ 58.2″ DSN 004-T: 41° 20′ 49.7″, - 72° 04′ 55.7″ DSN 005-T: 41° 20′ 37″, - 72° 04′ 59″ DSN 006-T: 41° 20′ 36.7″, - 72° 04′ 59.2″ DSN 007-T: 41° 20′ 24.8″, - 72° 04′ 56.3″ DSN 008-T: 41° 20′ 24.8″, - 72° 04′ 56.8″
COMPLIANCE SCHEDULE	Yes
DEEP STAFF ENGINEER	Oluwatoyin Fakilede (860-418-5986) Oluwatoyin.fakilede@ct.gov

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1.1 PERMIT FEES

Application Fee

Filing Fee	Invoice No.: DEP 140944	Amount: $1,300.00	Date Paid: December 16, 2010
Processing Fee	Invoice No.: DEP 140945	Amount: $29,900.00	Date Paid: December 16, 2010

Annual Fee (per Regulations of Connecticut State Agencies (RCSA) Sec. 22a-430-7 and General Statutes of Connecticut (CGS) sec. 22a-6f)

DISCHARGE CODE	WASTEWATER CATEGORY	FLOW CATEGORY (Gallons per day)	DSNs	ANNUAL FEE
101057Z	Shipbuilding wastewater[1]	> 50,000	001-A, 001-B, 001-C, 001-D, 001-E, 001-G, 001-H, 002-A, 002-B, 002-C, 002-D, 002-E, 002-F, 002-G	$8,425.00
102000c	Non-contact cooling water (NCCW)	> 10,000,000	003-1, 004-1, 014-1, 101-1, 102-1	$8,425.00
1080000	Stormwater	NA	001-A, 001-B, 001-C, 001-D, 001-E, 001-G, 001-H, 002-A, 002-B, 002-C	$2,912.50
121000b	Hydrostatic pressure testing	> 50,000	007-A	$2,290.00
	Miscellaneous (Groundwater, steam condensate)		001-A to 001-H, 002-A to 002-G, 003-2 to 003-13, 004-2 to 004-10, 007-B, 101-2 to 101-9, 102-2 to 102-9, 103-1 to 103-5, 104-1 to 104-10, 105-1 to 105-4, 106-1 and 106-2	$0.00
TOTAL AMOUNT				**$ 22,052.50**

[1]Shipbuilding wastewaters include flooding water, non-contact cooling water, hull washwater, hydroblasting, vessel water, system flush water, and steam condensate.

1.2 APPLICATION SUBMITTAL INFORMATION

On December 16, 2010, the Department of Energy and Environmental Protection ("DEEP") received an application (Application No. 201006743) from Electric Boat Corporation ("EB", Permittee", "Applicant", or "facility") for the renewal of its NPDES Permit No. CT0003824, expiring on July 4, 2011 ("the previous permit"). Consistent with the requirements of Section 22a-6g of the Connecticut General Statutes ("CGS"), the applicant published a "Notice of Permit Application" in "The Day" newspaper on December 22, 2010. On January 13, 2011, the application was determined to be administratively sufficient.

The Permittee seeks authorization for the following in Application No. 201006743

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
GD: Graving dock MGD: Million gallon per day NCCW: Non-contact cooling water Wastewater is exposed to dock activities such as vessel construction or repair, and dock maintenance					
001-A		11,413,703	Dewatering of GD # 1 after a vessel arrives with gate closed.	No treatment	Thames River

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
001-B		11,413,703	Dewatering of GD # 1 after a vessel has launched with gate opened.	No treatment	Thames River
001-C		17,948,947	Dewatering of GD # 2 after a vessel arrives with gate closed.	No treatment	Thames River
001-D		17,948,947	Dewatering of GD # 2 after a vessel has launched with gate opened.	No treatment	Thames River
001-E	1,600,000	3,686,400	Wastewater from stripping of GDs #1 & #2 to maintain dry dock.	Cloth filtering for hydro-blasting wastewater	Thames River
001-G		2,608,846	Tidal equalization discharge from GD #1 with a vessel in wet berth (flood valves open).	No treatment	Thames River
001-H		4,102,621	Tidal discharge from GD #2 with a vessel in wet berth (flood valves open).	No treatment	Thames River
002-A		27,731,574	Wastewater from opening caisson to launch vessel from GD # 3.	No treatment	Thames River
002-B		27,731,574	Dewatering of flooded GD # 3 comprising of seawater and discharges associated with normal operations of a vessel.	No treatment	Thames River
002-C	1,833,600	2,640,000	Wastewater from GD # 3 to maintain dry dock including temporary auxiliary seawater.	Cloth filtering for hydro-blasting wastewater	Thames River
002-D		8,200,000	Partial dewatering of super flooded GD # 3.	No treatment	Thames River
002-E		3,521,470	Tidal discharge from a flooded GD #3 with a vessel in wet berth and the caisson gate valves open.	No treatment	Thames River
002-F		134,000	GD #3 caisson ballast water (North).	No treatment	Thames River
002-G		134,000	GD #3 caisson ballast water (South).	No treatment	Thames River
003-1	2,310,000	2,880,000	Temporary auxiliary NCCW (chlorinated or unchlorinated seawater) from Intake 002-T.	No treatment	Thames River
003-2		288,000	Intake 002-T pump test bypass water.	No treatment	Thames River
003-3		43,200	Intake 002-T pump system and supply header drain.	No treatment	Thames River
003-4		50	Intake 002-T pump #4 gland seal water.	No treatment	Thames River
003-5		50	Intake 002-T pump #5 gland seal water.	No treatment	Thames River

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
003-6		50	Intake 002-T pump #6 gland seal water.	No treatment	Thames River
003-7		500	Intake 002-T pump #4 drain.	No treatment	Thames River
003-8		500	Intake 002-T pump #5 drain.	No treatment	Thames River
003-9		500	Intake 002-T pump #6 drain.	No treatment	Thames River
003-10		90	Intake 002-T pump secondary strainer drain.	No treatment	Thames River
003-11		230,400	Intake 002-T pump #4 strainer backwash.	No treatment	Thames River
003-12		230,400	Intake 002-T pump #5 strainer backwash.	No treatment	Thames River
003-13		230,400	Intake 002-T pump #6 strainer backwash.	No treatment	Thames River
004-1		5,760,000	Temporary main NCCW (chlorinated seawater) from Intake 003-T.	No treatment	Thames River
004-2		6,200	Intake 003-T pump system and supply header drain.	No treatment	Thames River
004-3		2	Discharge header sampling point.	No treatment	Thames River
004-4		90	Intake 003-T secondary strainer drain	No treatment	Thames River
004-5		50	Intake 003-T pump #1 north gland seal water.	No treatment	Thames River
004-6		50	Intake 003-T pump #2 north gland seal water.	No treatment	Thames River
004-7		50	Intake 003-T pump #3 north gland seal water.	No treatment	Thames River
004-8		230,400	Intake 003-T pump #1 north strainer backwash.	No treatment	Thames River
004-9		230,400	Intake 003-T pump #2 north strainer backwash.	No treatment	Thames River
004-10		230,400	Intake 003-T pump #3 north strainer backwash.	No treatment	Thames River
007-A		25,920	32 outfalls of freeze protection bleed water.	No treatment	Thames River
007-B	3,600	4,896	33 outfalls of steam condensate.	No treatment	Thames River
101-1		8,064,000	Temporary auxiliary NCCW (sometimes chlorinated seawater) from Intake 007-T.	No treatment	Thames River
101-2		50	Intake 007-T north gland seal water.	No treatment	Thames River
101-3		50	Intake 007-T center gland seal water.	No treatment	Thames River
101-4		50	Intake 007-T south gland seal water.	No treatment	Thames River
101-5		285,120	Intake 007-T north strainer backwash.	No treatment	Thames River

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
101-6		285,120	Intake 007-T center strainer backwash.	No treatment	Thames River
101-7		285,120	Intake 007-T south strainer backwash.	No treatment	Thames River
101-8		90	Intake 007-T secondary strainer drain.	No treatment	Thames River
101-9		6,200	Intake 007-T pump system and supply header drain.	No treatment	Thames River
102-1		6,912,000	Temporary main NCCW (chlorinated seawater) from Intake 008-T.	No treatment	Thames River
102-2		90	Intake 008-T secondary strainer drain.	No treatment	Thames River
102-3		6,200	Intake 008-T pump system and supply header drain.	No treatment	Thames River
102-4		50	Intake 008-T north gland seal water.	No treatment	Thames River
102-5		50	Intake 008-T center gland seal water.	No treatment	Thames River
102-6		50	Intake 008-T south gland seal water.	No treatment	Thames River
102-7		285,120	Intake 008-T north strainer backwash.	No treatment	Thames River
102-8		285,120	Intake 008-T center strainer backwash.	No treatment	Thames River
102-9		285,120	Intake 008-T south strainer backwash.	No treatment	Thames River
103-1	52,320	153,040	Intake 001-T pump system and supply header testing.	No treatment	Thames River
103-2		8,640	Intake 001-T gland seal water and pump low point drain.	No treatment	Thames River
103-3		230,400	Intake 001-T pump #11 strainer backwash.	No treatment	Thames River
103-4		230,400	Intake 001-T pump #12 strainer backwash.	No treatment	Thames River
103-5		230,400	Intake 001-T pump #13 strainer backwash.	No treatment	Thames River
104-1	4,920,000	5,760,000	Temporary main NCCW (chlorinated seawater) from Intake 004-T.	No treatment	Thames River
104-2		6,200	Intake 004-T pump system and supply header drain.	No treatment	Thames River
104-3		2	Sampling point supply header discharge from Intake 004-T.	No treatment	Thames River
104-4		90	Intake 004-T secondary strainer drain.	No treatment	Thames River
104-5		50	Intake 004-T pump #1 south gland seal water.	No treatment	Thames River

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
104-6		50	Intake 004-T pump #2 south gland seal water.	No treatment	Thames River
104-7		50	Intake 004-T pump #3 south gland seal water.	No treatment	Thames River
104-8		230,400	Intake 004-T pump #1 south strainer backwash.	No treatment	Thames River
104-9		230,400	Intake 004-T pump #2 south strainer backwash.	No treatment	Thames River
104-10		230,400	Intake 004-T pump #3 south strainer backwash.	No treatment	Thames River
105-1		18,500	Dewatering of berthing fenders from GD#1 (east).	pH adjustment	Thames River
105-2		18,500	Dewatering of berthing fenders from GD#1 (west).	pH adjustment	Thames River
105-3		18,500	Dewatering of berthing fenders from GD#2 (east).	pH adjustment	Thames River
105-4		18,500	Dewatering of berthing fenders from GD#2 (west).	pH adjustment	Thames River
106-1		300,000	Dewatering of GD #3 basin during demucking operations.	No treatment	Thames River
106-2		300,000	Dewatering of river silt on barge during demucking operations.		

INTAKE	DESIGN INTAKE FLOW (gpd)	INTAKE WATER DESCRIPTION	SOURCE WATER
001-T	2,880,000	Temporary Auxiliary Seawater to GD # 1 and # 2.	Thames River (CT-E1_014-SB)
002-T	2,880,000	Temporary Auxiliary Seawater to GD # 3.	Thames River (CT-E1_014-SB)
003-T	5,760,000	Temporary Main Seawater to GD # 3.	Thames River (CT-E1_014-SB)
004-T	5,760,000	Temporary Main Seawater to GD # 3.	Thames River (CT-E1_014-SB)
005-T	806,400	Temporary Auxiliary Seawater to GD # 1 and # 2.	Thames River (CT-E1_014-SB)
006-T	806,400	Temporary Auxiliary Seawater to GD # 1 and # 2.	Thames River (CT-E1_014-SB)
007-T	8,064,000	Temporary Auxiliary Seawater to South Yard Assembly Building (Building 600).	Thames River (CT-E1_014-SB)
008-T	6,912,000	Temporary Main Seawater to South Yard Assembly Building (Building 600).	Thames River (CT-E1_014-SB)

1.3 OTHER PERMITS

The Permittee has other water discharges that are covered under different permitting mechanisms as follows:

- GSI000669: Stormwater from the site is permitted under the "General Permit for the Discharge of Stormwater Associated with Industrial Activity".

- CTSIU0066: Discharges to Groton Water Pollution Control Facility, comprising of contact cooling and heating wastewater, water treatment wastewater, other process wastewater, air conditioner condensate and blowdown, boiler blowdown wastewater, building maintenance wastewater, fire suppression system testing wastewater, hydrostatic pressure testing wastewater, NCCW, and potable water system maintenance are covered under the "General Permit for Discharges of Wastewaters from Significant Industrial Users".

- CTCSG0018: Discharges of NCCW for warming diving suits and fire suppression system testing wastewaters are covered under the "Comprehensive General Permit for Discharges to Surface Water and Groundwater".

- Discharges incidental to the normal operation of a vessel, prior to handing over the vessel to the United States (U.S.) Navy, are covered under the Environmental Protection Agency's (EPA) "Vessel General Permit for Discharges Incidental to the Normal Operations of Vessels" (VGP).

The Permittee also has the following diversion permits that authorize the withdrawal of water from the Thames River:

- Diversion Permit No. 3000-021-IND-RI: Authorization to withdraw 12 MGD.
- Diversion Permit No. 3000-022-IND-RI: Authorization to withdraw 18 MGD.
- Diversion Permit No. 3000-023-IND-RI: Authorization to withdraw 44 MGD.

On September 28, 2020, the Permittee surrendered Diversion Permit Nos. 3000-018-IND-RI, 3000-019-IND-RI, 3000-020-IND-RI, and 3000-024-IND-RI.

1.4 COMPLIANCE HISTORY

Based on EB's Discharge Monitoring Reports (DMR) data evaluated from December 2018 to November 2023, the Permittee reported the following effluent violations.

EFFLUENT VIOLATIONS IN THE PAST 5 YEARS					
MONTH/ YEAR	**DSN**	**PARAMETER**	**TYPE OF LIMIT**	**PERMITTED LIMIT**	**EXCEEDENCE**
4/2019	DSN 001-A	Copper, Total	Average monthly limit	48 µg/l	73.3 µg/l
8/2023		Copper, Total	Average monthly limit	48 µg/l	51.8 µg/l
7/2019	DSN 001-B	Copper, Total	Average monthly limit	48 µg/l	68.9 µg/l
11/2020	DSN 002-C	Oil and grease	Maximum daily limit	10 mg/l	23.9 mg/l
6/2022		Oxidants, free available	Max. Instantaneous limit	200 µg/l	720 µg/l
8/2022			Max. Instantaneous limit	200 µg/l	230 µg/l
9/2022			Max. Instantaneous limit	200 µg/l	300 µg/l
7/2021	DSN 004-1	Copper, Total	Maximum daily limit	32 µg/l	39.7 µg/l
2/2019	DSN 007-B	pH	Max. Instantaneous limit	9.5 SU	9.9 SU
11/2020			Max. Instantaneous limit	9.5 SU	9.62 SU
1/2023			Max. Instantaneous limit	9.5 SU	9.72 SU

EFFLUENT VIOLATIONS IN THE PAST 5 YEARS					
MONTH/ YEAR	**DSN**	**PARAMETER**	**TYPE OF LIMIT**	**PERMITTED LIMIT**	**EXCEEDENCE**
2/2023			Max. Instantaneous limit	9.5 SU	9.89 SU
3/2023			Max. Instantaneous limit	9.5 SU	10.23 SU
4/2023			Max. Instantaneous limit	9.5 SU	9.65 SU

See ongoing enforcement actions below for a discussion on how the above exceedances are being addressed.

Is the Permittee subject to an ongoing enforcement action? ☑ Yes ☑ No

1.4.1 ONGOING ENFORCEMENT ACTIONS

As a result of permit limit exceedances, the following Notice of Violations were issued: NOVWRIN14013, NOVWRIN16013, and NOVWRIN20012 on June 17, 2014, June 14, 2016, and April 21, 2020, respectively. The permit contains a compliance schedule that requires EB to evaluate alternative actions to achieve compliance with effluent limits.

1.4.2 PREVIOUS PERMIT COMPLIANCE SCHEDULE

Section 9(A) of the previous permit required the Permittee to complete and report the results of chronic toxicity monitoring for DSN 001-E and DSN 002-C. The Permittee now conducts chronic toxicity monitoring for DSN 001-E and DSN 002-C.

Section 9(B) of the previous permit required the Permittee to submit, for the Commissioner's review and written approval, a report on the alternative methods for flow monitoring of DSN 002-C. The report was submitted on 12/16/2006 and was approved on 2/15/2007.

Section 9(C) of the previous permit required the Permittee to submit for the Commissioner's review and written approval, a report describing the practice of discharging potable water during the winter for freeze protection of exposed water lines, the alternatives to this practice, ways to minimize this practice (water conservation), and to verify the area of chlorine impacts in the receiving stream associated with this practice. The report and a supplemental submittal were submitted on 12/16/2006 and 3/18/2011, respectively. The report was approved on 5/24/2011.

Section 9(D) of the previous permit required the Permittee to submit for the Commissioner's review and written approval, detailed plans of the system proposed to treat construction dewatering wastewaters. The plan was submitted on 3/8/2007 and an approval was issued on 3/23/2007.

1.4.3 SPILL HISTORY

Below is a list of spills that occurred at EB's site in the past five years.

DATE	MATERIAL	LOCATION	QUANTITY	SOURCE
2/17/2018	Hydraulic Oil	Graving Dock #3	2.0 Gal	Shipboard flushing (loose hose)
2/18/2018	Hydraulic Oil	Graving Dock #3	0.5 Gal	Shipboard flushing (residual)
7/3/2018	Compressor Oil	Graving Dock #1 SWW	1.0 Gal	Flush rig leak
12/14/2018	Hydraulic Oil	Bldg 263 NWW	5.0 Gal	Hyd pump leak
1/15/2019	Hydraulic Oil	Bldg 263 NWW	5.0 Gal	Hyd pump leak
2/8/2019	Hydraulic Oil	Bldg 263 NWW	5.0 Gal	Hyd pump leak
6/26/2019	Hydraulic Oil	Graving Dock #3	0.125 Gal	Hydraulic hose leak
8/16/2019	Paint (oil-based)	Graving Dock #2 NWW	0.5 Gal	Vendor Paint can leaked
9/27/2019	Oily Water	Station B-2 (stormdrain)	1.0 Gal	Paving operations
6/1/2020	Hydraulic Oil	SYAB (vendor spill)	4.0 Gal	Hydraulic hose failure
6/20/2020	Oily water/Simple Green	Graving Dock #2 NWW	1.0 Gal	Hose leak
7/22/2020	Hydraulic Oil	SYAB (vendor spill)	50.0 Gal	Broken hydraulic line
7/24/2020	Hydraulic Oil	SSN793 deck	0.25 Gal	Hydraulic hose leak
8/3/2021	Hydraulic Oil	SSN793 sail	3.0 Gal	Hydraulic leak
9/22/2021	Chain lube oil	300Ton Crane-263S	0.125 Gal	Stormwater contact with Chain
8/24/2022	Hydraulic Oil/Water	Graving Dock #2 Basin	5.0 gallons	Overflow of Frac Tank
9/6/2022	Creosol sheen	Thames River (NYP Demo)	Unknown	Removal of Timber Dock
11/1/2022	Petroleum sheen	Thames River (Security Dock)	<0.01 Gal	Boat bilge sheen
3/27/2023	Hydraulic Oil	SSN795 Topside	1.0 Gal	Hydraulic hose leak
4/17/2023	Hydraulic Oil	NYP (vendor spill)	<0.10 Gal	Hydraulic hose failure
6/12/2023	Latex Paint	Southyard near G-23	0.5 Gal	Roadway striping (stormwater)
7/5/2023	Sewage	Building 8S	50.0 Gal	Failed sensor
7/20/2023	Hydraulic Oil	Bldg 263 NWW	5.0 Gal	Portable Crane Hydraulic Failure
9/26/2023	Hydraulic Oil	Bldg 88	<0.10 Gal	Vehicle leak
11/13/2023	Sewage	Bldg154/184	75 Gal	SSN793 offload leak

The spills were immediately cleaned up.

1.5 FACILITY DESCRIPTION

EB, a wholly owned subsidiary of General Dynamics Corporation, designs, builds, and maintains submarines for the U.S. Navy. They have operated on-site since 1911. The EB facility occupies 113 acres in a mixed residential/commercial/industrial area on the eastern side of the Thames River in the City of Groton. The site consists of 110 buildings. 26 of those buildings are for operations. There are three graving docks that are used in support of construction, testing, repair, and maintenance of submarines. The facility is in operation 24-hours per day.

Discharges that are the subject to this NPDES permit occur primarily in and around Building 260 (B260), Building 263 (B263), Graving Docks (GD) #1, #2 and #3, and Building 600 (B600).

Graving Docks #1 and #2 are used primarily to support overhaul, maintenance, and repair work on submarines. Both docks are identical only varying in size. GD #1 has a capacity of 10.846 million gallons at mean high water and GD #2 has a capacity of 18.264 million gallons at mean high water. The docks share a common wall. Both are constructed with concrete side walls and a concrete basin floor. The western end of each dock contains a gate that closes the dock off from the river. The gates can be lowered to the riverbed to open the dock to the river and allow vessels to enter or exit. Thames River water floods the dock through flood valves located in the gates; GD #1 includes eight 18-inch flood valves and GD #2 includes ten 18-inch flood valves.

The docks have two separate dewatering systems. The primary system consists of two pumps that dewater the dock of flood water. The secondary system consists of four stripper pumps that pump any residual dock waters off the floor to keep it dry. The drainage system in each dock consists of a series of catch basins and piping underneath the concrete floor, leading to a sump at the common wall. Each sump drains to a common pump well in the center wall. Pumps then discharge the collected water into the Thames River through a concrete channel at the western end of the center wall. Each sump can be sealed to allow for independent operation of each dock.

GD #3 may infrequently be used for similar activity. GD #3 was constructed in the 1970s and is approximately 583 feet long by 102 feet wide and has a capacity of 34.3 million gallons at mean high water and 40.4 million gallons at super flood level. GD #3 is constructed with concrete side walls, a bedrock basin, and is equipped with a pontoon used to launch or lift the vessel.

The western end of the dock faces the river and is equipped with a floating caisson gate. When the gate fills with water it forms a seal on the end of the graving dock, preventing the river water from entering the dock. Flooding the GD occurs by opening the two 24-inch flood valves on the caisson gate. GD #3 is also equipped with a super flooding system. Two 24-inch super flooding valves in the caisson are used to raise the water level inside the dock to elevations higher than what occurs through normal flooding.

Following dock flooding, the water in the caisson's ballast tanks is drained via pump through four 4-inch valves. This allows the caisson to be released from its seat, where it can be towed away from the graving dock, allowing the dock to open to the river. When the dock needs to be closed, the caisson is reseated by opening the two 12-inch flood valves. Thames River water forces the caisson into its seat and seals the dry dock.

1.6 DESCRIPTION OF INDUSTRIAL PROCESS

1.6.1 DSN 001-A

Discharge description:

1. Partially or fully flooded GD #1 dewatering after the arrival of a vessel. This discharge occurs for 6 hours over 1-2 operating days per event, 1-3 times per year.
2. Partially or fully flooded GD #1 dewatering after wet berth of a vessel in an enclosed dock. This discharge occurs for 6 hours over 1-2 operating days per event, 1-3 times per year.

3. Partially or fully flooded GD #1 dewatering after undocking a vessel or for maintenance. This discharge occurs for 4-6 hours per event, 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, pump seal water, stormwater, incidental precipitation, and ballast water. See Section 1.7 for waste streams descriptions.

1.6.2 DSN 001-B

Discharge description:

1. Opening the gate to dewater GD #1 in preparation to receive a vessel. This discharge occurs instantaneously 1-3 times per year.
2. Opening the gate to dewater GD #1 after wet berth of a vessel in an enclosed dock. This discharge occurs instantaneously 1-3 times per year.
3. Opening the gate to dewater GD #1 or for dock maintenance. This discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, pump seal water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.3 DSN 001-C

Discharge description:

1. Partially or fully flooded GD #2 dewatering after the arrival of a vessel. This discharge occurs for 10 hours over 1-2 operating days per event, 1-3 times per year.
2. Partially or fully flooded GD #2 dewatering immediately after wet berth of a vessel in an enclosed dock. This discharge occurs for 10 hours over 1-2 operating days per event, 1-3 times per year.
3. Partially or fully flooded GD #2 dewatering immediately after undocking a vessel or for maintenance. This discharge occurs for 6-10 hours per event, 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, pump seal water, stormwater, incidental precipitation, and ballast water. See Section 1.7 for waste streams descriptions.

1.6.4 DSN 001-D

Discharge description:

1. Opening the gate to dewater GD #2 after vessel maintenance or repair. This discharge occurs instantaneously 1-3 times per year.

2. Opening the gate to dewater GD #2 after wet berth of a vessel in an enclosed dock. This discharge occurs instantaneously 1-3 times per year.
3. Opening the gate to dewater GD #2 in preparation to receive a vessel or for dock maintenance. This discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, pump seal water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.5 DSN 001-E

Discharge description:

1. Continuous dewatering to maintain dryness in GD #1 and GD #2

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface wash water, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, pump seal water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.6 DSN 001-G

Discharge description:

1. Tidal discharge from a flooded GD#1 with a vessel in wet berth with gate valves opened. This discharge occurs 1-3 times per year about twice per day.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.7 DSN 001-H

Discharge description:

1. Tidal discharge from flooded GD#2 with a vessel in wet berth with gate valves opened. This discharge occurs 1-3 times per year about twice per a day.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.8 DSN 002-A

Discharge description:

1. Opening the caisson gate to release water from a flooded GD #3 following new construction or maintenance/repair. This discharge occurs instantaneously 1-3 times per year.
2. Opening the caisson gate to release water from a flooded GD #3 after wet berth of a vessel in an enclosed dock. This discharge occurs instantaneously 1-3 times per year.
3. Opening the caisson gate to release water from a flooded GD #3 in preparation to receive a vessel or for dock maintenance. This discharge occurs instantaneously 1-3 times per year.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.9 DSN 002-B

Discharge description:

1. Partially or fully flooded GD #3 dewatering after the arrival of a vessel. This discharge occurs 1-3 times per year for 2-3 operating days per event.
2. Partially or fully flooded GD #3 dewatering immediately after wet berth of a vessel in an enclosed dock. This discharge occurs 1-3 times per year for 2-3 operating days per event.
3. Partially or fully flooded GD #3 dewatering immediately after undocking a vessel or for maintenance occurs 1-3 times per year for 2-3 operating days per event.
4. Partially or fully flooded GD #3 dewatering with a vessel on the pontoon during transfer of a new construction vessel occurs 1-3 times per year for 2-3 operating days per event.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, stormwater, incidental precipitation, and ballast water. See Section 1.7 for waste streams descriptions.

1.6.10 DSN 002-C

Discharge description:

1. Continuous dewatering to maintain GD #3 water level below the dry-docked vessel and pontoon surface (-40’ mean level water (MLW)) or maintain dock level below 0’ MLW for dock maintenance with no vessel present in the dock.
2. Continuous maintenance dewatering to maintain GD #3 water level with a vessel wet-berthed in an enclosed dock.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface washwater, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, stormwater, and incidental precipitation.

See Section 1.7 for waste streams descriptions.

1.6.11 DSN 002-D

Discharge description:

1. Partial dewatering of a super flooded GD #3 immediately following wet berth of a vessel in an enclosed dock. This discharge occurs 1-3 times a year for about 5 hours per event.
2. Partial dewatering of a super flooded GD #3 with a vessel on the pontoon during transfer of a new construction vessel. This discharge occurs 1-3 times a year for about 5 hours per event.
3. Partial dewatering of a super flooded GD #3 immediately following dock maintenance. This discharge occurs 1-3 times a year for about 5 hours per event.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, air conditioning condensate, groundwater infiltration, gate seal and flood valve leakage, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.12 DSN 002-E

Discharge description:

1. Tidal discharge from a flooded GD#3 with a vessel in wet berth with the caisson gate valves opened. This discharge occurs 1-3 times a year for about 6 hours about twice in a day.

Wastewaters include floodwater, NCCW, hull coating leachate, cathodic protection contact water, free flood areas and outboard equipment contact water, diesel exhaust stack contact cooling water, propulsion shaft seal and bearing contact cooling water, steam condensate, freeze protection bleed water, groundwater infiltration, gate seal and flood valve leakage, pump seal water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.6.13 DSN 002-F

Discharge description:

1. Removal of water from the GD#3 northern caisson ballast tank. Discharge occurs 5-8 times a year for 4 hours per event.

1.6.14 DSN 002-G

Discharge description:

1. Removal of water from the GD#3 southern caisson ballast tank. Discharge occurs 5-8 times a year for 4 hours per event.

1.6.15 DSN 003 series

DSN 003-1

Discharge description:

1. Continuous temporary auxiliary NCCW from Intake 002-T for shipboard heat exchangers on new vessels under construction in Building 260. Wastewater may be chlorinated to reduce biofouling.

DSN 003-2

Discharge description:

1. Continuous bypass to river from Intake 002-T for pump testing. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 003-3

Discharge description:

1. Pump system and supply header draining from Intake 002-T. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 003-4

Discharge description:

1. Continuous intake pump gland seal water from Intake 002-T pump #4 when pump is operating.

DSN 003-5

Discharge description:

1. Continuous intake pump gland seal water from Intake 002-T pump #5 when pump is operating.

DSN 003-6

Discharge description:

1. Continuous intake pump gland seal water from Intake 002-T pump #6 when pump is operating.

DSN 003-7

Discharge description:

1. Pump system draining from Intake 002-T pump #4. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 003-8

Discharge description:

1. Pump system draining from Intake 002-T pump #5. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 003-9

Discharge description:

1. Pump system draining from Intake 002-T pump #6. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 003-10

Discharge description:

1. Secondary strainer draining from Intake 002-T. Discharge occurs 1 -3 times per day during operation.

DSN 003-11
Discharge description:
1. Continuous strainer backwash from Intake 002-T pump #4 when pump is operating.

DSN 003-12
Discharge description:
1. Continuous strainer backwash from Intake 002-T pump #5 when pump is operating.

DSN 003-13
Discharge description:
1. Continuous strainer backwash from Intake 002-T pump #6 when pump is operating.

1.6.16 DSN 004 series
DSN 004-1
Discharge description:
1. Continuous temporary main NCCW from Intake 003-T for cooling or steam testing operations (North discharge). This discharge occurs continuously for 12 weeks about 1-2 per year. Wastewater may be chlorinated to reduce biofouling.

DSN 004-2
Discharge description:
1. Pump system and supply header draining from Intake 003-T. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 004-3
Discharge description:
1. Sampling point header discharge from Intake 003-T. Discharge occurs 1 – 3 times per day during operations.

DSN 004-4
Discharge description:
1. Draining of secondary strainer from Intake 003-T. Discharge occurs 1 – 3 times per day during operations.

DSN 004-5
Discharge description:
1. Continuous intake pump gland seal water from Intake 003-T north pump #1 when pump is operating.

DSN 004-6
Discharge description:
1. Continuous intake pump gland seal water from Intake 003-T north pump #2 when pump is operating.

DSN 004-7
Discharge description:

1. Continuous intake pump gland seal water from Intake 003-T north pump #3 when pump is operating.

DSN 004-8
Discharge description:

1. Continuous strainer backwash from Intake 003-T north pump #1 when pump is operating.

DSN 004-9
Discharge description:

1. Continuous strainer backwash from Intake 003-T north pump #2 when pump is operating.

DSN 004-10
Discharge description:

1. Continuous strainer backwash from Intake 003-T north pump #3 when pump is operating.

1.6.17 DSN 007-A
Discharge description:

1. Continuous seasonal (in cold weather conditions) freeze protection bleed water. Wastewaters are from 32 individual outfalls (listed on pages 2-3).

1.6.18 DSN 007-B
Discharge description:

1. Continuous seasonal (in cold weather conditions) steam condensate. Wastewaters are from 33 individual outfalls (listed on page 3).

1.6.19 DSN 101 series
DSN 101-1
Discharge description:

1. Continuous temporary auxiliary NCCW from Intake 007-T for shipboard heat exchangers on vessels under construction and diesel engine wet exhaust and diesel stack contact cooling water in Building 600. Wastewater may be chlorinated to reduce biofouling.

DSN 101-2
Discharge description:

1. Continuous pump gland seal water from Intake 007-T north pump when pump is operating.

DSN 101-3
Discharge description:

1. Continuous pump gland seal water from Intake 007-T center pump when pump is operating.

DSN 101-4
Discharge description:

1. Continuous pump gland seal water from Intake 007-T south pump when pump is operating.

DSN 101-5
Discharge description:
1. Continuous strainer backwash from Intake 007-T north pump when pump is operating.

DSN 101-6
Discharge description:
1. Continuous strainer backwash from Intake 007-T center pump when pump is operating.

DSN 101-7
Discharge description:
1. Continuous strainer backwash from Intake 007-T south pump when pump is operating.

DSN 101-8
Discharge description:
1. Draining of secondary strainer from Intake 007-T. Discharge occurs 1 – 3 times per day during operation.

DSN 101-9
Discharge description:
1. Pump system and supply header draining from Intake 007-T. Discharge occurs infrequently, about once a year, and only if pump testing is required.

1.6.20 DSN 102 series
DSN 102-1
Discharge description:
1. Continuous temporary main NCCW from Intake 008-T for shipboard steam testing operations in Building 600. This discharge occurs continuously for 12 weeks about 1-2 times per year. Wastewater may be chlorinated to reduce biofouling.

DSN 102-2
Discharge description:
1. Secondary strainer draining from Intake 008-T. Discharge occurs 1-3 times per day during operation.

DSN 102-3
Discharge description:
1. Pump system and supply header draining from Intake 008-T. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 102-4
Discharge description:
1. Continuous intake pump gland seal water from Intake 008-T north pump when pump is operating.

DSN 102-5
Discharge description:

1. Continuous intake gland seal water from Intake 008-T center pump when pump is operating.

DSN 102-6
Discharge description:

1. Continuous intake gland seal water from Intake 008-T south pump when pump is operating.

DSN 102-7
Discharge description:

1. Continuous strainer backwash from Intake 008-T north pump when pump is operating.

DSN 102-8
Discharge description:

1. Continuous strainer backwash from Intake 008-T center pump when pump is operating.

DSN 102-9
Discharge description:

1. Continuous strainer backwash from Intake 008-T south pump when pump is operating.

1.6.21 DSN 103 series
DSN 103-1
Discharge description:

1. Pump system and supply header draining from Intake 001-T. Discharge occurs infrequently, about once a year, and only if pump testing is required.

DSN 103-2
Discharge description:

1. Continuous gland seal water from Intake 001-T pump when pump is operating.

DSN 103-3
Discharge description:

1. Continuous strainer backwash from Intake 001-T pump #11 when pump is operating.

DSN 103-4
Discharge description:

1. Continuous strainer backwash from Intake 001-T pump #12 when pump is operating.

DSN 103-5
Discharge description:

1. Continuous strainer backwash from Intake 001-T pump #13 when pump is operating.

1.6.22 DSN 104 series

DSN 104-1

Discharge description:

1. Continuous once-through temporary main NCCW from Intake 004-T used for shipboard testing operations (South discharge). This discharge occurs continuously for 12 weeks about 1-2 per year. Wastewater may be chlorinated to reduce biofouling.

DSN 104-2

Discharge description:

1. Pump system and supply header draining from Intake 004-T. Discharge occurs infrequently, once a year, only if pump testing is required.

DSN 104-3

Discharge description:

1. Sampling point supply header discharge from Intake 004-T. Discharge occurs daily.

DSN 104-4

Discharge description:

1. Secondary strainer draining from Intake 004-T. Discharge 1 – 3 times per day during operation.

DSN 104-5

Discharge description:

1. Continuous gland seal water from Intake 004-T south pump #1 when pump is operating.

DSN 104-6

Discharge description:

1. Continuous gland seal water from Intake 004-T south pump #2 when pump is operating.

DSN 104-7

Discharge description:

1. Continuous gland seal water from Intake 004-T south pump #3 when pump is operating.

DSN 104-8

Discharge description:

1. Continuous strainer backwash from Intake 004-T south pump #1 when pump is operating.

DSN 104-9

Discharge description:

1. Continuous strainer backwash from Intake 004-T south pump #2 when pump is operating.

DSN 104-10

Discharge description:

1. Continuous strainer backwash from Intake 004-T south pump #3 when pump is operating.

1.6.23 DSN 105 series

DSN 105-1

Discharge description:

1. Biennial dewatering of berthing fender at the east end of GD # 1.

DSN 105-2

Discharge description:

1. Biennial dewatering of berthing fender at the west end of GD # 1.

DSN 105-3

Discharge description:

1. Biennial dewatering of berthing fender at the east end of GD # 2.

DSN 105-4

Discharge description:

1. Biennial dewatering of berthing fender at the west end of GD # 2.

1.6.24 DSN 106 series

DSN 106-1

Discharge description:

1. Dewatering of river silt on barge during GD #3 demucking operations from the north wing wall. This discharge occurs for approximately 2 weeks every 5 years.

Wastewaters include NCCW, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface washwater, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

DSN 106-2

Discharge description:

1. Dewatering of river silt on barge during GD #3 demucking operations from the west wing wall. This discharge occurs for approximately 2 weeks every 5 years.

Wastewaters include NCCW, steam condensate, freeze protection bleed water, fire suppression system testing, air conditioning condensate, dock and pontoon surface washwater, hull, tank and equipment wash and lancing water, system test water, groundwater infiltration, gate seal and flood valve leakage, hydrostatic drain water, stormwater, and incidental precipitation. See Section 1.7 for waste streams descriptions.

1.7 WASTE STREAMS DESCRIPTION

- Floodwater - River water is used to flood the dock to support vessel movement or dock maintenance. The floodwater may contain trace amounts of other wastewaters that inadvertently enter the flooded dock, including other process waters, groundwater, stormwater, and incidental precipitation, which can contribute copper and zinc.

- Non-Contact Cooling Water (NCCW) – River water is normally recirculated by vessel onboard pumps in a flooded condition. River water from the intake may also be used at any time to provide continuous non-contact cooling to the vessel's cooling water system. The heated river water is discharged into the floodwater or directly to the river. The NCCW water may also contain chlorine from biofouling prevention and copper and nickel from the cooling water piping system.

- Hull Coating Leachate - Antifouling agents applied to the vessel's hull surface leach into the floodwater. The degree of leaching is contingent upon the age and condition of the coating, the duration of time that the vessel remains enclosed in the dock, and the temperature of the floodwater. Copper and zinc-based constituents in the antifouling agents are expected to leach from the coating into the floodwater.

- Cathodic Protection Contact Water - Cathodic protection systems located on the exterior of the vessel are designed to prevent hull corrosion. When operational, these systems can release zinc, aluminum, and chlorine-produced oxidants into the floodwater.

- Free Flood Areas and Outboard Equipment Contact Water - Free-flood areas of the submarine, including ballast tanks and exterior hull cavities, are exposed to river water and dock floodwater during the docking process. Some exposed equipment contain oil and grease and trace metals which can be released into the floodwater.

- Diesel Exhaust Stack Contact Cooling Water and Diesel Engine Wet Exhaust - When the diesel generator is operating, water from the vessel's cooling system is used to cool the gases in the exhaust stack. Any of the contact cooling water that is not evaporated in the process is discharged from the vessel into the floodwater. According to Appendix A of EPA-842-R-99-001 - Phase I Final Rule and Technical Development Document of Uniform National Discharge Standards (UNDS), wastewater may include particulates and polynuclear aromatic hydrocarbons, including acenaphtylene, phenanthrene, chrysene, benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluorenthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene.

- Propulsion Shaft Seal and Bearing Contact Cooling Water – Potable water from onboard the vessel is used to cool and lubricate the seals and bearings associated with the propulsion shaft. Leakage from the seals and bearings discharge into the floodwater.

- Pump Seal Water - Pump seal water is supplied from river water to each dock maintenance dewatering pump automatically when each pump is operating.

- Steam Condensate - Steam condensate from temporary steam heaters, manifolds or hose connections may discharge into the floodwater or directly into the river during cold weather use. Steam condensate may contain trace amounts of boiler feedwater treatment chemicals and includes a thermal component.

- Freeze Protection Bleed Water - Potable water or demineralized water will discharge into the floodwater or directly into the river during cold weather use.

- Fire Suppression System Testing – Potable water may be discharged to test fire suppression system piping or hoses, demonstrate emergency readiness, and perform periodic flushes on system hydrants or standpipes.

- Air Conditioner Condensate - Portable air conditioning units may be used during warm weather months to supplement or replace vessel onboard air conditioning systems, or to cool localized work areas on the dock floor.

- Dock Washwater – Potable water is used to periodically remove marine fouling or sediment from the dock surfaces and permanently installed equipment. The structures are power washed with city water and the solids are contained and managed in accordance with EB's Best Management Practices Plan.

- Hull, Tank and Equipment Wash, and Lancing Water – Potable water is used to remove biofouling from exposed hull, ballast tank and equipment surfaces. This is conducted as routine maintenance during each vessel dry-docking, or to lance special hull coating material from the structural steel hull.

- System Test Waters - Testing of permanently installed systems in the dock (e.g., freshwater or seawater piping systems) may periodically generate wastewater during testing operations (e.g., fire suppression test water, hydrostatic test water, pump testing).

- Groundwater Infiltration - Groundwater enters the dock through the exposed bedrock. Most recent groundwater monitoring data in the vicinity of GD #1 and GD #2 indicated that the groundwater may contain detectable levels of copper, zinc, arsenic, chromium, lead, silver and selenium.

- Gate Seal and Flood Valve Leakage - River water may leak into graving docks through the gate seal and flood valves in the caisson gates.

- Hydrostatic Drain Water - The dock walls are equipped with hydraulic relief drains designed to reduce the hydrostatic pressure on the dock walls. River water continuously drains from the system and onto the basin floor.

- Stormwater - During an active storm event, stormwater enters the graving docks from the storm drain systems. Management of these areas to prevent discharge to the environment is addressed in EB's Best Management Practices Plan.

- Incidental Precipitation - Rainwater and snow can enter the uncovered dock and come into contact with the exposed materials in the dock, including the vessel hull and pontoon surface.

- Ballast Water - River water is used to ballast equipment required for operations and/or vessel movement.

- Berthing Fender Ballast Water - Domestic water is used to fill the dock fenders with the addition of soda ash. These fenders are drained periodically for inspection, maintenance and/or repair.

1.8 FACILITY CHANGES

There have been two permit modifications since the last permit renewal.

On April 17, 2008, the average daily and maximum daily flow limits for DSN 001F (construction dewatering wastewater) were changed from 0.3 and 0.6 MGD respectively, to 1.5 MGD. The maximum daily flow for DSN 002-B (graving dock dewatering) was also changed from 8.25 MGD to 33 MGD.

On August 10, 2010, Section 5(A) Table A (DSN 001-1), Table F (DSN 001-E), Table H (DSN 002-1), Table K (DSN 002-C), and Table L (DSN 003), were revised to include hydro blasting operation wastewater discharges for DSN 001-E and DSN 002-C and increase flow for DSN 003.

In 2014, there was a facility and treatment system modification performed in accordance with Section 22a-430-3(i) of the RCSA. Application No. 201407155 resulted in approval to temporarily relocate the discharge piping, discharge location, and sampling locations for DSN 001-A, DSN 001-C and DSN 001-E. The temporary relocation occurred between July 14, 2014, to November 20, 2014, to enable demolition of the spillway so that underlying dock repair could be performed. The discharge piping, location and sampling ports were returned to the original configuration following completion of the repair work.

1.8.1 DEEP has issued the following Temporary Authorizations to Electric Boat:

TA0100406: Authorization to discharge auxiliary seawater system testing wastewater which included backwash of self-cleaning intake strainers, gland seal water from intake pumps, and water drained from in-line secondary intake strainers was issued on January 9, 2023. The authorization expired on January 9, 2024.

TA0100407: Authorization to discharge auxiliary seawater system testing wastewater which included backwash of self-cleaning intake strainers, gland seal water from intake pumps, and water drained from in-line secondary intake strainers was issued on January 9, 2023. The authorization expired on January 9, 2024.

TA0100408: Authorization to discharge NCCW was issued on March 2, 2023. The authorization expired on March 2, 2024.

TA0100411: Authorization to discharge ballast waters from draining berthing fenders was issued on June 30, 2023. The authorization will expire on June 30, 2026.

TA0100412: Authorization to discharge silt dewatering wastewater from river silt removal from the basin of GD #3 was issued on July 21, 2023. The authorization will expire on July 21, 2024.

TA0100413: Authorization to discharge infiltrating seawater and groundwater during work to remove river silt from the basin of GD #3 was issued on July 21, 2023. The authorization will expire on July 21, 2024.

TA0100414: Authorization to discharge NCCW was issued on January 10, 2024. The authorization will expire on January 9, 2025.

The above discharges have been included in the permit renewal application and are permitted under the renewed permit.

1.9 TREATMENT SYSTEM DESCRIPTION

EB does not treat most of its wastewater. Hydro blasting wastewater is cloth filtered before it comingles with other wastewaters. Berthing fender water is pH adjusted using soda ash.

1.10 GENERAL ISSUES RELATED TO THE APPLICATION

1.10.1 Federally Recognized Indian Land
As provided in the permit application, the site is not located on federally recognized Indian land.

1.10.2 Coastal Area/Coastal Boundary
The activity is located within a coastal area/boundary as defined in CGS 22a-94(b), but the application is for an existing facility that has been operating since 1911.

1.10.3 Endangered Species
Based on an April 5, 2024 letter provided to the Permittee from the National Diversity Data Base (NDDB) Program for the discharges covered under Permit No. CT0003824, it was determined that populations of the following state endangered, threatened, or special concern species have been documented within the project area or near the proposed wastewater and other surface water discharges:

Shortnose sturgeon (*Acipenser brevirostrum*)
Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)
Sand tiger shark (*Carcharias taurus*)
Atlantic seasnail (*Liparis atlanticus*)
Radiated shanny (*Ulvaria subbifurcata*)
Blue herring (*Alosa aestivalis*)

NDDB recommended best management practices to minimize the impact to and loss of preferred habitat. Protection measures in species general ecology that relate to the project activities were also recommended.

In addition, the DEEP Fisheries Program reviewed the design of the facility's intake structures and are in agreement that the proposed intake structures will be effective for minimizing entrainment and impingement (see Attachment 5).

1.10.4 Aquifer Protection Areas
As provided in the permit application, the site is not located within a protected area identified on a Level A or B map.

1.10.5 Conservation or Preservation Restriction
As provided in the permit application, the property is not subject to a conservation or preservation restriction.

1.10.6 Public Water Supply Watershed
As provided in the permit application, the site is not located within a public water supply watershed.

SECTION 2 RECEIVING WATER BODY

2.1 RECEIVING WATER BODY INFORMATION

The receiving waterbody, Thames River, is identified as CT-E1_014-SB. The segment of the Thames River is classified as SB and its designated uses include; 1) habitat for fish and other aquatic life and wildlife, 2) recreation, 3) industrial water supply, 4) navigation, and 5) commercial shellfish harvesting, where authorized.
FINAL-2022-IWQR-Appendix-A-3-Connecticut-305b-Assessment-Results-for-Estuaries.pdf

The Thames River is on the State's 305(b) list of impaired waters. It is impaired for its designated uses of habitat for marine fish, other aquatic life, and wildlife due to low dissolved oxygen levels and shellfish harvesting due to fecal coliform. FINAL-2022-IWQR-Appendix-B-1-List-of-Impaired-Waters-for-Connecticut-EPA-Category-5.pdf

Figure 2.1. Image of discharge locations

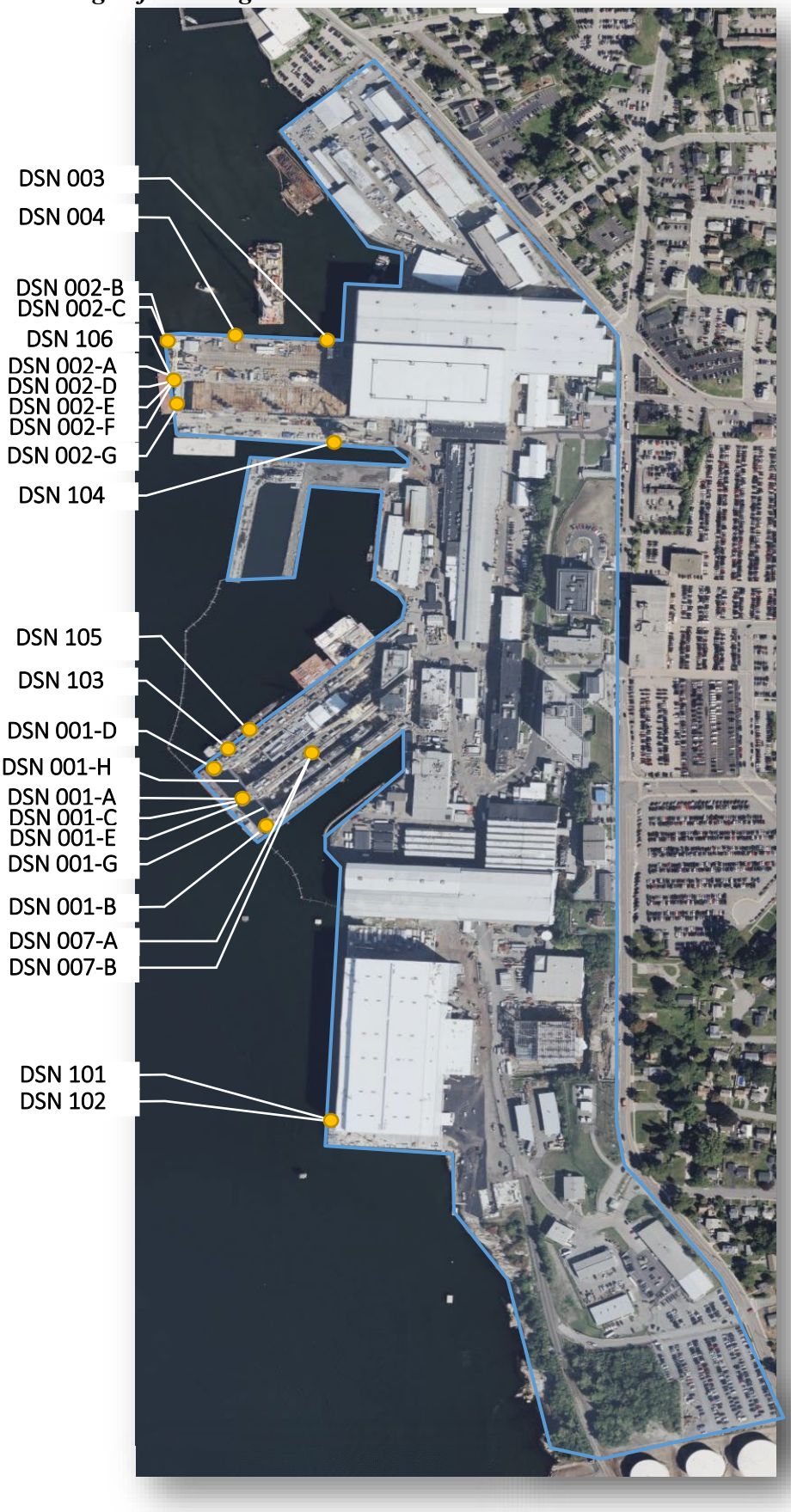


Figure 2.2. Image of Applicable Section of 2022 Connecticut Integrated Water Quality Report

Connecticut 2022 305b Assessment Results Estuaries Appendix A-3

Waterbody Segment ID	Waterbody Name	Location	Square Miles	Aquatic Life	Recreation	Shellfish	Shellfish Class
CT-E1_014-SB	LIS EB Inner - Thames River (Mouth), New London	See Map for Boundaries. Eastern portion of LIS, Inner Estuary, mouth of Thames River from Eastern Point (North of Avery Point), US to I95 crossing (Includes Inner New London Harbor), Groton.	1.994	Not Supporting	Fully Supporting	Not Supporting	Commercial Shellfish Harvesting Where Authorized

Figure 2.3. Image of Applicable List of impaired waters for Connecticut

2022 Appendix B-1. List of Impaired Waters for Connecticut (EPA Category 5)

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT-E1_014-SB	LIS EB Inner - Thames River (Mouth), New London	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_014-SB	LIS EB Inner - Thames River (Mouth), New London	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife

2.2 APPLICABLE TOTAL MAXIMUM DAILY LOAD (TMDL)

A TMDL for fecal coliform (impairment to shellfish harvesting) has been established for Thames River, Segment ID CT-E1_014-SB. This TMDL is part of the "Statewide Total Maximum Daily Load for Bacteria-Impaired Waters" (September 2013). FINAL-2022-IWQR-Appendix-B-2-Waterbodies-with-Adopted-TMDLs-EPA-Category-4a.pdf

The CT Water Quality Standards for fecal coliform are a geometric mean less than 88/100ml and 90% of samples less than 260/100ml. Although end of pipe bacteria measurements can identify and help prioritize sources that require attention, compliance with this TMDL will be based on ambient water quality and not water quality at the point of discharge (i.e., end of pipe). Therefore, monitoring requirements and not limits for fecal coliform were included in the DSN 002 series because of the levels of fecal coliform stated in the permit renewal application's Attachment O. Also, monitoring requirements were included for DSN 001-E, which is a continuous discharge, but it was not included for the other intermittent discharges that showed low levels of fecal coliform (see Section 3.2).

"A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound" (December 2000) also applies to this segment of Thames River. However, the Permittee's discharge has not been assigned a waste load allocation for nitrogen as part of this TMDL. Tmdl.pdf (longislandsoundstudy.net). Nitrogen monitoring requirements are required in the permit for the continuous discharges.

Figure 2.4. Image of Applicable 2022 IWQR Waterbodies with Adopted TMDLs

2022 IWQR Waterbodies with Adopted TMDLs

Waterbody Segment ID	TMDL	Basin Number	Waterbody Name	Impaired Designated Use	Cause	EPA Approved	TMDL Link	Category/sub category
CT-E1_014-SB	CT Statewide Bacteria TMDL Estuary 11	N/A	LIS EB Inner Thames River Mouth	Shellfish Harvest	Fecal Coliform	2013	https://portal.ct.gov/-/media/DEEP/water/tmdl/CTFinalTMDL/estuary11newlondongroton	4a

SECTION 3 PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

3.1 TECHNOLOGY BASED EFFLUENT LIMITATIONS

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA § 301(b) and 402 to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. *See* 40 CFR § 125 Subpart A and RCSA Section 22a-430-4(l)(4)(A).

Subpart A of 40 CFR § 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA § 402(a)(1). EPA promulgates New Source Performance Standards (NSPS) under CWA § 306 and 40 CFR § 401.12. *See also* 40 CFR § 122.2 (definition of "new source") and 122.29.

The following Effluent Guidelines and Standards were reviewed to determine their applicability to the facility's discharges:

40 CFR § 1700 - Uniform National Discharge Standards for Vessels of the Armed Forces was reviewed. This regulation is not applicable to vessels while under construction or in a dry dock. EB is a ship building facility. Therefore, 40 CFR § 1700 is not applicable to Electric Boat's discharges.

40 CFR § 438 – Metal Products and Machinery Point Source Category: This regulation is not applicable to wastewater discharges in or on dry docks and similar structures, such as graving docks, building ways, etc. EB is a ship building facility that generates wastewaters in and around graving docks. Therefore, 40 CFR § 438 is not applicable to EB's discharges.

In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA § 402(a)(1)(B) and RCSA Section 22a-430-4(m) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

3.2 POLLUTANTS OF CONCERN

The following pollutants are included for monitoring at DSN 001-A for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Oil and grease, Total		X	

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 001-B for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Chromium, Total		X	
Copper, Total		X	
Lead, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 001-C for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 001-D for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Chromium, Total		X	
Copper, Total		X	
Lead, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 001-E for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Ammonia (as Nitrogen)		X	
Oxidants, Total Residual		X	
Chromium, Total		X	
Copper, Total		X	
Fecal coliform		X	
Lead, Total		X	
Mercury, Total		X	
Nickel, Total		X	
Temperature		X	
Nitrogen, Total		X	
Oil and grease, Total		X	
Polynuclear aromatic hydrocarbons (PAHs)			X
Total suspended solids		X	
Zinc, Total		X	

Acute and chronic toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 001-G for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 001-H for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-A for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Chromium, Total		X	
Copper, Total		X	
Fecal coliform		X	
Lead, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-B for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Fecal coliform		X	
Copper, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-C for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Ammonia (as Nitrogen)		X	
Oxidants, Total Residual		X	
Chromium, Total		X	
Copper, Total		X	
Fecal coliform		X	
Lead, Total		X	
Mercury, Total		X	
Nickel, Total		X	
Temperature		X	
Nitrogen, Total		X	
Oil and grease, Total		X	
Polynuclear aromatic hydrocarbons (PAHs)			X
Total suspended solids		X	
Zinc, Total		X	

Acute and chronic toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-D for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform			
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-E for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-F for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 002-G for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 003-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Nickel, Total		X	
Total Kjeldahl nitrogen		X	
Oil and grease, Total		X	
Temperature		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

DSNs 003-2, 003-3, 003-4, 003-5, 003-6, 003-7, 003-8, 003-9, 003-10, 003-11, 003-12 and 003-13 will not be monitored. These discharges are comprised of intake water that has not come into contact with processes or non-contact cooling pipes. This water is characteristically similar in quality to the intake water and not expected to contain pollutants of concern.

The following pollutants are included for monitoring at DSN 004-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Oxidants, Total Residual		X	
Copper, Total		X	
Nickel, Total		X	
Total Kjeldahl nitrogen		X	
Oil and grease, Total		X	
Temperature		X	
Total suspended solids		X	
Zinc, Total		X	

Acute and chronic toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

DSNs 004-2, 004-3, 004-4, 004-5, 004-6, 004-7, 004-8, 004-9 and 004-10 will not be monitored. These discharges are comprised of intake water that has not come into contact with processes or non-contact cooling pipes. This water is characteristically similar in quality to the intake water and not expected to contain pollutants of concern.

The following pollutants are included for monitoring at DSN 007-A for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Copper, Total		X	
Oil and grease, Total		X	
Oxidants, Total Residual		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 007-B for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Copper, Total		X	
Oil and grease, Total		X	
Oxidants, Total Residual		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSN 101-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Nickel, Total		X	
Total Kjeldahl nitrogen		X	
Oil and grease, Total		X	
Polynuclear aromatic hydrocarbons (PAHs)			X
Temperature		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

DSNs 101-2, 101-3, 101-4, 101-5 101-6, 101-7, 101-8 and 101-9 will not be monitored. These discharges are comprised of intake water that has not been run through the non-contact cooling pipes and are therefore very similar in quality to the intake water and are not expected to contain pollutants of concern.

The following pollutants are included for monitoring at DSN 102-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Nickel, Total		X	
Total Kjeldahl nitrogen		X	
Oil and grease, Total		X	
Temperature		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

DSNs 102-2, 102-3, 102-4, 102-5 102-6, 102-7, 102-8 and 102-9 will not be monitored. These discharges are comprised of intake water that has not come into contact with processes or non-contact cooling pipes. This water is characteristically similar in quality to the intake water and not expected to contain pollutants of concern.

DSNs 103-1, 103-2, 103-3, 103-4 and 103-5 will not be monitored. These discharges are comprised of intake water that has not come into contact with processes or non-contact cooling pipes. This water is characteristically similar in quality to the intake water and not expected to contain pollutants of concern.

The following pollutants are included for monitoring at DSN 104-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Nickel, Total		X	
Oil and grease, Total		X	
Temperature		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

DSNs 104-2, 104-3, 104-4, 104-5 104-6, 104-7, 104-8 and 104-9 will not be monitored. These discharges are comprised of intake water that has not come into contact with processes or non-contact cooling pipes. This water is characteristically similar in quality to the intake water and not expected to contain pollutants of concern.

The following pollutants are included for monitoring at DSNs 105-1, 105-2, 105-3 and 105-4, for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Nickel, Total		X	

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Oil and grease, Total		X	
Temperature		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

The following pollutants are included for monitoring at DSNs 106-1 and 106-2 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total		X	
Oxidants, Total Residual		X	
Copper, Total		X	
Fecal coliform		X	
Nickel, Total		X	
Oil and grease, Total		X	
Total suspended solids		X	
Zinc, Total		X	

Acute toxicity monitoring requirements were also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was also included in the permit consistent with Section 22a-426-9(a)(1).

3.3 ZONE OF INFLUENCE (ZOI)

The ZOI for all the discharges at EB is 21,660,000 gph. This ZOI is carried forward from the previous allocation (see Attachment 1).

In January of 2016, EB submitted a report "Dye and Thermal Dilution Studies" that presented the result of the dye and thermal studies conducted in October 2014 through October 2015. It was determined that immediate mixing of DSN 001-E and DSN 002-C discharges impact 7,904,856 ft^3 of the Thames River.

DSNs 001-E and 002-C
Based on the dye study, ZOI for DSN 001-E and 002-C = 7,904,856 ft^3 X 7.481 = 59,136,227 gpd = 2,464,009 gph. The ZOIs for DSN 001-E and 002-C are deducted from the total ZOI allocated to all EB's discharges.

DSN 001-E permitted average monthly flow (AML) = 1,600,000 gpd ÷ 24 hours = 66,667 gph

DSN 002-C permitted average monthly flow (AML) = 1,833,600 gpd ÷ 24 hours = 76,400 gph

ZOI for DSN 001-E = $\frac{66{,}667\ gph}{(66{,}667 gph + 76{,}400\ gph)}$ X 2,464,009 gph = 1,148,190 gph

ZOI for DSN 002-C = 2,464,009 gph - 1,148,190 gph = 1,315,819 gph

Instream Waste Concentration (IWC) = $\frac{AML}{(AML+ZOI)}$ X 100%

IWC = $\frac{66{,}667\ gph}{(66{,}667\ gph + 1{,}148{,}190\ gph)}$ X 100% = $\frac{76{,}400\ gph}{(76{,}400\ gph + 1{,}315{,}819\ gph)}$ X 100% = 5.5%

<u>DSNs 003-1, 004-1, 101-1, 102-1 and 104-1</u>
It was also determined from the above referenced dye study that there is 48:1 dilution for DSN 003-1 and for DSN 004-1. This dilution is translated to a ZOI as follows:

DSN 004 average flow = 4,920,000 gpd ÷ 24 hours = 205,000 gph

IWC = = $\frac{1}{48}$ X 100% = 2.1% = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{205{,}000\ gph}{(205{,}000\ gph + ZOI)}$, ZOI = 9,556,904 gph

At the time the dye and thermal studies were conducted, DSN 101-1 and DSN 102-1 were not proposed discharges. DSN 101-1 and DSN 102-1 are similar discharges to DSN 003-1 and DSN 004-1, and since the available dilution is 48:1, the above calculated ZOI was distributed amongst DSNs 003-1, 004-1, 101-1 and 102-1.

DSN 104-1 is a similar wastewater with the same volume as DSN 004-1 but at a different outfall. DSN 104-1 and DSN 004-1 discharges do not occur at the same time. Therefore, DSNs 004-1 and 104-1 share or are allocated the same ZOI.

<u>ZOI distribution</u>

DSN 003-1 average flow = 2,310,000 gpd = 96,250 gph

DSN 004-1/DSN 104-1 average flow = 4,920,000 gpd = 205,000 gph

Proposed DSN 101-1 average flow = 3,620,000 gpd = 150,833 gph

Proposed DSN 102-1 average flow = 5,900,000 gpd = 245,833 gph

ZOI for DSN 003-1 = $\frac{96{,}250}{(96{,}250+205{,}000+150{,}833+245{,}833)}$ X 9,556,904 gph = 1,317,998 gph

ZOI for DSN 004-1 = $\frac{205{,}000}{(96{,}250+205{,}000+150{,}833+245{,}833)}$ X 9,556,904 gph = 2,807,165 gph

ZOI for DSN 101-1 = $\frac{150{,}833}{(96{,}250+205{,}000+150{,}833+245{,}833)}$ X 9,556,904 gph = 2,065,430 gph

ZOI for DSN 102-1 = $\frac{245,833}{(96,250+205,000+150,833+245,833)}$ X 9,556,904 gph = 3,366,311 gph

IWC = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{245,833}{(245,833+3,366,311)}$ X 100%, IWC = 6.8%

DSNs 007-A and 007-B

The previously assigned IWC of 1% for DSN 007-A and DSN 007-B were also carried forward.

DSN 007-A, a continuous flow, was previously permitted for 6,000 gpd at IWC of 1%.

Previous DSN 007-A maximum flow = 6,000 gpd ÷ 24 hours = 250 gph

DSN 007-B average flow = 3,600 gpd ÷ 24 hours = 150 gph

Previous flow = 6000 + 3600 = 9600 ÷ 24 = 400 gph

ZOI = $\frac{MDL(1-IWC)}{IWC}$ = $\frac{400\ (1-.01)}{.01}$ = 39,600 gph

New flow for DSN 007-A = 25,920 gpd ÷ 24 = 1,080 gph

Based on the new flow, ZOI for DSN 007-A = $\frac{1,080}{(1,080+150)}$ X 39,600 gph = 34,771 gph

ZOI for DSN 007-B = $\frac{150}{(1,080+150)}$ X 39,600 gph = 4,829 gph

IWC for DSN 007-A and 007-B = $\frac{1,080}{(1,080+34,771)}$ X 100% = $\frac{150}{(150+4,829)}$ X 100% = 3%

DSNs 001-A, 001-B, 001-C, 001-D, 001-G, 001-H, 002-A, 002-B, 002-D, 002-E, 002-F, 002-G

For any dewatering associated with graving docks, there will be no stripping pump discharge from the graving dock being dewatered.

ZOI for stripping pump associated with 001-E = 1,148,190 gph
ZOI for stripping pump associated with 002-C = 1,315,819 gph

ZOI for DSNs 001-A, 001-B, 001-C, 001-D, 001-G, 001-H: These discharges do not occur at the same time and do not occur when there is a discharge at DSN 001-E.

Total ZOI – ZOI for NCCW – ZOI for stripping pump associated with GD being dewatered – ZOI for steam condensate – ZOI for freeze protection = 21,660,000 gph – 9,556,904 gph – 1,315,819 gph– 34,771 gph – 4,829 gph = 10,747,677 gph

ZOI for DSN 002-A, 002-B, 002-D, 002-E, 002-F, 002-G: These discharges do not occur at the same time and do not occur when there is a discharge at DSN 002-C.

Total ZOI – ZOI for NCCW – ZOI for stripping pump associated with GD being dewatered – ZOI for steam condensate – ZOI for freeze protection = 21,660,000 gph – 9,556,904 gph – 1,148,190 gph – 34,771 gph – 4,829 gph = 10,915,306 gph

For acute criteria:
DSN 001-A = 11,413,703 for 6 hours = 1,902,284 gph,
IWC = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{1,902,284}{(1,902,284 +10,747,677)}$ X 100%, IWC = 15%
DSN 001-C = 17,948,947 for 10 hours = 1,794,895 gph
IWC = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{1,794,895}{(1,794,895 +10,747,677)}$ X 100%, IWC = 14.3%

DSN 002-B = 27,731,574 for 24 hours = 1,155,482 gph,
IWC = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{1,155,482}{(1,155,482 +10,915,306)}$ X 100%, IWC = 9.6%

For chronic criteria:
DSN 001-A = 11,413,703 for 24 hours = 475,571 gph,
IWC = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{475,571}{(475,571 +10,747,677)}$ X 100%, IWC = 4.2%

DSN 001-C = 17,948,947 for 24 hours = 747,873 gph
IWC = $\frac{AML}{(AML+ZOI)}$ X 100% = $\frac{747,873}{(747,873 +10,747,677)}$ X 100%, IWC = 6.5%

DSN 002-B = 27,731,574 for 24 hours = 1,155,482 gph, IWC is same as that of acute criteria.

3.4 WATERBODY AMBIENT CONDITIONS

A review of Thames River chemistry analysis of samples collected on 7/24/2023, 7/26/2023, 7/28/2023, 10/16/2023, 10/18/2023 and 10/20/2023, showed that copper, chlorine, nickel, and zinc were below detection levels. Lead was reported as non-detect except for the 10/16/2023 sample, that had a dissolved lead concentration of 5.2 µg/l. Therefore, for the purpose of the reasonable potential analysis, the background concentrations for all pollutants are assumed zero, except for lead, which is 0.86 µg/l based on the average of available ambient data.

3.5 RESONABLE POTENTIAL ANALYSIS AND WATER QUALITY BASED EFFLUENTS LIMITS CALCULATION

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to Technology-Based Effluent Limits (TBELs) that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." *See* 40 CFR § 122.44(d)(1)(i).

To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any water quality standard (WQS), EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain Water Quality Based Effluent Limits (WQBELs) or require additional monitoring if there is insufficient data to develop a WQBEL, for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

For DSNs 001-A, 002-A, 003-1, 007-A, copper and total residual oxidant (as chlorine) have been determined to have reasonable potential to contribute or cause excursion above the water quality criteria (see Section 3.8 for limits).

For DSNs 001-B, 001-D, 002-C, copper and total residual oxidant (as chlorine) and zinc have been determined to have reasonable potential to contribute or cause excursion above the water quality criteria (see Section 3.8 for limits).

For DSN 001-C, copper has been determined to have reasonable potential to contribute or cause excursion above the water quality criteria (see Section 3.8 for limits).

For DSNs 001-E, copper, mercury, lead, nickel and total residual oxidant (as chlorine) have been determined to have reasonable potential to contribute or cause excursion above the water quality criteria (see Section 3.8 for limits).

For DSN 004-1, zinc has been determined to have reasonable potential to contribute or cause excursion above the water quality criteria (see Section 3.8 for limits).

For DSN 007-B, copper and lead have been determined to have reasonable potential to contribute or cause excursion above the water quality criteria (see Section 3.8 for limits).

TABLE 3.5.1: CONNECTICUT WATER QUALITY CRITERIA (SALTWATER)

	Aquatic Life (Acute (µg/l))	*Aquatic Life (Chronic (µg/l))*	*Human Health (µg/l)*
Chromium	*1100*	*50*	*2019*
Copper	*4.8*	*3.1*	---
Chlorine	*13*	*7.5*	---
Lead	*210*	*8.1*	---
Mercury	*1.8*	*0.94*	*0.051*
Nickel	*74*	*8.2*	*4,600*
Zinc	*90*	*81*	*26,000*

TABLE 3.5.2: REASONABLE POTENTIAL EVALUATION (RPA) – DSNs 001-A

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow $Q_{e,acute}$ = 11,413,703 ÷ 6 = 1,902,284 gph, Discharge flow $Q_{e,chronic}$ = 11,413,703 ÷ 24 = 475,571 gph, Upstream flow = 10,747,677 gph, Downstream flow$_{acute}$ = 12,649,961 gph, Downstream flow$_{chronic}$ = 11,223,248 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Copper	*149.3 X 3.2 = 477.76*	*31.92*	*73.16*	*Yes*
Chlorine	*90 X 3.2 = 288*	*86.45*	*177.0*	*Yes*
Zinc	*164.5 X 3.2 = 526.4*	*598.49*	*1911.56*	*No*

PERMIT LIMITS CALCULATION - DSNs 001-A

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	LTA_{acute} = WLA_{acute} X 99th percentile multiplier in Attachment 3 (µg/l)	*$LTA_{chronic}$ = $WLA_{chronic}$ X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA x 95th percentile multiplier in Attachment 4 (µg/l)*	*MDL = LTA x 99th percentile multiplier in Attachment 4 (µg/l)*
Copper	*See Tables 3.5.1.1 & 3.5.1.2 and Section 3.5.1 for copper limits calculation.*				
Chlorine	*86.45 X 0.321 = 27.75*	*177.0 X 0.527 = 93.28*	*27.75*	*27.75 X 1.55 = 43.01 ≈ 43*	*27.75 X 3.11 = 86.3 ≈ 86*

Default CV = 0.6 because there are only 9 sampling data.

TABLE 3.5.3: REASONABLE POTENTIAL EVALUATION (RPA) – DSNs 001-B

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow $Q_{e,acute}$ = 11,413,703 ÷ 6 = 1,902,284 gph, Discharge flow $Q_{e,chronic}$ = 11,413,703 ÷ 24 = 475,571 gph, Upstream flow = 10,747,677 gph, Downstream flow$_{acute}$ = 12,649,961 gph, Downstream flow$_{chronic}$ = 11,223,248 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Copper	*606 X 3.3 = 1999.8*	*31.92*	*73.16*	*Yes*
Chlorine	*40 X 3.3 = 132*	*86.45*	*177.0*	*Yes*
Chromium	*43.1 X 3.3 = 142.23*	*7314.87*	*1179.98*	*No*
Lead	*41.4 X 3.3 = 136.62*	*1391.62*	*171.72*	*No*
Zinc	*1311 X 3.3 = 4326.3*	*598.49*	*1911.56*	*Yes*

PERMIT LIMITS CALCULATION - DSNs 001-B

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	LTA_{acute} = WLA_{acute} X 99th percentile multiplier in Attachment 3 (µg/l)	*$LTA_{chronic}$ = $WLA_{chronic}$ X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA x 95th percentile multiplier in Attachment 4 (µg/l)*	*MDL = LTA x 99th percentile multiplier in Attachment 4 (µg/l)*
Copper	*See Tables 3.5.1.1 & 3.5.1.2 and Section 3.5.1 for copper limits calculation.*				
Chlorine	*86.45 X 0.321 = 27.75*	*177.0 X 0.527 = 93.28*	*27.75*	*27.75 X 1.55 = 43.01 ≈ 43*	*27.75 X 3.11 = 86.3 ≈ 86*
Zinc	*598.49 X 0.321 = 192.12*	*1911.56 X 0.527 =1007.39*	*192.12*	*192.12 X 1.55 ≈ 298*	*192.12 X 3.11 ≈ 598*

Default CV = 0.6 because there are only 8 sampling data.

TABLE 3.5.4: REASONABLE POTENTIAL EVALUATION (RPA) – DSNs 001-C

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow $Q_{e,acute}$ = 17,948,947 ÷ 10 = 1,794,895 gph, Discharge flow $Q_{e,chronic}$ = 17,948,947 ÷ 24 = 747,873 gph, Upstream flow = 10,747,677 gph, Downstream flow$_{acute}$ = 12,542,572 gph, Downstream flow$_{chronic}$ = 11,495,550 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Copper	*69.6 X 3.8 = 264.48*	*33.5*	*47.65*	*Yes*
Chlorine	*0 X 3.8 = 0*	*90.8*	*115.28*	*No*
Zinc	*115.9 X 3.8 = 440.42*	*628.9*	*1245.05*	*No*

PERMIT LIMITS CALCULATION - DSNs 001-C

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	LTA_{acute} = WLA_{acute} X 99th percentile multiplier in Attachment 3 (µg/l)	*$LTA_{chronic}$ = $WLA_{chronic}$ X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA x 95th percentile multiplier in Attachment 4 (µg/l)*	*MDL = LTA x 99th percentile multiplier in Attachment 4 (µg/l)*
Copper	*See Tables 3.5.1.1 & 3.5.1.2 and Section 3.5.1 for copper limits calculation.*				

Default CV = 0.6 because there are only 6 sampling data.

TABLE 3.5.5: REASONABLE POTENTIAL EVALUATION (RPA) – DSNs 001-D

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow $Q_{e,acute}$ = 17,948,947 ÷ 10 = 1,794,895 gph, Discharge flow $Q_{e,chronic}$ = 17,948,947 ÷ 24 = 747,873 gph, Upstream flow = 10,747,677 gph, Downstream flow$_{acute}$ = 12,542,572 gph, Downstream flow$_{chronic}$ = 11,495,550 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Copper	*22.7 X 5.6 = 127.12*	*33.5*	*47.65*	*Yes*
Chlorine	*30 X 5.6 = 168*	*90.8*	*115.28*	*Yes*
Chromium	*0 X 5.6 = 0*	*7686.71*	*768.55*	*No*
Lead	*0 X 5.6 = 0*	*1462.31*	*112.15*	*No*
Zinc	*138 X 5.6 = 772.8*	*628.9*	*1245.05*	*Yes*

PERMIT LIMITS CALCULATION - DSN 001-D

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	LTA_{acute} = WLA_{acute} X 99th percentile multiplier in Attachment 3 (µg/l)	*$LTA_{chronic}$ = $WLA_{chronic}$ X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA x 95th percentile multiplier in Attachment 4 (µg/l)*	*MDL = LTA x 99th percentile multiplier in Attachment 4 (µg/l)*
Copper	*See Tables 3.5.1.1 & 3.5.1.2 and Section 3.5.1 for copper limits calculation.*				
Chlorine	*90.8 X 0.321 = 29.15*	*115.28 X 0.527 = 60.75*	*29.15*	*29.15 X 1.55 = 45.2 ≈ 45*	*29.15 X 3.11 = 90.6 ≈ 91*
Zinc	*628.9 X 0.321 = 201.88*	*1245.05 X 0.527 = 656.14*	*201.88*	*201.88 X 1.55 ≈ 313*	*201.88 X 3.11 ≈ 628*

Default CV = 0.6 because there are only 3 sampling data.

TABLE 3.5.6: *Reasonable potential (RP) statistical multiplier determination – DSNs 001-E*							
Pollutants	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**	*Pollutants*	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**
Chromium	*107*	*2*	*6.8*	*Mercury*	*107*	*1.9*	*6.5*
Copper	*107*	*2.1*	*6.8*	*Nickel*	*107*	*1.7*	*5.8*
Chlorine	*107*	*1.5*	*5.2*	*Zinc*	*107*	*0.7*	*2.6*
Lead	*107*	*2*	*6.8*				

**Where there are more than 20 samples, the number of samples is assumed to be 20. Where CV is higher than 2.0, the CV is assumed to be 2.0 because there is minimal variability at these levels.*

TABLE 3.5.7: REASONABLE POTENTIAL EVALUATION (RPA) – DSN 001-E

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 1,600,000 ÷ 24 = 66,667 gph, Upstream flow (based on IWC = 5.5%) = 1,148,190 gph, Downstream flow = 1,214,857 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{health} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Chlorine	*140 X 5.2 = 728*	*236.9*	*136.67*	*---*	*Yes*
Copper	*745.8 X 6.8 = 5071.44*	*87.47*	*56.49*	*---*	*Yes*
Lead	*34.5 X 6.8 = 234.6*	*3811.97*	*132.79*	*---*	*Yes*
Mercury	*0.7 X 6.5 = 4.55*	*1.8*	*0.94*	*0.051*	*Yes*
Chromium	*38.4 X 6.8 = 261.12*	*20045.04*	*911.14*	*Health criteria > than the acute and chronic and will not be the governing long-term average*	*No*
Nickel	*30.8 X 5.8 = 178.64*	*1348.48*	*149.43*		*Yes*
Zinc	*308.5 X 2.6 = 802.1*	*1640.05*	*1476.04*		*No*

PERMIT LIMITS CALCULATION – DSN 001-E

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	$LTA_{acute} = WLA_{acute}$ *X 99th percentile multiplier in Attachment 3 (µg/l)*	$LTA_{chronic} = WLA_{chron}$ *X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA X 95th percentile multiplier in the Attachment 4 (µg/l)*	*MDL = LTA X 99th percentile multiplier in the Attachment 4 (µg/l)*
Chlorine	*236.9 X 0.144 = 34.11*	*136.67 X 0.264 = 36.08*	*34.11*	*34.11 X 2.4 = 81.9*	*34.11 X 6.93 = 236.4 ≈ 237*
Copper	*87.47 X 0.117 = 10.23*	*56.49 X 0.204 = 11.52*	*10.23*	*10.23 X 2.78 = 28.44*	*10.23 X 8.55 = 87.47*
Lead	*3811.97 X 0.117 = 446*	*132.79 X 0.204 = 27.09*	*27.09*	*27.09 X 2.78 = 75.31*	*27.09 X 8.55 = 231.62*

DSN 001-E - AML (Mass in kg/d) for copper: 28.44 X 10^{-9} kg/l X 1.6 X 10^6 X 3.785 liter/d = 172 X 10^{-3} kg/d = 0.172 kg/d
DSN 001-E - MDL (Mass in kg/d) for copper: 87.47 X 10^{-9} kg/l X 1.6 X 10^6 X 3.785 liter/d = 529.7 X 10^{-3} kg/d = 0.530 kg/d
DSN 001-E - AML (Mass in kg/d) for lead: 75.31 X 10^{-9} kg/l X 1.6 X 10^6 X 3.785 liter/d = 456 X 10^{-3} kg/d = 0.456 kg/d
DSN 001-E - MDL (Mass in kg/d) for lead: 231.62 X 10^{-9} kg/l X 1.6 X 10^6 X 3.785 liter/d = 1403 X 10^{-3} kg/d = 1.403 kg/d

Mercury			*0.051*	*0.051*	*0.051 X $\frac{8.25}{2.71}$ = 0.155*
Nickel	*1348.48 X 0.131 = 176.65*	*149.43 X 0.236 = 35.26*	*35.26*	*35.26 X 2.56 = 90.26*	*35.26 X 7.63 = 269.03*

DSN 001-E - AML (Mass in kg/d) for Nickel: 90.26 X 10^{-9} kg/l X 1.6 X 10^6 X 3.785 liter/d = 546.6 X 10^{-3} kg/d = 0.547 kg/d
DSN 001-E - MDL (Mass in kg/d) for Nickel: 269.03 X 10^{-9} kg/l X 1.6 X 10^6 X 3.785 liter/d = 1629 X 10^{-3} kg/d = 1.629 kg/d

1 µg/l = 10^{-9} kg/l, 1 gallon = 3.785 liters

TABLE 3.5.8: REASONABLE POTENTIAL EVALUATION (RPA) – DSNs 002-A ***This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.***					
WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 27,731,574 ÷ 24 = 1,155,482 gph, Upstream flow = 10,915,306 gph, Downstream flow = 12,070,788 gph. Refer to the ZOI calculation above.					
	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*		*Is there reasonable potential to exceed WQC?*
Copper	*17.8 X 3.3 = 58.74*	*50.14*	*32.38*		*Yes*
Chlorine	*30 X 3.3 = 99*	*135.81*	*78.35*		*Yes*
Chromium	*5 X 3.3 = 16.5*	*11491.19*	*522.33*		*No*
Lead	*8.7 X 3.3 = 28.71*	*2185.65*	*76.49*		*No*
Zinc	*194.2 X 3.3 = 640.86*	*940.19*	*846.17*		*No*
PERMIT LIMITS CALCULATION - DSN 002-A					
LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit					
	LTA_{acute} = WLA_{acute} X 99^{th} percentile multiplier in Attachment 3 (µg/l)	*$LTA_{chronic}$ = $WLA_{chronic}$ X 99^{th} percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA x 95^{th} percentile multiplier in Attachment 4 (µg/l)*	*MDL = LTA x 99^{th} percentile multiplier in Attachment 4 (µg/l)*
Copper	*See Tables 3.5.1.1 & 3.5.1.2 and Section 3.5.1 for copper limits calculation.*				
Chlorine	*135.81 X 0.321 = 43.6*	*78.35 X 0.527 = 41.29*	*41.29*	*41.29 X 1.55 = 64*	*41.29 X 3.11 = 128.4 ≈ 128*
Default CV = 0.6 because there are only 8 sampling data set.					

TABLE 3.5.9: REASONABLE POTENTIAL EVALUATION (RPA) – DSNs 002-B ***This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.***				
WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 27,731,574 ÷ 24 = 1,155,482 gph, Upstream flow = 10,915,306 gph, Downstream flow = 12,070,788 gph. Refer to the ZOI calculation above				
	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Copper	*0 X 13.2 = 0*	*50.14*	*32.38*	*No*
Chlorine	*O X 13.2 = 0*	*135.81*	*78.35*	*No*
Zinc	*7.8 X 13.2 = 102.96*	*940.19*	*846.17*	*No*
Default CV = 0.6 because there are only 1 sampling data set.				

TABLE 3.5.10: *Reasonable potential (RP) statistical multiplier determination – DSN 002-C*							
Pollutants	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**	*Pollutants*	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**
Chromium	*71*	*2*	*6.8*	*Nickel*	*71*	*1.5*	*5.2*
Copper	*71*	*0.9*	*3.2*	*Zinc*	*71*	*1.7*	*5.8*
Chlorine	*71*	*1.5*	*5.2*				
Lead	*71*	*1.4*	*4.8*				

**Where there are more than 20 samples, the number of samples is assumed to be 20. Where CV is higher than 2.0, the CV is assumed to be 2.0 because there is minimal variability at these levels.*

TABLE 3.5.11: REASONABLE POTENTIAL EVALUATION (RPA) –DSN 002-C

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 1,833,600 ÷ 24 = 76,400 gph, Upstream flow (based on IWC = 5.5%) = 1,315,819 gph, Downstream flow = 1,392,219 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{health} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Chlorine	*140 X 5.2 = 728*	*236.9*	*136.67*	---	*Yes*
Copper	*44.5 X 3.2 = 142.4*	*87.47*	*56.49*	---	*Yes*
Lead	*8.7 X 4.8 = 41.76*	*3811.97*	*132.79*	---	*No*
Mercury		*1.8*	*0.94*	*0.051*	
Chromium	*28.4 X 6.8 =193.12*	*20045.04*	*911.14*	*Health criteria > than the acute and chronic and will not be the governing LTA*	*No*
Nickel	*8.8 X 5.2 = 45.76*	*1348.48*	*149.43*		*No*
Zinc	*777.1 X 5.8 = 4507.18*	*1640.05*	*1476.04*		*Yes*

PERMIT LIMITS CALCULATION – DSN 002-C

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	$LTA_{acute} = WLA_{acute}$ X 99th percentile multiplier in Attachment 3 *(µg/l)*	$LTA_{chronic} = WLA_{chron}$ X 99th percentile multiplier in Attachment 3(µg/l)	*Governing LTA*	$AML = LTA$ X 95th percentile multiplier in the Attachment 4 (µg/l)	$MDL = LTA$ X 99th percentile multiplier in the Attachment 4 *(µg/l)*
Chlorine	*236.9 X 0.144 = 34.11*	*136.67 X 0.264 = 36.08*	*34.11*	*34.11 X 2.4 ≈ 82*	*34.11 X 6.93 ≈ 236.38*
Copper	*87.47 X 0.224 = 19.59*	*56.49 X 0.404 = 22.82*	*19.59*	*19.59 X 1.85 = 36.24*	*19.59 X 4.46 = 87.37*
DSN 002-C - AML (Mass in kg/d) for copper: 36.24 X 10^{-9} kg/l X 1.8336 X 10^6 X 3.785 liter/d = 251 X 10^{-3} kg/d = 0.251 kg/d					
DSN 002-C - MDL (Mass in kg/d) for copper: 87.47 X 10^{-9} kg/l X 1.8336 X 10^6 X 3.785 liter/d = 606.36 X 10^{-3} kg/d = 0.606 kg/d					
Zinc	*1640.05 X 0.131 = 214.85*	*1476.04 X 0.236 = 348.35*	*214.85*	*214.85 X 2.56 = 550*	*214.85 X 7.63 = 1639*
DSN 002-C - AML (Mass in kg/d) for zinc: 550 X 10^{-9} kg/l X 1.8336 X 10^6 X 3.785 liter/d = 3817 X 10^{-3} kg/d = 3.817 kg/d					
DSN 002-C - MDL (Mass in kg/d) for zinc: 1639 X 10^{-9} kg/l X 1.8336 X 10^6 X 3.785 liter/d = 11375 X 10^{-3} kg/d = 11.37 kg/d					

1 µg/l = 10^{-9} kg/l, 1 gallon = 3.785 liters

TABLE 3.5.12: *Reasonable potential (RP) statistical multiplier determination – DSN 003-1*

Pollutants	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**	*Pollutants*	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**
Copper	*36*	*1.4*	*4.8*	*Lead*	*36*	*2.0*	*6.8*
Chlorine	*36*	*2.0*	*6.8*	*Zinc*	*36*	*1.0*	*3.5*

**Where there are more than 20 samples, the number of samples is assumed to be 20. Where CV is higher than 2.0, the CV is assumed to be 2.0 because there is minimal variability at these levels.*

TABLE 3.5.13: REASONABLE POTENTIAL EVALUATION (RPA) –DSN 003-1

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 2,310,000 ÷ 24 = 96,250 gph, Upstream flow = 1,317,998 gph, Downstream flow = 1,414,248 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{health} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Chlorine	*30 X 6.8 = 204*	*191.01*	*110.20*	---	*Yes*
Copper	*10.3 X 4.8 = 49.44*	*70.53*	*45.55*	---	*Yes*
Lead	*5 X 6.8 = 34*	*3073.86*	*107.24*	---	*No*
Zinc	*30.6 X 3.5 = 107.1*	*1322.41*	*1190.17*	*Health criteria > than the acute and chronic and will not be the governing LTA*	*No*

PERMIT LIMITS CALCULATION – DSN 003

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	$LTA_{acute} = WLA_{acute}$ X 99th percentile multiplier in Attachment 3 *(µg/l)*	$LTA_{chronic} = WLA_{chron}$ X 99th percentile multiplier in Attachment 3(µg/l)	*Governing LTA*	$AML = LTA$ X 95th percentile multiplier in the Attachment 4 (µg/l)	$MDL = LTA$ X 99th percentile multiplier in the Attachment 4 *(µg/l)*
Chlorine	*191.01 X 0.117 = 22.35*	*110.20 X 0.204 = 22.48*	*22.35*	*22.35 X 2.78 ≈ 62*	*22.35 X 8.55 ≈ 191*
Copper	*70.53 X 0.153 = 10.79*	*45.55 X 0.281 = 12.79*	*10.79*	*10.79 X 2.31 = 24.9 ≈ 25*	*10.79 X 6.56 = 70.78 ≈ 71*

TABLE 3.5.14: REASONABLE POTENTIAL EVALUATION (RPA) –DSN 004-1

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 4,920,000 ÷ 24 = 205,000 gph, Upstream flow = 2,807,165 gph, Downstream flow = 3,012,165 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{health} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Chlorine	*0 X 7.4 = 0*	*191.01*	*110.20*	---	*No*
Copper	*39.7 X 7.4 = 293.78*	*70.53*	*45.55*	---	*No*
Lead	*0 X 7.4 = 0*	*3073.86*	*107.24*	---	*No*
Zinc	*203.3 X 7.4 = 1504.42*	*1322.41*	*1190.17*	*Health criteria > than the acute and chronic and will not be the governing LTA*	*Yes*

PERMIT LIMITS CALCULATION – DSN 004-1

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	$LTA_{acute} = WLA_{acute}$ X 99th percentile multiplier in Attachment 3 *(µg/l)*	$LTA_{chronic} = WLA_{chron}$ X 99th percentile multiplier in Attachment 3(µg/l)	*Governing LTA*	$AML = LTA$ X 95th percentile multiplier in the Attachment 4 (µg/l)	$MDL = LTA$ X 99th percentile multiplier in the Attachment 4 *(µg/l)*
Zinc	*1322.41 X 0.321 = 424.49*	*1190.17 X 0.527 = 627.22*	*424.49*	*424.49 X 1.55 ≈ 658*	*424.49 X 3.11 ≈ 1320*

TABLE 3.5.15: *Reasonable potential (RP) statistical multiplier determination – DSN 007-A*							
Pollutants	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**	*Pollutants*	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**
Copper	*39*	*0.8*	*2.9*	*Lead*	*39*	*1.8*	*6.1*
Chlorine	*39*	*0.1*	*1.2*	*Zinc*	*39*	*1.3*	*4.5*

**Where there are more than 20 samples, the number of samples is assumed to be 20. Where CV is higher than 2.0, the CV is assumed to be 2.0 because there is minimal variability at these levels.*

TABLE 3.5.16: REASONABLE POTENTIAL EVALUATION (RPA) – DSN 007-A					
This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.					
WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 25,920 ÷ 24 = 1,080 gph, Upstream flow = 34,771 gph, Downstream flow = 35,851 gph. Refer to the ZOI calculation above.					
	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{health} = \frac{(QC)_d - (QC)}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Chlorine	*1900 X 1.2 = 2280*	*431.54*	*248.97*	*---*	*Yes*
Copper	*49 X 2.9 = 142.1*	*159.34*	*102.91*	*---*	*Yes*
Lead	*5 X 6.1 = 30.5*	*6943.34*	*241.19*	*---*	*No*
Zinc	*20 X 4.5 = 90*	*2987.58*	*2688.83*		*No*
PERMIT LIMITS CALCULATION – DSN 007-A					
LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit					
	$LTA_{acute} = WLA_{acute}$ *X 99th percentile multiplier in Attachment 3 (µg/l)*	$LTA_{chronic} = WLA_{chron}$ *X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA X 95th percentile multiplier in the Attachment 4 (µg/l)*	*MDL = LTA X 99th percentile multiplier in the Attachment 4 (µg/l)*
Chlorine	*431.54 X 0.797 = 343.94*	*248.97 X 0.891 = 221.83*	*221.83*	*221.83 X 1.08 = 239.6*	*221.83 X 1.25 = 277.3*
Copper	*159.34 X 0.249 = 39.68*	*102.91 X 0.440 = 45.28*	*39.68*	*39.68 X 1.75 = 69.4*	*39.68 X 4.01 = 159.1*

TABLE 3.5.17: *Reasonable potential (RP) statistical multiplier determination – DSN 007-B*							
Pollutants	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**	*Pollutants*	*No of samples*	*CV= Standard deviation/mean*	*RP statistical multiplier**
Copper	*42*	*1.0*	*3.5*	*Lead*	*42*	*1.8*	*6.1*
Chlorine	*42*	*2.0*	*4.2*	*Zinc*	*42*	*1.2*	*4.2*

**Where there are more than 20 samples, the number of samples is assumed to be 20. Where CV is higher than 2.0, the CV is assumed to be 2.0 because there is minimal variability at these levels.*

TABLE 3.5.18: REASONABLE POTENTIAL EVALUATION (RPA) – DSN 007-B

This analysis compares the projected maximum concentration (PMC) in the effluent with the applicable water quality criteria (WQC). When the PMC is lower than the waste load allocation (WLA), this indicates that there is no potential for the discharge to exceed the water quality criteria. When the PMC is higher than the WLA, this indicates that there is potential for the discharge to exceed the WQC and therefore limits are needed in the permit.

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Discharge flow Q_e = 3,600 ÷ 24 = 150 gph, Upstream flow = 4,829 gph, Downstream flow = 4,979 gph. Refer to the ZOI calculation above.

	Maximum projected conc. in effluent = Maximum measured conc. in effluent X statistical multiplier Attachment 2 (µg/l)	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	$WLA_{health} = \frac{(QC)_d - (QC)_u}{Q_e}$ *(µg/l)*	*Is there reasonable potential to exceed WQC?*
Chlorine	*40 X 4.2 = 168*	*431.54*	*248.97*	---	*No*
Copper	*81 X 3.5 = 283.5*	*159.34*	*102.91*	---	*Yes*
Lead	*201 X 6.1 = 1226.1*	*6943.34*	*241.19*	---	*Yes*
Zinc	*88 X 4.2 = 369.6*	*2987.58*	*2688.83*		*No*

PERMIT LIMITS CALCULATION – DSN 007-B

LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit

	$LTA_{acute} = WLA_{acute}$ *X 99th percentile multiplier in Attachment 3 (µg/l)*	$LTA_{chronic} = WLA_{chron}$ *X 99th percentile multiplier in Attachment 3 (µg/l)*	*Governing LTA*	*AML = LTA X 95th percentile multiplier in the Attachment 4 (µg/l)*	*MDL = LTA X 99th percentile multiplier in the Attachment 4 (µg/l)*
Lead	*6943.34 X 0.126 = 874.9*	*241.19 X 0.224 = 54.03*	*54.03*	*54.03 X 2.64 = 142.63*	*54.03 X 7.95 = 430*
Copper	*159.34 X 0.249 = 39.68*	*102.91 X 0.440 = 45.28*	*39.68*	*39.68 X 1.75 = 69.4*	*39.68 X 4.01 = 159.1*

3.5.1 NON-CONTINOUS DISCHARGES

40 CFR § 122.45(d) specifies that permit limits for continuous discharges be expressed as average monthly (AML) and maximum daily limits (MDL). The MDL is the highest allowable discharge measured during a calendar day or 24-hour period representing a calendar day. The AML is the highest allowable value for the average of daily discharges obtained over a calendar month.

DSN 001-A, 001-B, 001-C, 001-D, 001-G, 001-H, 002-A, 002-B, 002-D, 002-E, 002-F, 002-G are non-continuous batch discharges that occur infrequently and at large volumes, as described in Section 1.6 of this fact sheet. These operations present significant challenges for the management and treatment of effluent copper using traditional end-of-pipe treatment methods; therefore, site wide mass copper limits consistent with 40 CFR § 122.45(e) were developed. The development of the limits considered discharge frequency, total mass, maximum rate of discharge of pollutants, and prohibitions and limitations of copper by mass and concentration (See Tables 3.5.1.1 and 3.5.1.2).

Compliance with the permit terms and conditions will be achieved by EB through copper minimization strategies, management of operations, and coordination of discharges to comply with the site-wide copper limits calculated below. The site-wide copper limits are WQBELs developed by considering all discharges that may contribute to copper loading to the Thames River from EB and the allocated zone of influence. The continuous discharges (DSNs 001-E, 002-C and 003-1) will have copper limits at the individual outfalls, but compliance for the non-continuous discharges shall be determined by the site-wide copper limits. These site-wide limits are calculated using the assigned zone of influence and the total maximum flow that can be discharged on any day.

When there is a discharge from DSN 001-A, 001-B, 001-C, 001-D, 001-G, 001-H, 002-A, 002-B, 002-D, 002-E, 002-F, or 002-G, copper and flow sampling shall be conducted for that discharge and all other discharges (DSN 001-A, DSN 001-B, DSN 001-C, DSN 001-D, DSN 001-E, DSN 001-G, DSN 001-H, DSN 002-A, DSN 002-B, DSN 002-C, DSN 002-D, DSN 002-F, DSN 002-G, DSN 003-1, DSN 004-1, DSN 007-A, DSN 007-B, DSN 101-1, DSN 102-1, DSN 104-1, DSN 105-1, DSN 105-2, DSN 105-3, DSN 105-4, DSN 106-1 and DSN 106-2) occurring that day. The daily mass discharge of copper shall be calculated and reported to determine compliance with water quality-based site-wide mass copper limits.

In conjunction with the site-wide copper limit, the permit requires the Permittee to develop and implement a Copper Minimization Plan (Plan). The Plan requires the Permittee to identify and implement strategies to minimize existing sources of copper and investigate the replacement of copper-based paints used on submarine hulls with copper-free alternatives.

Based on information provided by the applicant, the primary source of copper in outfalls DSN 001-A, 001-B, 001-C, 001-D, 001-G, 001-H, 002-A, 002-B, 002-D, 002-E, 002-F, and 002-G stems from the anti-fouling paint applied to submarine hulls. These paints contain a copper oxide, which acts as a biocide to protect boat integrity. Exposure of water to this paint results in copper entering graving dock wastewater discharges. Copper-free alternatives are available for rigid hull and surface ships; however, the United States Navy's Naval Sea Systems Command (NAVSEA) has not authorized the use of copper-free paints on submarines.

The Copper Minimization Plan requires the Permittee to minimize their existing copper discharge by identifying process, operational, maintenance, and source reduction strategies to minimize copper discharges. In addition, the Plan requires the Permittee to develop a plan to identify and implement copper-free alternative(s) to the submarine hull paint. The implementation is contingent upon successful multi-year adhesion, lab, patch testing, and NAVSEA approval and therefore, may extend beyond the five-year permit term. The permit requires annual progress reports on the status of the Plan, paint alternative evaluations, and replacements.

Table 3.5.1.1: Total flows used for site-wide water quality-based copper mass limits

DSN	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW THAT CAN OCCUR IN A DAY (gph)
001-A	11,413,703	These discharges do not occur at the same time and do not occur when there is a discharge at DSN 001-E. The maximum of these discharges is incorporated in the site-wide copper limit calculation. 17,948,947 gpd for 6 hours For acute criteria = 2,991,491 gph For chronic criteria = 747,873 gph
001-B	11,413,703	
001-C	17,948,947	
001-D	17,948,947	
001-E	3,686,400	
001-G	2,608,846	
001-H	4,102,621	
002-A	27,731,574	These discharges do not occur at the same time and do not occur when there is a discharge at DSN 002-C. The maximum

Table 3.5.1.1: Total flows used for site-wide water quality-based copper mass limits		
DSN	**PROPOSED MAXIMUM DAILY FLOW (gpd)**	**PROPOSED MAXIMUM DAILY FLOW THAT CAN OCCUR IN A DAY (gph)**
002-B	27,731,574	of these discharges is incorporated in the site-wide copper limit calculation.
002-C	2,640,000	27,731,574 gpd for 6 hours For acute criteria = 4,621,929 gph For chronic criteria = 1,155,482 gph
002-D	8,200,000	
002-E	3,521,470	
002-F	134,000	
002-G	134,000	
003-1	2,880,000	2,880,000 gpd for 24 hours = 120,000 gph
003-2	288,000	Not expected to contribute to copper load
003-3	43,200	
003-4	50	
003-5	50	
003-6	50	
003-T	500	
003-8	500	
003-9	500	
003-10	90	
003-11	230,400	
003-12	230,400	
003-13	230,400	
004-1	5,760,000	5,760,000 gpd for 24 hours = 240,000 gph
004-2	6,200	Not expected to contribute to copper load.
004-3	2	
004-4	90	
004-5	50	
004-6	50	
004-T	50	
004-8	230,400	
004-9	230,400	
004-10	230,400	
007-A	25,920	25,920 gpd for 24 hours = 1,080 gph
007-B	4,896	4,896 gpd for 24 hours = 204 gph
101-1	8,064,000	8,064,000 gpd for 24 hours = 336,000 gph
101-2	50	Not expected to contribute to copper load
101-3	50	
101-4	50	
101-5	285,120	
101-6	285,120	
101-7	285,120	
101-8	90	
101-9	6,200	
102-1	6,912,000	6,912,000 gpd for 24 hours = 288,000 gph
102-2	90	Not expected to contribute to copper load
102-3	6,200	
102-4	50	
102-5	50	
102-6	50	

Table 3.5.1.1: Total flows used for site-wide water quality-based copper mass limits		
DSN	**PROPOSED MAXIMUM DAILY FLOW (gpd)**	**PROPOSED MAXIMUM DAILY FLOW THAT CAN OCCUR IN A DAY (gph)**
102-7	285,120	
102-8	285,120	
102-9	285,120	
103-1	153,040	
103-2	8,640	
103-3	230,400	
103-4	230,400	
103-5	230,400	
104-1	5,760,000	Same as 004-1 and will not occur when 004-1 occurs.
104-2	6,200	
104-3	2	
104-4	90	
104-5	50	
104-6	50	
104-7	50	Not expected to contribute to copper load.
104-8	230,400	
104-9	230,400	
104-10	230,400	
105-1	18,500	18,500 gpd for 24 hours = 771 gph
105-2	18,500	18,500 gpd for 24 hours = 771 gph
105-3	18,500	18,500 gpd for 24 hours = 771 gph
105-4	18,500	18,500 gpd for 24 hours = 771 gph
106-1	300,000	300,000 gpd for 24 hours = 12,500 gph
106-2	300,000	300,000 gpd for 24 hours = 12,500 gph
	Total Flow	Total flow = 70,001,352 gph Flow for acute criteria = 8,626,788 gph Flow for chronic criteria = 2,916,723 gph

WLA = Waste load allocation, $(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Q_e = Effluent data

Acute: Q_u = 21,660,000 gph, $Q_{e,acute,}$ = 8,626,788 gph, Q_d = 30,286,788 gph.
Chronic: Q_u = 21,660,000 gph, $Q_{e,chronic,}$ = 2,916,723 gph, Q_d = 24,576,723 gph.

Site-wide IWC for acute criterion = $\frac{MDL}{(MDL+ZOI)}$ X 100% = $\frac{8,626,788}{(8,626,788+21,660,000)}$ X 100%,

IWC = 28.5%

Site-wide IWC for chronic criterion = $\frac{MDL}{(MDL+ZOI)}$ X 100% = $\frac{2,916,723}{(2,916,723+21,660,000)}$ X 100%,

IWC = 11.9%

Table 3.5.1.2: Calculation of site-wide water quality-based copper mass limits					
Connecticut Water Quality Criteria (saltwater): 4.8 µg/l - Aquatic Life (Acute), 3.1 µg/l - Aquatic Life (Chronic)					
Copper	Maximum projected conc. in effluent = Maximum measured conc. in effluent X RP statistical multiplier	$WLA_{acute} = \frac{(QC)_d - (QC)_u}{Q_e}$(µg/l)	$WLA_{chronic} = \frac{(QC)_d - (QC)_u}{Q_e}$(µg/l)		Is there reasonable potential to exceed WQC?
		$\frac{(4.8\ X\ 30{,}286{,}788) - 0}{8{,}626{,}788} =$ 16.85	$\frac{(4.8\ X\ 30{,}286{,}788) - 0}{8{,}626{,}788} =$ 26.12		RPA has been established for many outfalls
LTA = Long term average, AML = Average monthly limit, MDL = Maximum daily limit					
Copper	LTA_{acute} = WLA_{acute} X 99th percentile WLA statistical multiplier (µg/l)	$LTA_{chronic}$ = $WLA_{chronic}$ X 99th percentile WLA statistical multiplier (µg/l)	Governing LTA	AML = LTA x 95th percentile LTA statistical multiplier (µg/l)	MDL = LTA x 99th percentile LTA statistical multiplier (µg/l)
	16.85 X 0.321 = 5.41	26.12 X 0.527 = 13.77	5.41	5.41 X 1.55 = 8.39	5.41 X 3.11 = 16.83
AML (Mass in kg/d) for copper: 8.39 X 10^{-9} kg/l X 70.001352 X 10^{6} X 3.785 liter/d = 2,223 X 10^{-3} kg/d = 2.223 kg/d					
MDL (Mass in kg/d) for copper: 16.83 X 10^{-9} kg/l X 70.001352 X 10^{6} X 3.785 liter/d = 4,459 X 10^{-3} kg/d = 4.459 kg/d					

3.6 WHOLE EFFLUENT TOXICITY

The Permittee shall comply with effluent standards or prohibitions established by CWA § 307(a) and RCSA Section 22a-430-4(l) and may not discharge toxic pollutants in concentrations or combinations that are harmful to humans, animals, or aquatic life. If toxicity is suspected in the effluent, DEEP may require the Permittee to perform acute or chronic whole effluent toxicity testing.

Toxicity limits were included based on the IWC consistent with RCSA 22a-430-4(l)(5)(A)(i-ii) . For discharges that previously had no observed adverse effect level (NOAEL) limits of greater or more than 90% test organisms' survival in an undiluted (100%) effluent, NOAEL limits were calculated based on the allocated ZOI and the resultant IWC as shown below:

For DSNs 001-A, 001-B with IWC of 15%, NOAEL limit = IWC X 20/3 = 15 X 20/3 = 100% which is survival of 90% or greater of test species in an undiluted (100%) effluent.

For DSNs 001-C, 001-D, with IWC of 14.3%, NOAEL limit = IWC X 20/3 = 14.3 X 20/3 = 95% which survival of 90% or greater of test species in a 95% effluent.

For DSNs 001-E, 002-C with IWC of 5.5%, NOAEL limit = IWC X 20/3 = 5.5 X 20/3 = 37% which survival of 90% or greater of test species in a 37% effluent.

For DSNs 002-A and 002-B with IWC of 9.6%, NOAEL limit = IWC X 20/3 = 9.6 X 20/3 = 64% which survival of 90% or greater of test species in an 64% effluent.

For DSNs 003-1 and 004-1 with IWC of 6.8%, NOAEL limit = IWC X 20/3 = 6.8 X 20/3 = 45% which survival of 90% or greater of test species in a 45% effluent.

For new discharges DSNs 001-G, 001-H, 002-D, 002-E, 002-F, 002-G, 101-1, 102-1, 104-1, 105-1, 105-2, 105-3, 105-3, 106-1 and 106-2, no observed adverse effect level (NOAEL) testing requirements were included because the discharges are not expected to have high toxicity.

DSNs 007-A and 007-B both had toxicity limits of $LC_{50} \geq 20\%$. A review of toxicity data for both discharges showed that LC_{50} was always 100%. An analysis was conducted to determine if limits or monitoring are needed:

Acute toxic unit (TU_a) = $100/LC_{50}$, TUa = 100/100 = $1TU_a$
IWC for DSN 007-A = 0.03 (see Section 3.3 of this fact sheet)
Projected maximum toxicity = $1TU_a$ (highest observed toxicity data) X 2.8 (multiplier in Attachment 2) X 0.03 (dilution factor) = 0.084 TU_a

IWC for DSN 007-B = 0.03 (see Section 3.3 of this fact sheet)
Projected maximum toxicity = $1TU_a$ (highest observed toxicity data) X 2.8 (multiplier in Attachment 2) X 0.03 (dilution factor) = 0.084 TU_a

Projected maximum toxicities for DSNs 007-A and 007-B are much lower than EPA's Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) recommended whole effluent toxicity criteria for protection against acute effects: $0.3TU_a$. Therefore, there is no reasonable potential of causing toxicity and a limit is not needed.

The test species used for aquatic toxicity are dependent on the salinity of the discharge and are either *Mysidopsis bahia* and *Cyprinodon varigatus* or *Daphnia pulex* and *Pimephales promelas*. However, RCRA Section 22a-430-3(j)(7)(A)(iii) specifies that test species are dependent on the receiving water salinity, as follows:

(a) For discharges to fresh receiving waters exhibiting a normal salinity of 1 ppt or less, *Pimephales promelas* and *Daphnia pulex* shall be used;

(b) For discharges to estuarine waters exhibiting a normal salinity of between 1 ppt and 20 ppt, species selection shall be determined by the Commissioner on a case-by-case basis; and

(c) For discharges to marine waters exhibiting a normal salinity greater than 20 ppt, *Cyprinodon varigatus* and *Mysidopsis bahia* shall be used.

Review of previous data showed the salinity of the receiving is higher than 25 ppt. Therefore, the test organisms will continue to be *Cyprinodon varigatus* and *Mysidopsis bahia.*

3.7 MONITORING FREQUENCY

RCSA Section 22a-430-3(j) prescribes weekly monitoring for shipbuilding wastewater. The sampling frequencies contained in the permit are consistent with RCSA Sections 22a-430-3(j) when the discharges are continuous. For non-continuous discharges, monthly or annual monitoring requirements are included. For discharges that occur once in two or five years, monitoring is required when discharges occur.

3.8 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
DSN 001-A	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	≥ 90 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Copper limits were not included for this outfall. Compliance with water quality-based limits is determined by site-wide mass limits.	Monthly
	Flow, Maximum during 24 hr period	11,413,703 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	Monitoring only requirement based on BPJ.	Monthly
	Oxidants, Total Residual (as chlorine) (Applicable 24 months after permit's effective date)	MDL= 86 µg/l (to meet in-stream WQS) MIL = 129 (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
DSN 001-B	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	≥ 90 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Copper limits were not included for this outfall. Compliance with water quality-based limits is determined by site-wide mass limits.	Monthly
	Chromium, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Flow, Maximum during 24 hr period	11,413,703 gpd (Permitted discharge flow per application)	Daily/Monthly
	Lead, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	Monitoring only requirement based on BPJ.	Monthly
	Oxidants, Total Residual (as chlorine) (Applicable 24 months after permit's effective date)	MDL= 86 µg/l (to meet in-stream WQS)	Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
		MIL = 129 (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	MDL= 598 µg/l (to meet in-stream WQS) MIL = 897 (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	
DSN 001-C	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 95%	≥ 90 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 95%		
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent		
	Copper, Total	Copper limits were not included for this outfall. Compliance with water quality-based limits is determined by site-wide mass limits.	Monthly
	Flow, Maximum during 24 hr period	17,948,947 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
DSN 001-D	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 95%	≥ 90 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 95%		
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent		
	Copper, Total	Copper limits were not included for this outfall. Compliance with water quality-	Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
		based limits is determined by site-wide mass limits.	
	Chromium, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Flow, Maximum during 24 hr period	17,948,947 gpd (Permitted discharge flow per application)	Daily/Monthly
	Lead, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Oxidants, Total Residual (as chlorine) (Applicable 24 months after permit's effective day)	MDL= 91 µg/l (to meet in-stream WQS) MIL = 137 (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	MDL= 628 µg/l (to meet in-stream WQS) MIL = 942 (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4	Monthly
DSN 001-E	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Weekly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 37%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 37%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Chronic Aquatic Toxicity (Survival) Mysidopsis bahia	Monitoring only requirement	Annually
	Chronic Aquatic Toxicity (Reproduction) Mysidopsis bahia	Monitoring only requirement	Annually
	Chronic Aquatic Toxicity (Survival) Cyprinodon variegatus	Monitoring only requirement	Annually
	Chronic Aquatic Toxicity (Growth) Cyprinodon variegatus	Monitoring only requirement	Annually
	Chromium, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Weekly/Monthly
	Copper, Total	AML= 0.172 kg/d (to meet in-stream WQS). MDL = 0.530 kg/d (to meet in-stream WQS).	Weekly/Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
		Also includes concentration monitoring requirement.	
	Fecal coliform	Monitoring only requirement due to TMDL for fecal coliform.	Monthly
	Flow rate, (Average Daily)	1,600,000 gpd (Permitted discharge flows per application)	Daily/Monthly
	Flow, Maximum during 24- hr period	3,686,400 gpd (Permitted discharge flows per application)	Daily/Monthly
	Lead, Total	AML = 0.456 kg/d (to meet in-stream WQS). MDL = 1.403 kg/d (to meet in-stream WQS). Also includes concentration monitoring requirement.	Weekly/Monthly
	Mercury, Total	AML = 0.051 µg/l (to meet in-stream WQS). MDL= 0.155 µg/l (to meet in-stream WQS). MIL = 0.233 µg/l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Weekly/Monthly
	Nickel, Total	AML = 0.547 kg/d (to meet in-stream WQS). MDL = 1.629 kg/d (to meet in-stream WQS). Also includes concentration monitoring requirement.	Monthly
	Nitrogen, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Oil and grease, Total	MDL = 10 mg/l MIL = 15 mg/l Anti-backsliding regulation.	Weekly/Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Oxidants, Total Residual (as chlorine)	AML = 82 µg/l (to meet in-stream WQS). MDL= 237 µg/l (to meet in-stream WQS).	Weekly/Monthly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Weekly/Monthly
	Polynuclear aromatic hydrocarbons (PAHs)	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Total Suspended solids	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Zinc, total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	
DSN 001-G	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Flow, Maximum during 24 hr period	2,608,846 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
DSN 001-H	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Flow, Maximum during 24 hr period	4,102,621 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
DSN 002-A	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 64%	$\geq$ 90 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 64%		
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	$\geq$ 50 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent		
	Copper, Total	Copper limits were not included for this outfall. Compliance with water quality-based limits is determined by site-wide mass limits.	Monthly
	Chromium, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Fecal coliform	Monitoring because of TMDL	Monthly
	Flow, Maximum during 24 hr period	27,731,574 gpd (Permitted discharge flow per application)	Daily/Monthly
	Lead, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	Monitoring only requirement based on BPJ.	Monthly
	Oxidants, Total Residual (as chlorine) (Applicable 24 months after permit's effective day)	MDL= 128 µg/l (to meet in-stream WQS) MIL = 172 (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
DSN 002-B	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 64%	≥ 90 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 64%		
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50 % survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent		
	Copper, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Fecal coliform	Monitoring because of TMDL	Monthly
	Flow, Maximum during 24 hr period	27,731,574 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
DSN 002-C	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Weekly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 37%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 37%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Chronic Aquatic Toxicity (Survival) Mysidopsis bahia	Monitoring only requirement	Annually
	Chronic Aquatic Toxicity (Reproduction) Mysidopsis bahia	Monitoring only requirement	Annually
	Chronic Aquatic Toxicity (Survival) Cyprinodon variegatus	Monitoring only requirement	Annually
	Chronic Aquatic Toxicity (Growth) Cyprinodon variegatus	Monitoring only requirement	Annually
	Chromium, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Weekly/Monthly
	Copper, Total	AML= 0.251 kg/d (to meet in-stream WQS). MDL = 0.606 kg/d (to meet in-stream WQS). Also includes concentration monitoring requirement.	Weekly/Monthly
	Fecal coliform	Monitoring only requirement due to TMDL for fecal coliform.	Monthly
	Flow rate, (Average Daily)	1,833,600 gpd (Permitted discharge flows per application)	Daily/Monthly
	Flow, Maximum during 24- hr period	2,640,000 gpd (Permitted discharge flows per application)	Daily/Monthly
	Lead, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Weekly/Monthly
	Mercury, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Weekly/Monthly
	Nickel, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Nitrogen, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Oil and grease, Total	MDL = 10 mg/l MIL = 15 mg/l Anti-backsliding regulation.	Weekly/Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Oxidants, Total Residual (as chlorine)	AML = 82 µg/l (to meet in-stream WQS). MDL= 236 µg/l (to meet in-stream WQS).	Weekly/Monthly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Weekly/Monthly
	Polynuclear aromatic hydrocarbons (PAHs)	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Total Suspended solids	Monitoring only requirement based on case-by-case determination using BPJ.	Weekly/Monthly
	Zinc, total	AML= 3.817 kg/d (to meet in-stream WQS). MDL = 11.370 kg/d (to meet in-stream WQS). Also includes concentration monitoring requirement.	Weekly/Monthly
DSN 002-D	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	Fecal coliform	Monitoring only requirement due to TMDL for fecal coliform.	Monthly
	Flow, Maximum during 24 hr period	8,200,000 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	
	Zinc, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
DSN 002-E	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	Fecal coliform	Monitoring only requirement due to TMDL for fecal coliform.	Monthly
	Flow, Maximum during 24 hr period	3,521,470 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	
	Zinc, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
DSN 002-F	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	Fecal coliform	Monitoring only requirement due to TMDL for fecal coliform.	Monthly
	Flow, Maximum during 24 hr period	134,000 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l	Monthly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
		Anti-backsliding regulation.	
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
DSN 002-G	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Monthly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100%	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100%		
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	Fecal coliform	Monitoring only requirement due to TMDL for fecal coliform.	Monthly
	Flow, Maximum during 24 hr period	134,000 gpd (Permitted discharge flow per application)	Daily/Monthly
	Oil and grease, Total	MDL = 10 mg/l, MIL = 15 mg/l Anti-backsliding regulation.	Monthly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
	pH, Minimum & Maximum	6.8 – 8.5 WQC	Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Zinc, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Monthly
DSN 003-1	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Copper, Total	AML = 25 µg/l (to meet in-stream WQS). MDL= 71 µg/l (to meet in-stream WQS). MIL = 107 µg/l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Quarterly
	Flow rate, (Average Daily)	2,310,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Flow Maximum during 24-hour period	2,850,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Oxidants, Total Residual (as chlorine)	AML = 62 µg/l (to meet in-stream WQS). MDL= 191 µg/l (to meet in-stream WQS).	Quarterly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
		MIL = 191 µg/l (Case-by-case determination using BPJ)	
	Lead, total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Quarterly
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Zinc	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
DSN 004-1	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Copper, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	Flow rate, (Average Daily)	4,920,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Flow Maximum during 24-hour period	5,760,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	Lead, total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Quarterly
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Zinc	AML = 658 µg/l (to meet in-stream WQS). MDL= 1320 µg/l (to meet in-stream WQS). MIL = 1980 µg/l l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Quarterly
DSN 007-A	LC_{50} Static 48 Hr Acute Toxicity, Mysidopsis bahia	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Annually
	LC50 Static 48 Hr Acute Toxicity, Cyprinodon variegatus[4]	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	
	Copper, Total	AML = 69 µg/l (to meet in-stream water quality). MDL= 159 µg/l (to meet in-stream water quality).	Annually

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
		MIL = 239 µg/l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s)).	
	Flow Maximum during 24-hour period	25,920 gpd Permitted discharge flow per application.	Daily/ Annually
	Lead, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Annually
	Oxidants, Total Residual (as chlorine) (Ends 24 months after permit's effective date)	Monitoring only requirement based on BPJ.	Annually
	Oxidants, Total Residual (as chlorine) (Applicable 24 months after permit's effective date)	AML = 240µg/l (to meet in-stream water quality). MDL= 277 µg/l (to meet in-stream water quality). MIL = 277 µg/l (Case-by-case determination using BPJ)	Annually
	pH, (Day of sampling)	6.8 – 8.5 WQC	Annually
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Annually
DSN 007-B	LC_{50} Static 48 Hr Acute Toxicity, Mysidopsis bahia	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Annually
	LC50 Static 48 Hr Acute Toxicity, Cyprinodon variegatus[4]	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	
	Copper, Total	AML = 69 µg/l (to meet in-stream water quality). MDL= 159 µg/l (to meet in-stream water quality). MIL = 239 µg/l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s)).	Annually
	Flow rate (Average daily)	3,600 gpd	Daily/Annually
	Flow Maximum during 24-hour period	4,986 gpd Permitted discharge volume per application.	Daily/Annually
	Lead, Total	AML = 143 µg/l (to meet in-stream water quality). MDL= 430 µg/l (to meet in-stream water quality). MIL = 645 µg/l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s)).	Annually
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Annually
	pH, (Day of sampling) (Ends 24 months after permit's effective date)	6.0 – 9.5 WQC Consistent with the previous permit	Annually
	pH, (Day of sampling) (Applicable 24 months after permit's effective date)	6.8 – 8.5 WQC	Annually
	Zinc, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Annually

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
DSN 101-1	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Flow rate, (Average Daily)	Monitoring only requirement	Daily/Quarterly
	Flow Maximum during 24-hour period	8,064,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Lead, total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	Polynuclear aromatic hydrocarbons (PAHs)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Quarterly
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Zinc	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
DSN 102-1	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Flow rate, (Average Daily)	Monitoring only requirement	Daily/Quarterly
	Flow Maximum during 24-hour period	6,912,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Lead, total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Quarterly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Zinc	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
DSN 104-1	Aluminum, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA.	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 45%	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 45% [4]	≥ 90% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Mysidopsis bahia, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Acute Aquatic Toxicity, Cyprinodon variegatus, survival in undiluted effluent	≥ 50% survival (Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii))	Quarterly
	Copper, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	Flow rate, (Average Daily)	4,920,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Flow Maximum during 24-hour period	5,760,000 gpd Permitted discharge flow per application.	Daily/Quarterly
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	Lead, total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Quarterly
	pH, Minimum and Maximum	6.8 – 8.5 WQC	Quarterly
	Temperature	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Zinc	AML = 658 µg/l (to meet in-stream WQS). MDL= 1320 µg/l (to meet in-stream WQS). MIL = 1980 µg/l (BPJ – multiplied MDL by a factor of 1.5 consistent with RCSA 22a-430-4(s))	Quarterly
DSN 105-1, DSN 105-2, DSN 105-3 and DSN 105-4,	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	Monitoring only requirement based on BPJ.	Annually
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	Monitoring only requirement based on BPJ.	Annually
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Annually
	Flow, Maximum during 24 hr period[1]	18,500 gpd Permitted discharge flow per application	Annually
	Lead, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Annually
	Nickel, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Annually
	pH, (Day of sampling)	6.8 – 8.5 WQC	Annually

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Annually
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Annually
	Zinc, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Annually
DSN 106-1 and DSN 106-2	Acute Aquatic Toxicity, Mysidopsis bahia, NOAEL = 100% [4]	Monitoring only requirement based on BPJ.	Per event
	Acute Aquatic Toxicity, Cyprinodon variegatus, NOAEL = 100% [4]	Monitoring only requirement based on BPJ.	Per event
	Copper, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Per event
	Flow, Maximum during 24 hr period[1]	18,500 gpd Permitted discharge flow per application	Per event
	Lead, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Per event
	Nickel, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Per event
	pH, (Day of sampling)	6.8 – 8.5 WQC	Per event
	Oxidants, Total Residual (as chlorine)	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Per event
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ.	Per event
	Zinc, Total	Monitoring only requirement based on BPJ. Not enough data to conduct RPA	Per event
DSN 111	Copper, Total	AML = 2.223 kg/d MDL = 4.459 kg/d Summation of the total mass of copper discharged at Electric Boat in one day.	Monthly
DSN 003-2	Flow Maximum during 24-hour period	288,000 gpd permitted discharge flow per application	No monitoring required
DSN 003-3		43,200 gpd permitted discharge flow per application	
DSN 003-4		15 gpd permitted discharge flow per application	
DSN 003-5		15 gpd permitted discharge flow per application	
DSN 003-6		15 gpd permitted discharge flow per application	
DSN 003-T		20 gpd permitted discharge flow per application	
DSN 003-8		20 gpd permitted discharge flow per application	
DSN 003-9		20 gpd permitted discharge flow per application	
DSN 003-10		75 gpd permitted discharge flow per application	
DSN 003-11		230,400 gpd permitted discharge flow per application	
DSN 003-12		230,400 gpd permitted discharge flow per application	

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
DSN 003-13		230,400 gpd permitted discharge flow per application	
DSN 004-2		6,200 gpd permitted discharge flow per application	
DSN 004-3		2 gpd permitted discharge flow per application	
DSN 004-4		90 gpd permitted discharge flow per application	
DSN 004-5		50 gpd permitted discharge flow per application	
DSN 004-6		50 gpd permitted discharge flow per application	
DSN 004-T		50 gpd permitted discharge flow per application	
DSN 004-8		230,400 gpd permitted discharge flow per application	
DSN 004-9		230,400 gpd permitted discharge flow per application	
DSN 004-10		230,400 gpd permitted discharge flow per application	
DSN 101-2		50 gpd permitted discharge flow per application	
DSN 101-3		50 gpd permitted discharge flow per application	
DSN 101-4		50 gpd permitted discharge flow per application	
DSN 101-5		285,120 gpd permitted discharge flow per application	
DSN 101-6		285,120 gpd permitted discharge flow per application	
DSN 101-7		285,120 gpd permitted discharge flow per application	
DSN 101-8		90 gpd permitted discharge flow per application	
DSN 101-9		6,200 gpd permitted discharge flow per application	
DSN 102-2		90 gpd permitted discharge flow per application	
DSN 102-3		6,200 gpd permitted discharge flow per application	
DSN 102-4		50 gpd permitted discharge flow per application	
DSN 102-5		50 gpd permitted discharge flow per application	
DSN 102-6		50 gpd permitted discharge flow per application	
DSN 102-7		285,120 gpd permitted discharge flow per application	
DSN 102-8		285,120 gpd permitted discharge flow per application	

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
DSN 102-9		285,120 gpd permitted discharge flow per application	
DSN 103-1		153,040 gpd permitted discharge flow per application	
DSN 103-2		8,640 gpd permitted discharge flow per application	
DSN 103-3		230,400 gpd permitted discharge flow per application	
DSN 103-4		230,400 gpd permitted discharge flow per application	
DSN 103-5		230,400 gpd permitted discharge flow per application	
DSN 104-2		3,520 gpd permitted discharge flow per application	
DSN 104-3		2 gpd permitted discharge flow per application	
DSN 104-4		90 gpd permitted discharge flow per application	
DSN 104-5		50 gpd permitted discharge flow per application	
DSN 104-6		50 gpd permitted discharge flow per application	
DSN 104-7		50 gpd permitted discharge flow per application	
DSN 104-8		230,400 gpd permitted discharge flow per application	
DSN 104-9		230,400 gpd permitted discharge flow per application	
DSN 104-10		230,400 gpd permitted discharge flow per application	

AML: Average Monthly Limit MDL: Maximum Daily Limit MIL: Maximum Instantaneous Limit
BPJ: Best Professional Judgment WQC: Water quality criteria WQS: Water quality standards

3.9 CHANGES MADE TO THIS PERMIT FROM THE PREVOIUS PERMIT

The following changes were made from the previous permit.

- Section 3D of the permit includes a statement that reads: "This permit includes determinations regarding section 316(a) of the federal Water Pollution Control Act 33 U.S.C. § 1326(a) regarding the thermal component of the discharge, and compliance with this permit is sufficient to assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving waters."

- Section 3D of the permit includes a statement that reads: "This permit includes the Commissioner's determination regarding the Permittee's Cooling Water Intake Structures in accordance with Section 316(b) of the federal Water Pollution Control Act, 33 U.S.C. § 1326(b) and Conn. Gen. Stat. § 22a-430. Compliance with this permit, specifically Sections 7 and 10, constitutes Best Technology Available."

- Section 3F of the permit includes a statement that reads: “Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.”

- DSN 001 and DSN 002 were removed because of redundancy. They were lists of contributory wastestreams that had no monitoring requirements. The wastestreams were monitored under DSNs 001-A, 001-B, 001-C, 001-D, 001-E, 002-A, 002-B and 002-C, and continue to be monitored under DSNs 001-A, 001-B, 001-C, 001-D, 001-E, 001-G, 001-H, 002-A, 002-B, 002-C, 002-D, 002-E, 002-F and 002-G.

- DSN 001F was removed because the discharge was of dewatering associated with construction activities. The construction activity has ended, and EB no longer generates the previously permitted wastewater.

- DSN 012 was removed because the building that generated the wastewater has been demolished.

- The following new discharges were added: DSNs 001-G, 001-H, 002-D, 002-E, 002-F, 002-G, 003-2, 003-3, 003-4, 003-5, 003-6, 003-7, 003-8, 003-9, 003-10, 003-11, 003-12, 003-13, 004-2, 004-3, 004-4, 004-5, 004-6, 004-7, 004-8, 004-9, 004-10, 101-1, 101-2, 101-3, 101-4, 101-5, 101-6, 101-7, 101-8, 101-9, 102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-8, 102-9, 103-1, 103-2, 103-3, 103-4, 103-5, 104-1, 104-2, 104-3, 104-4, 104-5, 104-6, 104-7, 104-8, 104-9, 104-10, 105-1, 105-2, 105-3, 105-4, 106-1 and 106-2.

- Toxicity limits were changed based on the revised IWC.

- Previous water quality-based limits for copper, lead and zinc were changed based on flow data and duration of flows and newly allocated ZOI (see Table 3.8).

- Existing Intakes 001-T, 002-T, 003-T, 004-T, 005-T, 006-T and new Intakes 007-T and 008-T are now permitted.

- The pH ranges of all discharges were changed from 6.0 – 9.5 to 6.8 – 8.5 consistent with the CT Water Quality Standards.

- Monitoring requirements for xylene and ethylbenzene were removed and replaced with polynuclear aromatic hydrocarbons (PAHs). EB has been monitoring for xylene and ethylbenzene for decades and they report non-detect or present in low concentrations. PAHs are expected to be present in the wastewater because of diesel exhaust stack contact cooling water.

- A compliance schedule to install or retrofit intake structures, achieve compliance with proposed effluent limitations and conduct thermal verification study was added.

3.10 OTHER PERMIT CONDITIONS

The permit contains special conditions that require the Permittee to:

1) Cover containers staged outside of enclosures unless when adding or removing trash;
2) Take additional precaution when an exposed operational activity generates particulate or debris to prevent the particulate or debris from entering the dock drainage system;
3) Prevent the transfer of external grease specified for use on submarines to dock floodwater;
4) Use a cloth filter to prevent discharge of solids to the dock drainage system during hydro-blasting process in graving docks #1 and #2;
5) Clean dock surfaces immediately following dewatering;
6) Ensure graving docks are clear of garbage, exposed raw materials, oil, any visible pollutant or constituent of concern that could be discharged in any waste stream.
7) Ensure that pollution prevention mechanisms are in proper working order; and
8) Provide to DEEP a notice of installation or retrofitting of Intakes 001-T, 002-T, 003-T, 004-T, 005-T and 006-T with 2mm cylindrical woven mesh screens and through screen velocities that are equal or less than 0.5 fps before the intake structures are operated.

3.11 ANTIDEGRADATION

Implementation of the Antidegradation Policy follows a tiered approach pursuant to the federal regulations (40 CFR 131.12) and consistent with the Connecticut Antidegradation Policy included in the Connecticut Water Quality Standards (Section 22a-426-8(b-f) of the Regulations of Connecticut State Agencies). Tier 1 Antidegradation review applies to all existing permitted discharge activities to all waters of the state. Tiers 1 and 2 Antidegradation reviews apply to new or increased discharges to high quality waters and wetlands, while Tiers 1 and 3 Antidegradation reviews apply to new or increased discharges to outstanding national resource waters.

This discharge is an existing discharge, and the Permittee proposes an increase in volume or concentration of constituents from multiple outfalls. However, the receiving waterbody is not considered a high-quality water, as defined by RCSA Section 22a-426-1(36). Therefore, only the Tier 1 Antidegradation Evaluation and Implementation Review was conducted to ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved, consistent with Connecticut Water Quality Standards at RCSA Section 22a-426-8(a)(1). This review involved:

- An evaluation of narrative and numeric water quality standards, criteria and associated policies;
- The discharge activity both independently and in the context of other dischargers in the affected waterbodies; and
- Consideration of any impairment listed pursuant to Section 303d of the federal Clean Water Act or any TMDL established for the waterbody.

Compliance with all the terms and conditions in the new permit would ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved.

3.12 ANTI-BACKSLIDING

The limits, standards and conditions in this permit are in compliance with 40 C.F.R. 122.44(l) and RCSA Section 22a-430-4(l)(4)(A)(xxiii). 40 C.F.R. 122.44(l) states that "Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)"

The circumstances on which the previous permit was based have changed materially and substantially for the following reasons:

1) The construction dewatering associated with DSN 001F has been discontinued and is no longer accounted for in the new ZOI;

2) The research and development test tank associated with DSN 012 has been discontinued and is no longer accounted for in the new ZOI;

3) New waste streams and additional discharge outfalls are proposed; and

4) A new dye study was conducted that showed the mixing available for the stripping pump discharges (001-E and 002-C) and DSN 004-1 NCCW (the available dilution was divided amongst DSN 003-1, 004-1/104-1, 101-1 and 102-1 based on permitted flows). Based on the results of the dye study, new ZOIs were assigned. New limits were then calculated using the newly allocated ZOI and the approach for calculating water quality-based limits in the EPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001). The new limits are protective of the receiving waterbody.

Hence, the following limits are less stringent than the previous permit:

- The toxicity limits of DSN 001-C, 001-D, 001-E, 002-A, 002-B, 002-C, 003-1 and 004-1 were changed from NOAEL at 100% to NOAEL at 95%, 95%, 37%, 64%, 64%, 37%, 45% and 45% respectively;
- The toxicity limits for DSNs 007-A and 007-B were removed;
- The previous AML for copper for DSN 001-E was changed from 0.0964 kg/d to 0.172 kg/d and the MDL from 0.193 kg/d to 0.406 kg/d. The MDL for lead was changed from 1.07 kg/d to 1.403 kg/d; and
- The previous AML for copper for DSN 002-C was changed from 0.0964 kg/d to 0.251 kg/d and the MDL from 0.193 kg/d to 0.606 kg/d. The MDL for lead was changed from 1.07 kg/d to 1.126 kg/d. The MDL for zinc was changed from 7.6 kg/d to 11.37 kg/d.

SECTION 4.0 COOLING WATER INTAKE STRUCTURE (CWIS)

4.1 INTAKE WATER STRUCTURE DESCRIPTION

EB currently has 6 intake structures and proposes to add 2 new intake structures for water withdrawal from the Thames River. The Thames River is a 16-mile-long tidal river that begins in Norwich at the confluence of the Yantic and Shetucket Rivers and ends at Long Island Sound (LIS). EB is in the lower Thames River, approximately two miles from the mouth. The depth of the river in this area extends up to approximately 43 feet in the deepest location (in the navigation channel). The width of the river in the location of EB's intakes is approximately 2,400 to 4,175 feet across. The intake water supports construction, repair, and maintenance operations at EB site. The cumulative design flow of the CWISs is 33,868,000 gpd.

4.1.1 Existing CWIS

Intake 001-T

Intake 001-T supplies water for operations at GD #1 and #2. This intake system is located on the north wall of GD #2 and has been in operation since 1968. The intake structure comprises of 2 pumps and a spare pump with withdrawal rate of 1.44 MGD each making a total of 2.88 MGD. A portion of the flow withdrawn via Intake 001-T may bypass the cooling system to discharge directly to the river. The system can be operated up to 365 days per year depending on cooling demand. There are 2 screens with maximum design intake rate of 3.68 cfs each. The screen height is 4 ft each while width and length are 3 ft each. The perforation diameter is 0.19 in and perforation spacing is 0.5 in (on centers). The screen is fully submerged at mean low water level. The through screen velocity is 0.58 fps and the approach velocity is 0.06 fps.

Intake 002-T

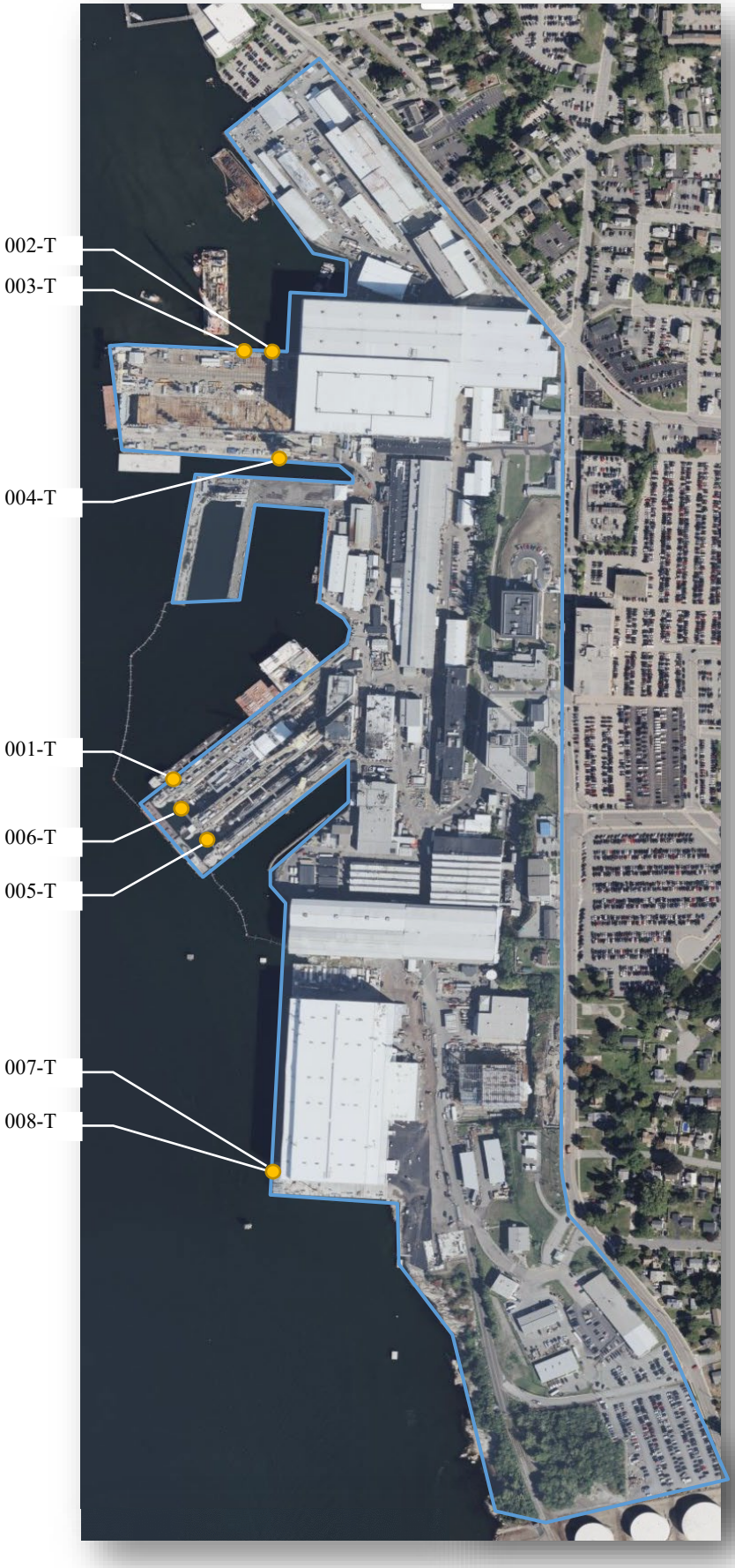
Intake 002-T supplies water for operations at Building 260 or GD #3. This intake system is located on the north side of GD #3 and has been in operation since 2008. The intake structure comprises of 2 pumps and a spare pump with withdrawal rate of 2.88 MGD each making a total of 5.76 MGD. There are 2 screens with maximum design intake rate of 4.46 cfs each. The screen length is 1.4 ft while the diameter is 1.25 ft. The square mesh opening is 0.5 inches and diameter is 0.080 inches. The screen is fully submerged at mean low water level. The through screen velocity is 0.89 fps and the approach velocity is 0.66 fps.

Intake 003-T or 004-T

Intake 003-T is the same as 004-T but at a different location. They both supply water for operations at GD #3. This is a movable intake structure such that when 003-T is in operation, 004-T is not. Intakes 003-T and 004-T have been in operation since 2011 and 2015, respectively. Intake 003-T is used on the north side of GD #3, and Intake 004-T is used on the south side of GD #3. These intakes supply water for non-contact cooling at GD #3. The intake structure comprises of 2 pumps and a spare pump with withdrawal rate of 2.88 MGD, each making a total of 5.76 MGD. 003-T operates 24 hours daily, up to 365 days per year. 004-T operates 24 hours daily, up to 30 days per test. 2 test periods are planned per year. The maximum design intake rate for 003-T and 004-T is 4.46 cfs. The screen length is 1.17 ft, while the diameter is 0.83 ft. The screen is fully submerged at mean low water level. The through screen velocity is 2.84 fps and the approach velocity is 1.36 fps.

Figure 4.1: Intake Structures

INTAKE	LATITUDE	LONGITUDE
DSN 001-T	41° 20’ 38.7”	72° 05’ 0.5”
DSN 002-T	41° 20’ 53.4”	72° 04’ 55.8”
DSN 003-T	41° 20’ 53.5”	72° 04’ 58.2”
DSN 004-T	41° 20’ 49.7”	72° 04’ 55.7”
DSN 005-T	41° 20’ 37.0”	72° 04’ 59.0”
DSN 006-T	41° 20’ 36.7”	72° 04’ 59.2”
DSN 007-T	41° 20’ 24.8”	72° 04’ 56.3”
DSN 008-T	41° 20’ 24.8”	72° 04’ 56.8”



Intake 005-T or 006-T

Intake 005-T and 006-T supply water for operations at GD #1 and #2, respectively. The intakes have been in operation since 1968. These gravity fed intakes operate alone or in tandem with withdrawal rate of 0.806 MGD, each making a total of 1.613 MGD. The maximum design intake rate for both intakes is 0.89 cfs. The screen diameter is 1.44 ft and comprises of 6 bars spaced 2.5 in apart with bar a diameter of 1.25 inch. The through screen velocities for both intakes are 1.77 fps. The approach velocities are 0.77 fps.

4.1.2 New CWIS

Intake 007-T

Intake 007-T will supply water for operations at Building 600. The intake structure comprises of 2 pumps and a spare pump with withdrawal rate of 4.032 MGD each, making a total of 8.064 MGD. The screen height and diameter are 2.62 ft. The screen opening is 1 mm and the design through screen velocity is 0.48 fps.

Intake 008-T

Intake 008-T will supply water for operations at Building 600. The intake structure comprises of 2 pumps and a spare pump with withdrawal rate of 3.456 MGD each making a total of 6.912 MGD. The maximum design intake rate for Intake 008 is 5.79 fps. The screen height and diameter are 2.62 ft. The screen opening is 1 mm and the design through screen velocity is 0.48 fps.

4.1.3 BTA for Existing CWIS

The federal regulations establish requirements under § 316(b) of the Clean Water Act (CWA) for existing power generating facilities and existing manufacturing and industrial facilities with a cooling water intake structure that have a design intake flow greater than 2 MGD of water from waters of the United States, and use at least 25 percent of the water they withdraw exclusively for cooling purposes. § 125.92 defines "Cooling water intake structure" as "the total physical structure and any associated constructed waterways used to withdraw cooling water from waters of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to and including the intake pumps."

EB has a design intake flow greater than 2 MGD and uses most of the water withdrawn for cooling purposes. Facilities with actual intake flow that is less than 125 MGD are required to submit information contained in 40 CFR 122.21(r)(2)-(8). EB has submitted information responsive to 40 CFR 122.21(r)(2)-(r)(8).

BTA standards for impingement contained in 40 CFR 125.94(c) require existing CWIS to comply with one of the following options to meet BTA standards for impingement.

- Closed-cycle recirculating system;
- 0.5 fps actual or design through screen velocity;
- Existing offshore velocity cap (velocity cap located a minimum of 800 ft from shoreline i.e., intake designed to change direction of water withdrawal from vertical to horizontal);

- Modified travelling screens with a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote predation or re-impingement of the fish or require a large vertical drop;
- Systems of technologies as the BTA for impingement mortality (based on 40 CFR 122.21(r)(6)(ii) – the applicant must include biological data measuring the reduction in impingement mortality);
- Impingement mortality performance standards (12-month impingement mortality standard of life stages of fish and no more than 25% mortality of shellfish);
- Additional measures for shellfish and other species;
- Reuse of other water for cooling purposes; or
- De minimis rate of impingement.

40 CFR 125.94(d) requires the Commissioner to establish BTA standards for entrainment for each intake on a site-specific basis. The existing intake structures at EB do not meet the BTA standards for impingement and entrainment. EB evaluated alternative technologies such as closed cycle systems, variable frequency drives, seasonal mesh static screen replacement, fine mesh wedge wire screens, fine mesh travelling screens, aquatic filter barriers, and alternate cooling water uses.

Local water sources can't meet EB's cooling water flow needs while providing reliable, potable water to nearby municipal customers. Therefore, alternate cooling water sources are not a viable option. For some of the intakes, the shoreline near the CWIS docks is not available for an aquatic filter barrier system due to submarine navigation and access requirements at the shipyard docks. Fine mesh traveling screens could not be constructed due to the need for total reconstruction and modification of existing intake systems and due to limited space and navigability requirements at the EB docks. The conceptual closed-cycle cooling design shows limited space availability including extensive modifications with negative environmental impacts (such as habitat loss due to closed cycle system footprint).

Based on the above reasons, EB proposes to retrofit new intakes with 2mm fine mesh screens with through screen velocities of $\leq$ 0.5 fps as follows.

TABLE 4.1: PROPOSED THROUGH-SCREEN VELOCITIES OF RETROFITTED EXISTING INTAKE SCREENS

	INTAKE 001	**INTAKE 002**	**INTAKE 003 & 004**	**INTAKE 005 & 006**
Design inflow (MGD)	2.88	2.88	5.76	0.8064
Number of screens	2	2 and 1 spare	2 and 1 spare	1
Screen % open area	60%	60%	60%	53.3%
Screen open area (ft^2)	13.0	13.0	13.0	3.77
Through screen velocity (fps)	0.28	0.34	0.34	0.33

Installation of the fine mesh screen will ensure compliance with the BTA impingement requirement contained in 40 CFR 125.94(c)(3). The permit includes a compliance schedule for the installation of the mesh. Based on the entrainment losses table associated with the 2mm fine mesh screen that was provided during permit renewal processing, the BTA standard for entrainment will also be met after the installation of the fine mesh screen.

4.1.4 BTA for New CWIS

New CWIS in existing facilities are required to meet the BTA standards contained in 40 CFR 125.94(e) for impingement and entrainment. The standards include:

- Reduction of intake flow to levels commensurate to closed-cycle recirculating system (CCRS); or
- Alternatively, technologies and operational measures used must be comparable to closed - cycle recirculating systems, and must demonstrate that entrainment reduction is $\geq$ 90% of the entrainment reduction that can be achieved using CCRS.

EB submitted analysis of the feasibility of installing CCRS on site and concluded that it had a high level of difficulty based on the following reasons:

- In-river construction of a 105-foot by 30-foot platform and partial obstruction of the South Yard Assembly Building (SYAB) deck walkway is required to provide suitable cooling tower locations. Additional structural support may need to be constructed for the SYAB deck walkway, depending on the results of structural analyses performed during subsequent phases of design.

- Construction of the cold-water basin requires the installation of a braced cofferdam. Installation of the cofferdam underneath the existing SYAB and continuous dewatering of the approximate 5,000 square foot enclosed area significantly increases the difficulty and duration of construction, along with the extent of the in-water impact.

- The cold-water basin enclosure would be 45 feet by 35 feet wide, 66 feet high, and would require excavation of the riverbed, resulting in permanent loss of marine habitat, disruption to bottom habitat, and difficulty in constructing the basin.

- Most of the construction would need to occur from barges, as the SYAB pedestrian walkway is not designed for construction vehicle loads.

- Piping for all outfalls (DSNs 101-1, 101-2, 101-3, 101-4, 101- 5, 101-6, 101-7, 101-8, 102-1, and 102-2) associated with Intakes 007-T and 008-T would need to be rerouted to discharge into a shared hot water basin. Efforts to reroute outfall piping through the congested SYAB would be substantial and could require up to 275 feet of reroute piping for each outfall. Hydraulic analyses of the existing cooling water systems would be required to confirm that enough head is available in the existing system to convey hot-water discharge to the hot-water basin. Additional pumps and tanks could be required if analyses indicate insufficient head is available.

- The nature of the CCRS retrofit at EB is not like CCRS retrofits at other facilities due to the configuration of the intakes, cooling systems, outfalls, and production operations at EB. Furthermore, unlike many CCRS installations, makeup water to the CCRS is saltwater and will require materials of construction that are compatible.

- The congested industrial nature of the facility and security provisions at the facility will also increase the difficulty of construction.

- Construction activities need to be sequenced to consider production schedule and minimize the downtime.

- The shared hot-water basin for the two intakes increases the complexity of the infrastructure design and installation.

- The new blowdown discharges associated with the cooling towers may result in permitting implications. Depending on the water quality of the blowdown flow, actions may need to be taken to reduce TDS, temperature, or otherwise treat the blowdown prior to discharging into the river.

- There is potential need for plume abatement.

Based on the above constraints, EB elected to install a 1 mm fine mesh screen with a through screen velocity that is lower than 0.5 fps. The intake comprises 1 mm screen overlay mesh size. The basket width is 5 ft, and the channel width is 6 ft 2 in. The fish returns are sized as 10-inch pipelines to accommodate larger fish and potential debris and to minimize contact with the sides of the return. Bends in the fish returns are minimized to prevent injuries to fish.

An estimated entrainment losses table was submitted and reviewed that showed that the elected option is comparable to the CCRS. The estimated entrainment losses table showed that ≥ 90% of the entrainment reduction that can be achieved using CCRS is achievable using the 1-mm fine mesh (see Tables 4.2 and 4.3). Therefore, the new intake structures will comply with the impingement and entrainment BTA standards for new units in an existing facility.

TABLE 4.2: ESTIMATED ANNUAL ENTRAINMENT LOSSES AT EB INTAKE 007-T

Species	**INTAKE 007-T**					
	Baseline	1-mm Screens	1-mm Screens Entrainment Reduction	CCRS	CCRS Entrainment Reduction	1-mm screens /CCRS
Tautog	1,526,431	213,700	86%	77,848	94.9%	90.6%
Atlantic tomcod	1,247,885	174,704	86%	63,642	94.9%	90.6%
Winter flounder	1,192,176	166,905	86%	60,801	94.9%	90.6%
American sand lance	835,637	116,989	86%	42,617	94.9%	90.6%
Unknown egg	701,935	98,271	86%	35,799	94.9%	90.6%
Atlantic herring	668,510	93,591	86%	34,094	94.9%	90.6%
Cunner	590,517	82,672	86%	30,116	94.9%	90.6%
Northern pipefish	323,113	45,236	86%	16,479	94.9%	90.6%
Grubby	233,978	32,757	86%	11,933	94.9%	90.6%
Rock gunnel	211,695	29,637	86%	10,796	94.9%	90.6%
Searobin sp.	167,127	23,398	86%	8,523	94.9%	90.6%
Striped bass	89,479	12,914	86%	4,546	94.9%	90.6%

The numbers in the table represent number of species which includes all life stages.

TABLE 4.3: ESTIMATED ANNUAL ENTRAINMENT LOSSES AT EB INTAKE 008-T

Species	INTAKE 008-T					
	Baseline	1-mm Screens	1-mm Screens Entrainment Reduction	CCRS	CCRS Entrainment Reduction	1-mm Screens /CCRS
Tautog	1,417,400	198,436	86%	72,287	94.9%	90.6%
Atlantic tomcod	1,158,751	162,225	86%	59,096	94.9%	90.6%
Winter flounder	1,107,021	154,983	86%	56,458	94.9%	90.6%
American sand lance	775,949	108,633	86%	39,573	94.9%	90.6%
Unknown egg	651,797	91,252	86%	33,242	94.9%	90.6%
Atlantic herring	620,759	86,906	86%	31,659	94.9%	90.6%
Cunner	548,337	76,767	86%	27,965	94.9%	90.6%
Northern pipefish	300,034	42,004	86%	15,302	94.9%	90.6%
Grubby	217,266	30,417	86%	11,081	94.9%	90.6%
Rock gunnel	196,574	27,520	86%	10,025	94.9%	90.6%
Searobin sp.	155,190	21,727	86%	7,915	94.9%	90.6%
Striped bass	82,768	11,588	86%	4,221	94.9%	90.6%

The numbers in the table represent the number of species which includes all life stages.

SECTION 5.0 SECTION 316(a) EVALUATION

Section 316(a) of the federal Water Pollution Control Act, U.S.C. § 1326(a) requires that the thermal component of any discharge assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving water body. The segment of Thames River where the discharge is located is classified as a class "SB" under the WQS. The applicable WQS for a class “SB” surface water is: "There shall be no changes from natural conditions that would impair any existing or designated uses assigned to this class and, no case exceed 83ºF, or in any case raise the temperature of surface water more than 4ºF. During the period including July, August, and September, the temperature of the receiving water shall not be raised more than 1.5ºF" (Section 4(C) of this permit renewal).

EB discharges a heat load to the Thames River from NCCW (DSNs 003-1 and 004-1). The permit issued on July 5, 2006, did not include effluent limitations for temperature for the NCCW discharges.

During the technical review of EB’s renewal application, DEEP staff evaluated the impact of thermal discharges from outfalls DSN 003-1 and 004-1 on the Thames River and requested that the Applicant conduct a thermal evaluation in accordance with Section 316(a) of the Federal Water Pollution Control Act (FWPCA) and the Connecticut WQS. Consequently, DEEP received a thermal discharge verification study “Dye and Thermal Dilution Studies” in January 2016. This report showed no thermal plume and no adverse impact from DSNs 003-1 and 004-1 to the river. The report stated that the cooling water discharges will have no significant effect on the propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the Thames River.

In November 2022, EB submitted a biothermal assessment for Clean Water Act 316(a) study because the thermal plumes could not be delineated in the previous thermal evaluation.

The study consisted of characterization of water temperature of Thames River using available hourly temperature readings collected by National Oceanic and Atmospheric Administration (NOAA) Section 8461490 for the months of September through December of 2018, and January through August of 2019. Ambient temperatures ranged from a high of 76.6 ºF in September 2018, to a low of 32.5 ºF in January 2019.

The zone of influence in the study was limited to 25% of the cross-sectional area of the receiving waterbody. The study assessed the thermal impact of discharges (DSN 003-1 and 004-1) on the receiving waterbody using the mixing equation $T_f = \frac{(Q_d + Q_d) + (Q_z + Q_z)}{(Q_d + Q_z)}$, where T_f is the final temperature, Q_d is the discharge flow, T_d is the discharge temperature, Q_z is the thermal ZOI, and T_z is the waterbody temperature.

The thermal modeling showed temperature increases of 0.003ºF and 0.03ºF in the thermal ZOI during summer conditions, and temperature increases of 0.014ºF and 0.048ºF during winter conditions from DSN 003-1 and 004-1 discharges, respectively.

A biothermal assessment was conducted by evaluating the biotic categories in the waterbody and their vulnerability using representative important species (RIS) to determine whether the balanced indigenous community (BIC) is protected and maintained under the current operations.
The findings of the biothermal fish temperature model system (FTMS), are summarized below.

TABLE 5.1: FISH TEMPERATURE MODEL SYSTEM RESULTS FOR THERMAL ENDPOINTS

Thermal Endpoint	**Proportion of Representative Fish Species**			
	100%	90%	75%	50%
Optimum	51.6ºF	51.6ºF	71.6ºF	79ºF
Growth (MWAT)	60.9ºF	63.5ºF	76.3ºF	84.3ºF
Survival (long-erm)	71.6ºF	71.6ºF	82.2ºF	86.5ºF
Survival (short-term)	75.2ºF	75.2ºF	85.8ºF	90.1ºF

The findings of the FTMS for the selected RIS concluded that maximum weekly average temperature (MWAT) of 63.5 ºF is predicted to be protective of the growth requirements of 90% of species within the BIC. The estimated MWAT of 63.5ºF is above the mean ambient temperature of Thames River for the months of November through June, and below the mean ambient temperature for July through October. Therefore, certain months of the year have ambient temperature that exceeds the MWAT. The estimated short-term survival thermal endpoint is below the maximum ambient temperature recorded for the Thames River except for September. The findings of the FTMS were compared to the results from thermal modeling and showed minimal temperature increase within the thermal ZOI in the winter and summer months.

The conclusion from the study was that the habitat outside of the ZOI of the thermal discharge is supportive of the BIC and the thermal discharge was not expected to alter the BIC under the former operating conditions. It was predicted that fish species inhabiting this segment of the river will avoid the zone of influence from the thermal plume, with sufficient alternate habitat and passageway available.

5.1 COMMISSIONER'S PROPOSED DECISION ON THERMAL VARIANCE REQUEST

RCSA Section 22a-430-4(q)(2)(A)(ii) allows the Commissioner to grant or deny variances for alternative effluent limits for thermal discharges which are made in accordance with the criteria and procedures specified in 40 CFR Part 125 Subpart H. The Applicant must demonstrate to the satisfaction of the Commissioner that thermal effluent limitations required under Section 301 or 306 of the Clean Water Act and WQS are more stringent than necessary to assure the protection and propagation of a balanced, indigenous, population of fish, shellfish, and wildlife in and on the waterbody receiving the discharge.

At the time the above referenced studies were conducted, the Permittee didn't have DSN 101-1 and 102-1 discharges. Therefore, the proposed alternate temperature limits for DSN 003-1 and 004-1 are not incorporated. Temperature monitoring requirements were carried forward for DSN 003-1, DSN 004-1 and added for DSN 101-1, 102-1 and 104-1. A compliance schedule to conduct a new thermal verification study including all the thermal discharges is included in the permit.

SECTION 6.0 COMPLIANCE SCHEDULE

The permit has a compliance schedule that follows the requirements found under 40 CFR 122.47 and RSCA Section 22a-430-4(l)(3).

The compliance schedule requires EB to retrofit Intakes 001-T, 002-T, 003-T, 004-T, 005-T and 006-T with 2 mm mesh screens, with through screen velocities that are equal or lower than 0.5 fps on or before May 31, 2026, February 28, 2025, April 30, 2025, April 30, 2025, October 31, 2025, and June 30, 2026, respectively. The specified dates are based on when the graving docks are not in operation, i.e., when the graving docks will not have vessels in them. It may be hazardous to conduct the retrofitting while vessels are in the docks.

The compliance schedule also requires EB to achieve compliance with the total residual oxidant (as chlorine) and pH effluent limitations in Section 5 of the proposed permit and conduct a thermal verification study within 24 months of the effective date of the permit. Some of the outfalls have discharges that are infrequent, and it will be necessary to have active discharges when conducting the necessary evaluation to determine how to ensure compliance with the permit limitations and verify thermal impact. Therefore, to provide sufficient time to comply with the compliance schedules, a 24-month period is allocated.

Additionally, the time allotted to the thermal verification study is necessary to assess the seasonal impact of the thermal discharges in conjunction with the other thermal discharges from the site.

SECTION 7.0 VARIANCES AND WAIVERS

The Permittee requested alternative effluent limits for thermal discharges consistent with RCSA Section 22a-430-4(q)(2)(A)(ii).

SECTION 8.0 E-REPORTING

The Permittee is required to electronically submit documents in accordance with 40 CFR Part 127.

SECTION 9.0 PUBLIC PARTICIPATION PROCEDURES

9.1 INFORMATION REQUESTS

The application has been assigned the following numbers by the Department. Please use these numbers when corresponding with this office regarding this application.

APPLICATION NO. 201006743 PERMIT ID NO. CT0003824

Interested persons may obtain copies of the application from Michael S. Sinko, Electric Boat Corporation, 75 Eastern Point Road, Groton, CT 06340, msinko@gdeb.com, Phone No.: (860) 433-2971.

The application is available for inspection by contacting Oluwatoyin Fakilede at 860-424-3025 or oluwatoyin.fakilede@ct.gov-, at the Department of Energy and Environmental Protection, Bureau of Materials Management and Compliance Assurance, 79 Elm Street, Hartford, CT 061065127 from 8:30 AM to- 4:30 PM-, Monday through Friday.

Any interested person may request in writing that his or her name be put on a mailing list to receive notice of intent to issue any permit to discharge to the surface waters of the state. Such request may be for the entire state or any geographic area of the state and shall clearly state in writing the name and mailing address of the interested person and the area for which notices are requested.

9.2 PUBLIC COMMENT

Prior to making a final decision to approve or deny any application, the Commissioner shall consider written comments on the application from interested persons that are received within 30 days of this public notice. Written comments should be directed to Oluwatoyin Fakilede, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127 or oluwatoyin.fakilede@ct.gov. The Commissioner may hold a public hearing prior to approving or denying an application if in the Commissioner's discretion the public interest will be best served thereby, and shall hold a hearing upon receipt of a petition signed by at least 25- persons. Notice of any public hearing shall be published at least 30 days prior to the hearing.

Petitions for a hearing should include the application number noted above and also identify a contact person to receive notifications. Petitions may also identify a person who is authorized to engage in discussions regarding the application and, if resolution is reached, withdraw the petition. Original signed petitions may be scanned and sent electronically to deep.adjudications@ct.gov or may be mailed or delivered to: DEEP Office of Adjudications, 79 Elm Street, 3rd floor, Hartford, 06106-5127. All petitions must be received within the comment period noted above. If submitted electronically, original signed petitions must also be mailed or delivered to the address above within ten days of electronic submittal. If a hearing is held, timely notice of such hearing will be published in a newspaper of general circulation. For additional information go to www.ct.gov/deep/adjudications.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). If you are seeking a communication aid or service, have limited proficiency in English, wish to file an ADA or Title VI discrimination complaint, or require some other accommodation, including equipment to facilitate virtual participation, please contact the DEEP Office of Diversity and Equity at 860-418-5910 or by email at deep.accommodations@ct.gov. Any person needing an accommodation for hearing impairment may call the State of Connecticut relay number - 711. In order to facilitate efforts to provide accommodation, please request all accommodations as soon as possible following notice of any agency hearing, meeting, program, or event.

ATTACHMENT 1

Previous ZOI allocation memo

STATE OF CONNECTICUT
DEP-WATER COMPLIANCE UNIT
INTERDEPARTMENTAL MESSAGE

APRIL 22, 1991

TO: JOSEPH HOLMES, SANITARY ENGINEER
DEP/WCU- PERMITS AND ENFORCEMENT

FROM: ROSEMARY GATTER-EVARTS, SENIOR ENVIRONMENTAL ANALYST EXT. 2588
DEP/WCU-TOXICITY, 122 WASHINGTON STREET, HARTFORD, CT

SUBJ: ELECTRIC BOAT, GROTON...REVIEW OF DTE AND DYE STUDY

****

Joe,

I have reviewed the Discharge Toxicity Evaluation (DTE) submitted by Envirosystems, Inc in New Hampshire on behalf of Electric Boat in Groton. The information necessary to complete the DTE was submitted on February 24, 1989. The dye study conducted by Ocean Surveys was submitted on January 30, 1989. It does not appear that the dye dilution map submitted with the final report was updated to include my comments on the preliminary copy. My comments for both the DTE and Dye study were sent to Electric Boat (i.e my letter December 23, 1988). This current review will also include the results from quarterly monitoring and a revision in the draft permit language for Electric Boat.

Electric Boat has thirty one permitted discharges. Two of these discharges can be classified as process discharges, DSN 008 and DSN 016. Both these discharges are from the graving docks. There is no actual treatment associated with these discharges and effluent quality is dependent upon good housekeeping practices and the work done on that particular submarine. Variability in effluent quality is to be expected. For the DTE these discharges were to be sampled following three events. Since these are not continuous discharges, a quarterly monitoring frequency for monitoring was not practical. As a result of random operations, these graving docks were not originally included in the "quarterly " monitoring data required in the regulations.

Of the remaining discharges, twenty three of these are stormwater only, three contain non contact cooling water with or without biocide,and three contain non contact cooling water and boiler blowdown. Monitoring or assessment in the DTE was not required for the Stormwater discharges. Screening analyses on two of the three boiler blowdown discharges (DSN 010 and 018) were required in the DTE. If toxicity was evident or the discharge was primarily saltwater, Mysidopsis bahia and Cyprinodon varigatus were used as test organisms. Two of the three non contact cooling waters (DSN 013 and 014) were also screened for toxicity, both of these cooling waters may contain the biocide, TB-66. The third non contact cooling water (DSN 031) will be an intermittent discharge of 2 MGD. Permit language as previously stated should address any potential concerns.

The results of the toxicity tests conducted for the various discharges submitted in the DTE and the quarterly monitoring are listed in the table below.

Lab.	DSN	Date	D. pulex	P. promelas	M. bahia	C. varigatus
			% SURVIVAL		% SURVIVAL	
ESI	008	10/04/88	---	---	68%	80%
	008	10/12/88	---	---	80%	100%
	008	01/24/89	---	---	85%	100%
	008	12/01/90	---	---	100%	100%
	010	10/04/88	62%	98%	---	---
	010	10/12/88	---	---	90%	100%
	010	12/20/88	---	---	80%	100%
	010	12/18/89	---	---	95%*	100%
	010	03/20/90	---	---	100%	100%
	010	06/25/90	---	---	90%*	100%
	010	09/24/90	---	---	100%	100%
	010	12/01/90	---	---	100%	100%
	013	10/04/88	---	---	90%	48%
	013	10/12/88	---	---	100%	100%
	013	12/20/88	---	---	75%	100%
	013	06/25/90	---	---	100%	100%
	013	09/24/90	---	---	100%	100%
	014	10/04/88	0%	0%	---	---
	014	10/12/88	100%	100%	---	---
	014	12/20/88	---	---	100%	100%
	014	12/18/89	---	---	85%*	100%
	014	03/20/90	---	---	75%	100%
	014	06/25/90	---	---	100%	100%
	014	09/24/90	---	---	100%	100%
	014	12/11/90	---	---	100%	100%
	016	10/04/88	---	---	100%	90%
	016	01/06/89	---	---	85%	100%
	016	01/24/89	---	---	95%	100%
	016	12/18/90	---	---	40%(LC50=92%)	100%
	018	10/04/88	---	---	96%	100%
	018	01/24/89	---	---	100%	100%
	018	01/27/89	---	---	100%	100%
	018	12/18/89	---	---	64%	100%
	018	03/20/90	---	---	95%*	100%
	018	06/25/90	---	---	100%	100%
	018	09/24/90	---	---	100%	100%
	018	12/18/90	---	---	100%	100%

* uneven mortality- higher mortality in lower effluent concentrations

Chemical analysis of these samples did not reveal the parameter responsible for most of the toxicity mainly because either chemistry was not run on those particular dates 12/89 and 3/90 or not all parameters requested were run. For Discharge 008, there was no correlation between increased metals concentration and decreased survival. For DSN 010 the most toxic sample was collected on 12/89 and no chemistry was run on that date. The June 20 sample which showed uneven mortality, had the highest concentration of lead. For DSN 013, the October 4, sample which was the most toxic to the fish had the highest level of Oil & Grease. However the sample which was most toxic to the Mysid shrimp did not have any of the parameters measured correlate with increased toxicity. DSN 013 is one of the discharges believed to contain the biocide TB-66. The concentration of the biocide was not measured. For DSN 014 the most toxic sample had the highest concentration of lead, oil & grease and nickel. The other two samples which exhibited toxicity did not have any chemistry accompanying the results. DSN 016 also showed fair correlation with chemical parameters measured and high toxicity. The most toxic sample had the highest levels of Oil & Grease, Nickel and lead. Chromium and tin should have been analyzed for weren't. DSN 018 is the largest contributor of cooling waters from Electric Boat into the Thames River, and although survival in 100% effluent was 95% on 3/18/90 there was significant mortality in the lower concentrations. No chemistry was run on this sample.

The dye study results indicated the Electric Boat's effluent is confined to the small cove area adjacent to the discharges. A 20:1 dilution appears appropriate to safeguard the surrounding areas. This zone of influence will confine chronic effects to the adjacent dock areas, 200 feet out and approximately 400 feet up and downstream. This zone of influence affects the toxicity limits for DSN 008 and can be calculated as follows:

IWC= .05 = 19,000 gpm effluent / (19,000 gpm eff + ZOI)
.05 (ZOI) = 18,050 gpm
ZOI = 361,000 gpm x 60 min/hr = 21,660,000 gph

A similar configuration exists where discharge 016 enters the Thames River. It can be assumed that mixing characteristics for DSN 016 will be similar to DSN 008 and the same ZOI can be used for both discharges. The toxicity limits for protection of chronic impact will be LC_{50} values greater than 100%.

After, reviewing the additional toxicity information for the specific discharges and taking into consideration the quarterly monitoring reports, I recommend the following changes from the previously drafted permit language. Testing for Discharges 013 and 010 may be discontinued. Testing for DSN 014 and DSN 018 will continue quarterly since it is the largest cooling water. The interim language for Discharge 031 will remain in effect since no information on this discharge exists.

If you have any questions regarding this memo, you may call me.

Rosemary Gallo Evans

cc: Lee Dunbar

ATTACHMENT 2

Reasonable Potential Statistical Multiplier (Table 3-1 of TSD EPA/505/2-90-001)

Table 3-1. Reasonable Potential Multiplying Factors: 99% Confidence Level and 99% Probability Basis

Number of	Coefficient of Variation																			
Samples	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
1	1.6	2.5	3.9	6.0	9.0	13.2	18.9	26.5	36.2	48.3	63.3	81.4	102.8	128.0	157.1	190.3	227.8	269.9	316.7	368.3
2	1.4	2.0	2.9	4.0	5.5	7.4	9.8	12.7	16.1	20.2	24.9	30.3	36.3	43.0	50.4	58.4	67.2	76.6	86.7	97.5
3	1.4	1.9	2.5	3.3	4.4	5.6	7.2	8.9	11.0	13.4	16.0	19.0	22.2	25.7	29.4	33.5	37.7	42.3	47.0	52.0
4	1.3	1.7	2.3	2.9	3.8	4.7	5.9	7.2	8.7	10.3	12.2	14.2	16.3	18.6	21.0	23.6	26.3	29.1	32.1	35.1
5	1.3	1.7	2.1	2.7	3.4	4.2	5.1	6.2	7.3	8.6	10.0	11.5	13.1	14.8	16.6	18.4	20.4	22.4	24.5	26.6
6	1.3	1.6	2.0	2.5	3.1	3.8	4.6	5.5	6.4	7.5	8.6	9.8	11.1	12.4	13.8	15.3	16.8	18.3	19.9	21.5
7	1.3	1.6	2.0	2.4	2.9	3.6	4.2	5.0	5.8	6.7	7.7	8.7	9.7	10.8	12.0	13.1	14.4	15.6	16.9	18.2
8	1.2	1.5	1.9	2.3	2.8	3.3	3.9	4.6	5.3	6.1	6.9	7.8	8.7	9.6	10.6	11.6	12.6	13.6	14.7	15.8
9	1.2	1.5	1.8	2.2	2.7	3.2	3.7	4.3	5.0	5.7	6.4	7.1	7.9	8.7	9.6	10.4	11.3	12.2	13.1	14.0
10	1.2	1.5	1.8	2.2	2.6	3.0	3.5	4.1	4.7	5.3	5.9	6.6	7.3	8.0	8.8	9.5	10.3	11.0	11.8	12.6
11	1.2	1.5	1.8	2.1	2.5	2.9	3.4	3.9	4.4	5.0	5.6	6.2	6.8	7.4	8.1	8.8	9.4	10.1	10.8	11.5
12	1.2	1.4	1.7	2.0	2.4	2.8	3.2	3.7	4.2	4.7	5.2	5.8	6.4	7.0	7.5	8.1	8.8	9.4	10.0	10.6
13	1.2	1.4	1.7	2.0	2.3	2.7	3.1	3.6	4.0	4.5	5.0	5.5	6.0	6.5	7.1	7.6	8.2	8.7	9.3	9.9
14	1.2	1.4	1.7	2.0	2.3	2.6	3.0	3.4	3.9	4.3	4.8	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2
15	1.2	1.4	1.6	1.9	2.2	2.6	2.9	3.3	3.7	4.1	4.6	5.0	5.4	5.9	6.4	6.8	7.3	7.7	8.2	8.7
16	1.2	1.4	1.6	1.9	2.2	2.5	2.9	3.2	3.6	4.0	4.4	4.8	5.2	5.6	6.1	6.5	6.9	7.3	7.8	8.2
17	1.2	1.4	1.6	1.9	2.1	2.5	2.8	3.1	3.5	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.8
18	1.2	1.4	1.6	1.8	2.1	2.4	2.7	3.0	3.4	3.7	4.1	4.4	4.8	5.2	5.6	5.9	6.3	6.7	7.0	7.4
19	1.2	1.4	1.6	1.8	2.1	2.4	2.7	3.0	3.3	3.6	4.0	4.3	4.6	5.0	5.3	5.7	6.0	6.4	6.7	7.1
20	1.2	1.3	1.6	1.8	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.2	4.5	4.8	5.2	5.5	5.8	6.1	6.5	6.8

ATTACHMENT 3

WLA Statistical Multipliers from (Table 5-1 of TSD EPA/505/2-90-001)

Table 5-1. Back Calculations of Long-Term Average

CV	WLA Multipliers $e^{[0.5\sigma^2 - z\sigma]}$	
	95th Percentile	99th Percentile
0.1	0.853	0.797
0.2	0.736	0.643
0.3	0.644	0.527
0.4	0.571	0.440
0.5	0.514	0.373
0.6	0.468	0.321
0.7	0.432	0.281
0.8	0.403	0.249
0.9	0.379	0.224
1.0	0.360	0.204
1.1	0.344	0.187
1.2	0.330	0.174
1.3	0.319	0.162
1.4	0.310	0.153
1.5	0.302	0.144
1.6	0.296	0.137
1.7	0.290	0.131
1.8	0.285	0.126
1.9	0.281	0.121
2.0	0.277	0.117

Acute

$$LTA_{a,c} = WLA_{a,c} * e^{[0.5\sigma^2 - z\sigma]}$$

where $\sigma^2 = ln[CV^2 + 1]$,
$z = 1.645$ for 95th percentile occurrence probability, and
$z = 2.326$ for 99th percentile occurrence probability

Chronic
(4-day average)

$$LTA_c = WLA_c * e^{[0.5\sigma_4^2 - z\sigma_4]}$$

where $\sigma_4^2 = ln[CV^2/4 + 1]$,
$z = 1.645$ for 95th percentile occurrence probability, and
$z = 2.326$ for 99th percentile occurrence probability

CV	WLA Multipliers $e^{[0.5\sigma_4^2 - z\sigma_4]}$	
	95th Percentile	99th Percentile
0.1	0.922	0.891
0.2	0.853	0.797
0.3	0.791	0.715
0.4	0.736	0.643
0.5	0.687	0.581
0.6	0.644	0.527
0.7	0.606	0.481
0.8	0.571	0.440
0.9	0.541	0.404
1.0	0.514	0.373
1.1	0.490	0.345
1.2	0.468	0.321
1.3	0.449	0.300
1.4	0.432	0.281
1.5	0.417	0.264
1.6	0.403	0.249
1.7	0.390	0.236
1.8	0.379	0.224
1.9	0.369	0.214
2.0	0.360	0.204

ATTACHMENT 4

LTA Statistical Multipliers from (Table 5-2 of TSD EPA/505/2-90-001)

Table 5-2. Calculation of Permit Limits

CV	LTA multipliers $e^{[z\sigma - 0.5\sigma^2]}$	
	95th Percentile	99th Percentile
0.1	1.17	1.25
0.2	1.36	1.55
0.3	1.55	1.90
0.4	1.75	2.27
0.5	1.95	2.68
0.6	2.13	3.11
0.7	2.31	3.56
0.8	2.48	4.01
0.9	2.64	4.46
1.0	2.78	4.90
1.1	2.91	5.34
1.2	3.03	5.76
1.3	3.13	6.17
1.4	3.23	6.56
1.5	3.31	6.93
1.6	3.38	7.29
1.7	3.45	7.63
1.8	3.51	7.95
1.9	3.56	8.26
2.0	3.60	8.55

Maximum Daily Limit

$MDL = LTA \cdot e^{[z\sigma - 0.5\sigma^2]}$

where $\sigma^2 = ln[CV^2 + 1]$,
$z = 1.645$ for 95th percentile occurrence probability, and
$z = 2.326$ for 99th percentile occurrence probability

Average Monthly Limit

$AML = LTA \cdot e^{[z\sigma_n - 0.5\sigma_n^2]}$

where $\sigma_n^2 = ln[CV^2/n + 1]$,
$z = 1.645$ for 95th percentile,
$z = 2.326$ for 99th percentile, and
n = number of samples/month

CV	LTA Multipliers $e^{[z\sigma_n - 0.5\sigma_n^2]}$									
	95th Percentile					99th Percentile				
	n=1	n=2	n=4	n=10	n=30	n=1	n=2	n=4	n=10	n=30
0.1	1.17	1.12	1.08	1.06	1.03	1.25	1.18	1.12	1.08	1.04
0.2	1.36	1.25	1.17	1.12	1.06	1.55	1.37	1.25	1.16	1.09
0.3	1.55	1.38	1.26	1.18	1.09	1.90	1.59	1.40	1.24	1.13
0.4	1.75	1.52	1.36	1.25	1.12	2.27	1.83	1.55	1.33	1.18
0.5	1.95	1.66	1.45	1.31	1.16	2.68	2.09	1.72	1.42	1.23
0.6	2.13	1.80	1.55	1.36	1.19	3.11	2.37	1.90	1.52	1.28
0.7	2.31	1.94	1.65	1.45	1.22	3.56	2.66	2.08	1.62	1.33
0.8	2.48	2.07	1.75	1.52	1.26	4.01	2.96	2.27	1.73	1.39
0.9	2.64	2.20	1.85	1.59	1.29	4.46	3.28	2.48	1.84	1.44
1.0	2.78	2.33	1.95	1.66	1.33	4.90	3.59	2.68	1.96	1.50
1.1	2.91	2.45	2.04	1.73	1.36	5.34	3.91	2.90	2.07	1.56
1.2	3.03	2.56	2.13	1.80	1.39	5.76	4.23	3.11	2.19	1.62
1.3	3.13	2.67	2.23	1.87	1.43	6.17	4.55	3.34	2.32	1.68
1.4	3.23	2.77	2.31	1.94	1.47	6.56	4.86	3.56	2.45	1.74
1.5	3.31	2.86	2.40	2.00	1.50	6.93	5.17	3.78	2.58	1.80
1.6	3.38	2.95	2.48	2.07	1.54	7.29	5.47	4.01	2.71	1.87
1.7	3.45	3.03	2.56	2.14	1.57	7.63	5.77	4.23	2.84	1.93
1.8	3.51	3.10	2.64	2.20	1.61	7.95	6.06	4.46	2.98	2.00
1.9	3.56	3.17	2.71	2.27	1.64	8.26	6.34	4.68	3.12	2.07
2.0	3.60	3.23	2.78	2.33	1.68	8.55	6.61	4.90	3.26	2.14

ATTACHMENT 5

COOLING WATER INTAKE STRUCTURS 316(b) BTA ENTRAINMENT DETERMINATION

Connecticut
Department of Energy &
Environmental Protection

MARINE DISTRICT HEADQUARTERS

Memo

To: Oluwatoyin Fakilede

From: Bruce Williams - CTDEEP Fisheries Division

CC: Nic Giannetti, Matthew Goclowski

Date: January 29, 2024

Re: Electric Boat NPDES Renewal Application - 201006743

I have reviewed the NPDES permit renewal application and the proposed modifications to the existing cooling water intake structures (001, 002, 003, 004, 005, and 006) and the design of the new intake structures (007 and 008) will meet the current BTA entrainment standards and should significantly reduce the entrainment of aquatic organisms. The openings on the existing intake screens range from 3/16" to 3" with through screen velocities ranging from 0.58 fps to 2.64 fps. To be compliant with current standards the existing intake structures will be fitted with self-cleaning 2mm wedgewire or woven mesh screens and the new intake structures (007 and 008) will be fitted with self-cleaning 1mm wedgewire or woven mesh screens, all with flow through velocities less than 0.5 fps. The Fisheries Division has no entrainment concerns with the proposed intake structures.

P.O. Box 280
333 Ferry Road • Old Lyme, CT 06371
portal.ct.gov/DEEP

Final Determination & Recommendation

Date: September 11, 2024

To: Jennifer L. Perry, P.E., Chief,
Bureau of Materials Management & Compliance Assurance

Thru: Audra Dickson, Director, Water Permitting and Enforcement Division
Nick Giannetti, Supervisor, Industrial NPDES Permitting Program

From: Oluwatoyin Fakilede, Environmental Engineer 3, Industrial NPDES Permitting Program

Re: Final Determination & Recommendation to renew the NPDES Permit to Electric Boat Corporation (Permit No. CT0003824).

1.0 Permit Authorization & Public Participation

On August 1, 2024, the Department of Energy & Environmental Protection's (DEEP) Water Permitting & Enforcement Division (WPED) published notice of its tentative decision to renew the National Pollutant Discharge Elimination System Permit (NPDES) for Electric Boat Corporation in the New London Day newspaper. The notice of tentative decision as well as a draft copy of the permit and its fact sheet were concurrently posted on DEEP's website. The notice provided a thirty-day public comment period.

DEEP received no written comments.

The proposed final permit contains minor changes in the Sections 8 and 9 of the permit to reflect the Division's new platform for receiving noncompliance reports, consistent with the Division's updated permit template. The Permittee is in agreement with this change.

2.0 Proposed Changes in the Reissuance

The following changes were made from the previous permit.

- Section 3D of the permit includes a determination under Section 316(a) of the federal Water Pollution Control Act, which reads: "This permit includes determinations regarding Section 316(a) of the federal Water Pollution Control Act 33 U.S.C. § 1326(a) regarding the thermal component of the discharge, and compliance with this permit is sufficient to assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving waters."

- Section 3E and 3F of the permit includes a determination under Section 316(b) of the federal Water Pollution Control Act. Section 3E of the permit reads, "This permit includes the Commissioner's determination regarding the Permittee's Cooling Water Intake Structures in accordance with Section 316(b) of the federal Water Pollution Control Act, 33 U.S.C. § 1326(b) and Conn. Gen. Stat. § 22a-430. Compliance with this permit, specifically Sections 7 and 10, constitutes Best Technology Available."

- Section 3F of the permit reads "Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act."

- DSN 001 and DSN 002 were removed from the previous permit because of redundancy. These discharges and their associated monitoring requirements are covered under DSNs 001-A, 001-B, 001-C, 001-D, 001-E, 001-G, 001-H, 002-A, 002-B, 002-C, 002-D, 002-E, 002-F and 002-G.

- DSN 001F was removed because the discharge was comprised of dewatering wastewater associated with construction activities. The construction activity has ended, and EB no longer generates the previously permitted wastewater.

- DSN 012 was removed because the building that generated the wastewater has been demolished.

- The following new discharges were added: DSNs 001-G, 001-H, 002-D, 002-E, 002-F, 002-G, 003-2, 003-3, 003-4, 003-5, 003-6, 003-7, 003-8, 003-9, 003-10, 003-11, 003-12, 003-13, 004-2, 004-3, 004-4, 004-5, 004-6, 004-7, 004-8, 004-9, 004-10, 101-1, 101-2, 101-3, 101-4, 101-5, 101-6, 101-7, 101-8, 101-9, 102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-8, 102-9, 103-1, 103-2, 103-3, 103-4, 103-5, 104-1, 104-2, 104-3, 104-4, 104-5, 104-6, 104-7, 104-8, 104-9, 104-10, 105-1, 105-2, 105-3, 105-4, 106-1 and 106-2.

- Toxicity limits were changed based on the instream waste concentration.

- Previous water quality-based limits for copper, lead and zinc were changed based on flow data, frequency and duration of discharge, and the newly allocated zone of influence.

- Existing Intakes 001-T, 002-T, 003-T, 004-T, 005-T, 006-T and new Intakes 007-T and 008-T are now permitted in accordance with Section 316(b) of the Federal Clean Water Act.

- The pH ranges of all discharge were changed from 6.0 – 9.5 to 6.8 – 8.5 S.U. consistent with the water quality standards.

- Monitoring requirements for xylene and ethylbenzene were removed and replaced with polynuclear aromatic hydrocarbons (PAHs). EB has been monitoring for xylene and ethylbenzene for decades and they are mostly non-detect. PAHs are expected to be present in the wastewater because of diesel exhaust stack contact cooling water.

- Compliance schedules have been included in the permit for the following:

- Installation or retrofitting of intake structures to comply with Best Available Technology requirements under Section 316(b) of the federal Water Pollution Control Act;
- Schedule to achieve compliance with total residual oxidants effluent limitations in Table A (DSN 001A), Table B (DSN 001B), Table D (DSN 001D), Table E (DSN 001E), Table H (DSN 002A), Table J (DSN 002C), Table Q (DSN 007A) and the pH limits in Table R (DSN 007B) of Section 5 of the permit; and
- Requirement to conduct a thermal verification study for DSNs 003-1, 004-1, 101-1, 102-1, and 104-1 to model the thermal plume of the discharges and establish effluent limits (if necessary) in accordance with Section 316(a) of the federal Water Pollution Control Act.

- Section 7(D) requires the Permittee to develop a Copper Minimization Plan to minimize the discharge of copper from graving dock outfalls by implementing optimization techniques and identifying and implementing copper-free replacement(s) for the copper-based paint used on submarine hulls.

3.0 Revisions to the Proposed Final Permit After the Public Comment Period

1. The toxicity and noncompliance reporting requirements in Sections 8 and 9 of the draft permit have been updated to reflect the new online noncompliance reporting tools.

4.0 Recommendation

No petitions for hearing were received during the thirty-day comment period. The proposed final permit includes updated noncompliance reporting from the draft permit on which the tentative decision was made. The Permittee agreed with the proposed changes on September 4, 2024. Consistent with Section 22a-430-4(p)(5)(B)(ii) of the Regulations of Connecticut State Agencies and 40 Code of Federal Regulations Section 122.63, a new public notice is not required. WPED recommends issuance of the NPDES permit.