pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0036447**
Facility Type	**Industrial**	APS ID	**950311**
Major / Minor	**Minor**	Authorization ID	**1198078**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Naval Surface Warfare Center**	Facility Name	**Naval Surface Warfare Center**
Applicant Address	5001 South Broad Street	Facility Address	5001 South Broad Street
	Philadelphia, PA 19112-1403		Philadelphia, PA 19112
Applicant Contact	F Spencer	Facility Contact	Mark Donato
Applicant Phone	(215) 897-1315	Facility Phone	(215) 897-7607
Client ID	79662	Site ID	586505
SIC Code	8731	Municipality	Philadelphia City
SIC Description	Services - Commercial Physical Research	County	Philadelphia
Date Application Received	July 17, 2017	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Permit Renewal.

Summary of Review

The permittee has submitted a renewal application of their NPDES permit for wastewater and stormwater discharges to Schuylkill River - Navy Reserve Basin and Delaware River.

The facility Naval Surface Warfare Center (NSWC) is involved in operation of various type of ship turbines, engines and propulsion equipment on a temporary and as needed basis to evaluate operational performance characteristics Several buildings and areas are located on Former Navy Yard of Philadelphia.

The application also indicates increase of operational withdrawal and discharge requirements from permitted previously 36 MGD to 72 MGD from Outfall 001. The Delaware River Basin Commission (DRBC) has approved both withdrawal and discharge dockets for increased flow (D-2009-003 CP-2 and D-2009-004 CP-2, respectively). On February 26, 2018 the permittee requested the modification of restrictions imposed by discharge docket on NCCW discharges. DRBC has notified DEP final docket D-2009-004 CP-3 was approved on December 11, 2019.

The facility has identified 3 active wastewater and stormwater outfalls (001, 005 and 019).

The discharges include:
Outfall 001 (Internal Monitoring Point (IMP) 101 established previously) – continuous non-contact cooling water (NCCW) from Building 633 cooling water system to Navy Basin Reserve. The NSWC facility includes a once-through cooling loop that supplies NCCW to test systems located in Building 633. NCCW is supplied to the Building 633 cooling loop by three 50,000 gallon per minute (gpm) pumps located at the intake; however, only 2 of the pumps can be used at once and at an operational capacity of 75,000 gpm (108 mgd). NCCW used at Buildings 633 discharges back to the Navy Reserve Basin.

Outfall 005 (MP205) - continuous stormwater and fire pump relief water with water treatment chemicals into Delaware River. City potable water is used to supply the two fire pumps in Building 485. Flow from the pumps occurs during monthly testing

Approve	Deny	Signatures	Date
X		*Begay Omuralieva* Begay Omuralieva / Environmental Engineering Specialist	March 29, 2021
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	03/29/2021

Summary of Review

(1 hour) of the pump motors and during pump repair/maintenance. Water is dechlorinated prior to discharge to outfall. Samples are taken at the manhole downstream of IMP 205 and before Outfall 005. Design flow is 45,000 gallons during monthly testing and 22500 gpd during repair/maintenance operations;

Outfall 019 (IMP105) – continuous stormwater, intermittent cooling water (it was previously discharged through Outfall 005) the cooling water is discharged only when conducting maintenance to the newly installed cooling tower system associated with gas turbine generators in Building No.77H The total system capacity estimated at 550,000 gallons. The source of the cooling tower make-up water and fire pump test water is potable water from the Philadelphia Water Department. The cooling tower make-up water is pretreated with a rust inhibitor, biocide, and algaecide. The fire pump test water is dechlorinated prior to discharge to the River. The water is discharged to the river when maintenance to the cooling tower or system required.

Water withdrawals at the site:
The surface water withdrawal from the Navy Reserve Basin is described in detail in Docket No. D-2009-003-CP-2, which was approved March 15, 2017. The potable water supply in the project service area is provided by the Philadelphia Water Department. Domestic waste generated at the project facilities is also sent to the City of Philadelphia Water Department Southeast WWTP for treatment.

DEP conducted a site visit on September 11, 2017 (copy of the inspection report and related emails are attached)

NSWCCD - 09.11.2017 INSP.pdf

Based on inspection DEP and permit application evaluation form has requested the permittee to provide list of outfalls that discharge stormwater runoffs from the facility. On August 15, 2018 Mr. Santella – NSWC's Env. Engineer has provided storm sewer system drawings developed by the Philadelphia Water Department showing their facility's main buildings (BLDGs 633, 77H, and 87) and surrounding areas. Based on the submitted drawings DEP has included 7 Outfalls. The permittee has provided revised list of possible stormwater monitoring points (see attached email, dated April 5, 2019). Based on submission, DEP added following 3 locations:

1. For the Building 633 sampling point was approved as manhole on the corner of 15th street and Constitution Ave (S-007-49 is shown in maps) named Outfall 003;
2. For the Building 87 sampling point is chosen as first manhole upstream of S-007-21 named Outfall 004;
3. For the Building 77H same manhole that used for fire pump testing activities, it is known as Outfall 005.

To confirm the stormwater discharges DEP has requested sampling for those three representative locations along with updated Module 1 and list of chemical additives used at the facility. On August 3, 2020, the permittee has sent email with revised Module 1, chemical additives list with MSDS (p.7 and 10 of the application). Copy of the email is attached:

External NSWCPD NPDES Permit PA003

On October 5, 2020, permitted provided additional information for stormwater discharge changes near Building 633. 11 fuel oil tanks (Ten 15,000 gallons and one 20,000 gallons) have been permanently closed. Therefore, the areas that discharge to Outfall 003 will be included in the permit as not monitored (copy of the submission attached).

External RE RE Naval Surface Warfa

Based on the DRBC's final approved docket D-2009-004 CP-3:

The docket holder shall perform temperature monitoring and recording at the Lift Bridge within 48 hours prior to the commencement of any systems test that will result in a NCCW discharge greater than 24.0 mgd. During the time period June 1st through September 15th, if ambient average daily temperature at the Navy Reserve Basin Lift Bridge exceeds Zone 4 temperature criteria, the systems test is required to be delayed until the Lift Bridge monitoring indicates that Zone 4 temperature criteria is no longer being exceeded. If

Summary of Review

monitoring indicates that Zone 4 temperature criteria is not being exceeded, the test is permitted to commence and is permitted to run for the test's full duration. The Zone 4 temperature criteria is defined as 5°F above the average 24-hour temperature gradient displayed during the 1961-1966 period (see TABLE B-1 in the FINDINGS section of this docket), or a daily maximum temperature of 86°F. A record of daily minimum, daily maximum, and average daily temperature data at the Lift Bridge shall be maintained and shall be available at any time to the Commission if requested by the Executive Director. An annual report shall be submitted to the Commission detailing the Lift Bridge temperature data by January 31 of each year. During duration the operation of any docket's holders systems tests performed between June 1st and September 15th, if the ambient at the Navy Reserve Lift Bridge indicates that the ambient average daily temperature exceeds the Zone 4 temperature criteria, the docket holder is required to notify the DRBC Executive Director within ten days of the exceedance and report the results of the ambient monitoring to the DRBC within 30 days of the exceedance.

Therefore, following monitoring is proposed for Intake and In-stream Temperatures, along with Delta Temperature (see p. 7 of this factsheet). There is an additional special requirement is added to the permit's Part C.

All effluent limits and monitoring requirements are listed in pps. 7-10.

Act 14 Notification: Philadelphia Department of Public Health received a notice on Aril 18, 2017.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

IMP No.	101 (outfall 001)	Design Flow (MGD)	72 MGD
Latitude	39º 53' 42.32"	Longitude	-75º 10' 42.78"
Quad Name	Philadelphia	Quad Code	3907
Wastewater Description:	Non-contact cooling water from building 633 cooling water system		
Receiving Waters	Unnamed Tributary to Schuylkill River	Stream Code	00834
NHD Com ID	134387023	RMI	0.8
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-F	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Changes Since Last Permit Issuance: *increased discharge rate from 35 to 72 MGD is requested*

Other Comments: *DRBC approved both Dockets (withdrawal and discharge)*

Discharge, Receiving Waters and Water Supply Information

IMP No.	205 (outfall 005)	Flow	0.045 MGD and 0.0225MGD during repair/maintenance
Latitude	39º 52' 51.86"	Longitude	-75º 10' 9.97"
Quad Name	Philadelphia	Quad Code	3907
Wastewater Description:	Building 485's two fire pumps fire relief discharge (during monthly testing for 1 hour)		
Receiving Waters	Delaware River	Stream Code	00002
NHD Com ID	25615848	RMI	92.7
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-J	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	PCB,		
Source(s) of Impairment	Source Unknown,		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

Changes Since Last Permit Issuance: previously included in IMP 105 discharge.

Discharge, Receiving Waters and Water Supply Information			
IMP	105 (Outfall 019)	Design Flow (MGD)	0.55 MGD
Latitude	39º 52' 51.87"	Longitude	-75º 10' 1.75"
Quad Name	Philadelphia	Quad Code	3907
Wastewater Description:	Cooling water from the building 77H cooling water system		
Receiving Waters	Delaware River	Stream Code	00002
NHD Com ID	25615852	RMI	92.7
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.		Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	PCB,		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Delaware River Estuary PCB TMDLs

Changes Since Last Permit Issuance: Outfall 019 is also stormwater outfall. IMP 105 is discharge from Building 77H which was previously discharged to Outfall 005.

Compliance History

DMR Data for Outfall 005 (from September 1, 2019 to August 31, 2020)

Parameter	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19
Flow (MGD) Average Monthly	0.045	0.045	0.045	0.045	0.045		0.045	0.045	0.054	0.045		0.02475
pH (S.U.) Minimum	7.3	7.22	7.34	6.82	6.85		6.83	7.43	7.23	7.3		7.02
pH (S.U.) Maximum	7.37	7.24	7.36	7.21	6.98		7.58	7.7	7.3	7.4		7.5
TRC (mg/L) Average Monthly	0.045	0.065	0.02	0.035	0.02		0.07	0.04	0.02	0.01		0.023
TRC (mg/L) Instantaneous Maximum	0.06	0.08	0.03	0.05	0.03		0.12	0.06	0.02	0.01		0.04

DMR Data for Outfall 101 (from September 1, 2019 to August 31, 2020)

Parameter	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19
Flow (MGD) Average Monthly	68.93	52.41	50.25	64.17	39.74	54.05	52.85	43.78	25.58	33.15	45.06	54.61
pH (S.U.) Minimum	7.53	6.0	7.4	6.90	7.6	7.24	8.31	7.81	7.48	7.51	7.4	7.11
pH (S.U.) Maximum	8.17	8.2	8.0	6.98	8.02	8.71	8.45	8.08	7.76	7.67	7.98	7.66
Temperature (ºF) Instantaneous Maximum	86.85	87.76	82.53	71.02	57.51	50.93	40.58	42.8	43.3	60.78	74.77	76.12

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

IMP 101, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	2/month	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	2/month	Grab
Temperature (ºF) Instream Monitoring	XXX	XXX	Report Inst Min	Report Daily Max	XXX	Report	Continuous	I-S
Temperature (ºF) Effluent	XXX	XXX	XXX	XXX	XXX	110	Continuous	I-S
Temperature (ºF) Intake	XXX	XXX	XXX	XXX	XXX	Report	Continuous	I-S
Temperature, Delta (Discharge - Intake) (ºF) Effluent Net	XXX	XXX	XXX	XXX	XXX	3.0	Continuous	I-S

Compliance Sampling Location: at IMP 101 (inside the building 633)

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

IMP 105, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/month	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/month	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.2	1/month	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	XXX	110	1/month	I-S
Total Dissolved Solids	XXX	XXX	XXX	750	XXX	XXX	1/month	4-Hr Composite
Iron, Total	XXX	XXX	XXX	Report	XXX	XXX	1/month	4-Hr Composite

Compliance Sampling Location: at IMP 105 (manhole eastside of Building 77H)

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

IMP 205, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/month	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/month	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/month	Grab

Compliance Sampling Location: at IMP 105 (at IMP 205 while fire pumps discharging)

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 004 and 005, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: 004 inlet S-007-21
005 – IMP 205