Stormwater Pollution Prevention Plan

Naval Base Kitsap Keyport

May 2021

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Naval Base Kitsap Keyport

May 2021

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Plan Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

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Keyport SWPPP 2021 Record of Review and Amendments

All reviews and amendments to this plan shall be summarized here.

Date	Revision Number	Section(s)	Reason for Change	Revised By
May 2021	0	All	Update for 2021 MSGP	Chris Jorgensen

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AMHF ..... *Automated Materials Handling Facility*
ARL ..... *Applied Research Laboratory*
AST ..... *Aboveground Storage Tank*
AUL ..... *Authorized Use List*
BMP ..... *Best Management Practices*
BOD ..... *Biochemical Oxygen Demand*
BOSC ..... *Base Operating Service Contractor*
CAPA ..... *Corrective Action Preventive Action*
CAS ..... *Chemical Abstract Service*
CERCLA ..... *Comprehensive Environmental Response, Compensation, and Liability Act*
CFR ..... *Code of Federal Regulations*
COD ..... *Chemical Oxygen Demand*
CSCE ..... *Comprehensive Site Compliance Evaluation*
CSI ..... *Comprehensive Site Inspection*
CWA ..... *Clean Water Act*
DO ..... *Dissolved Oxygen*
DRMO ..... *Defense Reutilization Marketing Office*
EPA ..... *Environmental Protection Agency*
ESA ..... *Endangered Species Act*
FIC ..... *Facilities Incident Commander*
HAZMAT ..... *Hazardous Material*
HAZWOPER ..... *Hazardous Waste Operations*
HMC&M ..... *Hazardouse Materials Control and Managment*
ICP ..... *Integrated Contingency Plan*
ICRMP ..... *Integrated Cultural Resources Management Plan*
ID ..... *Illicit Discharge*
IDI ..... *Illicit Discharge Investigation*
INRMP ..... *Integrated Natural Resources Managment Plan*
IWTP ..... *Industrial Waste Treatment Plant*
MDMR ..... *MSGP Discharge Monitoring Report*
MSGP ..... *Multi-Sector General Permit*
NAVFAC ..... *Naval Facilities Engineering Command*
NFESC ..... *Naval Facilities Engineering Service Center*
NOI ..... *Notice of Intent*
NPDES ..... *National Pollution Discharge Elimination System*
NRC ..... *National Response Center*
NUWC ..... *Naval Undersea Warfare Center*
OHS ..... *Oil and Hazardous Substances*
OPNAVINST ..... *Office of the Chief of Naval Operations Instruction*
OSHA ..... *Occupational Safety and Health Administration*
OSOTC ..... *On-Scene Operations Team Coordinator*
PCB ..... *polychlorinated biphenyls*
POL ..... *Petroleum, Lubricants, and Oils*
RCRA ..... *Resource Conservation and Recovery Act*
ROICC ..... *Resident Officer in Charge of Construction*

SARA ..... *Superfund Amendments and Reauthoization Act*
SHPO ..... *State Historic Preservation Officer*
SIC ..... *Standard Industrial Classification*
SPCC ..... *Spill Prevention Control and Countermeasures*
SWPPP ..... *Stormwater Pollution Prevention Plan*
THPO ..... *Tribal Historic Preservation Officer*
TSCA ..... *Toxic Substance Control Act*
TSDF ..... *Treatment, Storage, and Disposal Facilitiy*
TSS ..... *Total Suspended Solids*
U.S. ..... *United States*
UST ..... *Underground Storage Tanks*
WAC ..... *Washington Administrative Code*
WDOE ..... *Washington Department of Ecology*
WQA ..... *Water Quality Act*
WQPE ..... *Water Quality Program Equipment*

1 Introduction

1.1 Purpose and Scope

This Stormwater Pollution Prevention Plan (SWPPP) was prepared for Naval Base Kitsap Keyport (NAVBASE Kitsap Keyport), Washington to comply with the terms and conditions of the Multi-Sector General Permit (MSGP), Authorization to Discharge Under the National Pollutant Discharge Elimination Systems (NPDES) for Stormwater Discharges Associated with Industrial Activity, United States Environmental Protection Agency (EPA) (2021).

The SWPPP identifies the sources and potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges associated with industrial activities at NAVBASE Kitsap Keyport. The plan includes practices and measures to minimize and control pollutants in stormwater discharges and establishes a schedule for implementing these practices. The plan also contains data that describes the existing stormwater system, water quality sampling results, and an overview of related water and materials management plans.

Naval Undersea Warfare Center (NUWC) Division Keyport developed the original SWPPP that was in use at NAVBASE Kitsap Keyport. NAVBASE Kitsap subsequently took over responsibility for base infrastructure and associated environmental requirements. While the permitting responsibilities have shifted to NAVBASE Kitsap, the majority of the industrial processes that are addressed in this plan are performed by NUWC Division Keyport.

The NAVBASE Kitsap Keyport SWPPP was originally developed through fieldwork and investigations that took place in the months from September 1995 to August 1996. During this time, field work included: drain verification and mapping, labeling of system components, investigations into the sources of illicit discharges to the stormwater system, stormwater discharge sampling, and base-wide site assessments for stormwater management.

1.2 Document Organization

This document is organized into eight sections. Section 1 provides general information regarding this document including a brief summary of the regulatory history of NPDES industrial stormwater permits and specific information regarding EPA's MSGP for industrial activities. In addition, a comparison to other existing environmental management plans in place at NAVBASE Kitsap Keyport is made to identify overlaps in requirements between the various plans. SWPPP compliance requirements are outlined including those for plan implementation, revisions, renewals, and reporting.

Section 2 describes the site characteristics of NAVBASE Kitsap Keyport that affect rainfall runoff including brief descriptions of the hydro-meteorological and topographic conditions and a brief land use history. Existing natural and manmade storm drainage features are described. Stormwater outfalls and their corresponding drainage basins are identified including those associated with industrial activities.

Section 3 presents the non-stormwater-discharge investigation conducted for NAVBASE Kitsap Keyport along with a plan for illicit discharge elimination and prevention.

Section 4 presents site-specific pollution prevention assessments for individual or groups of industrial facilities identified at NAVBASE Kitsap Keyport. The assessments include pollutant

source identification and a description of existing, alternative, and new Best Management Practices (BMPs) for each industrial facility.

Section 5 presents existing stormwater-characterization data for NAVBASE Kitsap Keyport. Future monitoring and reporting requirements for stormwater sampling are discussed in detail.

Section 6 lists facilities inspections.

Section 7 describes corrective action and recordkeeping requirements.

Section 8 identifies the SWPPP references.

There are 16 Appendices in this SWPPP.

- Appendix A provides a set of oversize drawings, including the SWPPP base maps.
- Appendix B provides a glossary of terms.
- Appendix C provides documentation of permit eligibility with respect to protection of endangered species, critical habitat, and historic properties.
- Appendix D provides a copy of the Notice of Intent (NOI) filed for NAVBASE Kitsap Keyport to comply with the MSGP.
- Appendix E provides a basic description of stormwater management for construction.
- Appendix F provides an index of BMPs potentially applicable to the NAVBASE Kitsap Keyport Stormwater Management Program. Appendix F includes all existing and new BMPs discussed in Section 6, as well as other BMPs that may be used in the future as the program is implemented.
- Appendix G provides existing stormwater characterization data for NAVBASE Kitsap Keyport.
- Appendix H provides Stormwater Quality Visual Examination Report and Discharge Monitoring Report forms and instructions.
- Appendix I provides facility inspection reports.
- Appendix J provides a record of spills.
- Appendix K provides a base-wide listing of hazardous materials.
- Appendix L provides employee training records.
- Appendix M is the 2021 MSGP.
- Appendix N provides Corrective Action Reports.
- Appendix O provides the stormwater monitoring Standard Operating Procedures.
- Appendix P provides the Illicit Discharge Investigation performed in 2008.

1.3 Regulatory Background

1.3.1 Federal Stormwater Regulations

The 1972 amendments to the Federal Water Pollution Control Act [referred to as the Clean Water Act (CWA)] stipulated that the discharge of any pollutant to surface waters without a NPDES permit was unlawful. Between 1972 and 1987, national efforts to improve water quality focused on reducing pollutants of industrial process wastewater and municipal sewage. The reauthorization of the CWA in 1987 with the passage of the Water Quality Act (WQA), established a framework for regulating municipal and industrial stormwater discharges under the NPDES permit program. Final federal regulations regarding the EPA's NPDES stormwater permit program were published in the Federal Register on November 16, 1990.

Stormwater discharges associated with industrial activity have been divided into two categories: those associated with industrial activity except construction activity and those associated with industrial activity from construction activity. Permit options available for industrial activities excluding construction activity are described below.

1.3.1.1 Permit Application Options for Non-Construction Industrial Activity

The stormwater regulation allows two permit application options for stormwater discharges associated with industrial activity except construction activity. These include an application for an individual NPDES stormwater permit and a NOI to comply with a general permit, including the Multi-Sector general permit. Each of these application options is discussed briefly in the following paragraphs.

Individual NPDES stormwater permits are issued to a specific facility for stormwater discharges related to industrial activity. In most instances, the permit is tailored to meet the discharge characteristics of the facility and/or special requirements of the receiving waters. Individual NPDES stormwater permits are issued by states that have been delegated NPDES permitting authority or by the EPA in states that do not have this authority.

The Multi-Sector general permit for industrial activities is the result of the group permitting process initiated by EPA in the late 1980s. The permit was originally issued until September 29, 1995. EPA reissued the permit in 2000, 2008, 2015 and most recently in March 2021.

1.3.2 Navy Stormwater Policy

Requirements and policies regarding stormwater discharges for Navy facilities are stipulated in the Department of the Navy's Environmental and Natural Resources Program Manual, Office of the Chief of Naval Operations Instruction (OPNAVINST) 5090.1D (U.S. Navy 2014). These requirements, which are a part of the Clean Water Ashore Program, state that Navy facilities must comply with all substantive and procedural requirements applicable to point and non-point sources of pollution as required by Executive Order 12088 and the CWA. Navy policy regarding point-source stormwater discharges from Navy facilities is for these discharges to meet all applicable federal, state, or local requirements, including control requirements for toxic and non-conventional pollutants. The Navy's policy on stormwater management and non-point pollution-source control requires commands to ensure that all activities comply with stormwater management and pollution prevention requirements, as stipulated in permits under which the activity is covered.

Further, Navy facilities must comply with all requirements of federal, state, interstate, and local laws and regulations respecting the control and abatement of water pollution in the same manner and to the same extent as any non-governmental entity. Navy policy also states that the discharge of any pollutant that does not comply with effluent standards or other procedural requirements is unlawful.

1.3.3 Industrial Stormwater Compliance Strategy at NAVBASE Kitsap Keyport

The state of Washington is an NPDES-delegated state with general permitting authority. However, permitting for federal facilities in the state of Washington was retained by the EPA. Federal facilities in Washington are eligible for coverage under an individual NPDES permit or the MSGP. Administration of these permits is by EPA, Region 10, Water Management Division (WD-134), Stormwater Staff located at the Seattle, Washington office.

NAVBASE Kitsap Keyport is covering stormwater discharges from industrial activities under the MSGP. Coverage for the current permit term was granted by EPA beginning on 17 August 2017 under permit tracking number WAR05F003. An NOI will also be submitted on to obtain coverage under the reissued 2021 Multi-Sector General Permit. Copies of the NOI form are provided in Appendix D.

In order to comply with the construction general permit, an NOI must also be submitted for all construction activities at NAVBASE Kitsap Keyport that will disturb more than one acre of land. Compliance with that permit requires the development of a site-specific stormwater management plan not related to this SWPPP document. Please refer to the construction general permit for additional guidance and requirements. A summary of Best Management Practices applicable to the stormwater management requirements of the construction general permit is provided as Appendix F.

1.3.4 Permit Eligibility Determination

The 2021 MSGP requires that stormwater discharges, allowable non-stormwater discharges, and discharge related activities are protective of endangered species, critical habitat, and historic properties. Documentation of permit eligibility with respect to protection of endangered species, critical habitat, and historic properties is contained in Appendix C.

1.4 Comparison to Other Environmental Management Plans

Various environmental plans have been written for NAVBASE Kitsap Keyport. The Navy is required to prepare plans that relate primarily to the prevention and management of spills and leaks of hazardous materials and minimizing hazardous waste generation. The plans that address these issues are the Oil and Hazardous Substances (OHS) Spill Plan, Spill Prevention Control and Countermeasures (SPCC) Plan, Tank Management Plan, Pollution Prevention Plan, and Hazardous Materials Control and Management (HMC&M) Plan. These plans contain information and procedures for station personnel to use in both the prevention and reaction aspects of spill control and material handling.

1.4.1 Spill Prevention Control and Countermeasure Plan

The most recent SPCC Plan for NAVBASE Kitsap Keyport was signed in April 2021. The SPCC Plan was prepared in accordance with planning standards of Title 40 of the Code of Federal Regulations (CFR), Section 112 (40 CFR 112) and revisions to 40 CFR 112 as published

in the July 17, 2002 Federal Register. The plan provides information regarding existing activities related to oil pollution control including equipment testing, required inspections, oil handling procedures, and security measures. The SPCC also outlines current training programs and requirements related to fuel oil and hazardous materials.

The requirements of the SPCC Plan are compatible with the goals of the SWPPP because several procedures, practices, and measures that are helpful in reducing the potential for stormwater pollution are already in place or recommended/required through the SPCC plan. These include: periodic inspection and testing of aboveground storage tanks (ASTs) and underground storage tanks (USTs); secondary containment berms for bulk fuel storage tanks and fuel truck loading racks; third party monitoring of fuel transfers; carrying of absorbent materials by fuel truck operators; inspection and maintenance programs for fuel transfer and storage equipment; facility security; training programs and requirements; and standard operating procedures for drum and small container handling, oil tank containment area draining operations, fuel and hazardous substance emergencies, and loading and unloading procedures for fuel transfer.

Existing environmental training programs provided under other environmental management plans at NAVBASE Kitsap Keyport are summarized in Table 1-1.

Stormwater pollution control BMPs presently either in place and/or recommended by the SPCC Plan are summarized in Table 1-2.

1.4.2 Integrated Contingency Plan

NAVBASE Kitsap has developed an OHS Integrated Contingency Plan (ICP), which is part of the Navy's region-wide spill response plan. The plan was updated in June 2016. The purpose of the ICP is to provide specific direction to be followed by Navy personnel to allow prompt, efficient coordination and response to an OHS spill. All spills at NAVBASE Kitsap Keyport are reported to the Spill Response Team, which implements the ICP to contain and clean up the spill. Potential stormwater pollution BMPs that are in place at NAVBASE Kitsap Keyport and/or are required as a result of the program include: keeping records of all spills and leaks of toxic or hazardous materials; providing adequate spill control/containment material for the control of spills and leaks; properly disposing of any significant materials or contaminated waste; training of personnel for proper storage, use, cleanup, and disposal of materials; and recordkeeping practices. These are summarized in Table 1-2.

1.4.3 Hazardous Materials Control and Management Plan

An HMC&M Plan was prepared to establish policy, procedures, and requirements for life-cycle control of hazardous material at NAVBASE Kitsap Keyport in accordance with the requirements of OPNAVINST 4110.2, as well as 29 CFR 1910 - 1200, and the Toxic Substance Control Act (TSCA). The HMC&M Plan describes the material management process and identifies sources of information for all hazardous material management at NAVBASE Kitsap Keyport. As part of this system, the HMC&M Committee compiled a hazardous substance authorized use list. This list serves as the basis for monitoring and controlling all incoming hazardous material and functions as a tool for setting realistic goals on hazardous substance procurement by tracking hazardous material at specific locations, including usage and stock quantities. The plan also identifies best management practices that are in place at NAVBASE Kitsap Keyport and/or are required as a result of the program. These include labeling of all containers, keeping absorbent material on hand in case of spills, properly storing containers, and properly disposing of any significant materials and contaminated waste. The BMPs required under the HMC&M Plan are summarized in Table 1-2.

The HMC&M Training Program described in the plan provides personnel training on hazardous material management, worker right-to-know, hazardous waste originators, hazardous material awareness, and specific hazards. Existing environmental training programs conducted at NAVBASE Kitsap Keyport required/recommended by other environmental management plans are summarized in Table 1-1.

Table 1-1: Summary of Training Programs

Title	Personnel Who Receive Training	Program Provided Under
Hazardous Materials Management	Upper Management (Division Managers and higher)	HMC&M
Worker Right-to-Know	Supervisors and Employees	HMC&M
Hazardous Waste Originators	Supervisors and Employees, Non-Supervisory Personnel*	HMC&M
Hazardous Material Awareness	Non-Supervisory Personnel*	HMC&M
Specific Hazard	Non-Supervisory Personnel*	HMC&M
Courses Relating to HMC&M	Collateral Duty and Full Time Safety and Occupational Health Personnel	HMC&M
Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations (HAZWOPER) 40-hour Training	All Hazardous Waste Operations Personnel	HMC&M
Annual OSHA HAZWOPER 8-hour Refresher	All Hazardous Waste Operations Personnel	HMC&M
Emergency Response Contingency Training	All Emergency Spill Response Personnel	HMC&M
Initial SPCC Training for New Employees and Quarterly Updates	All employees of NAVBASE Kitsap Keyport and its Base Operating Service Contractor (BOSC) whose jobs involve the storage or handling of petroleum products	SPCC
Naval Facilities Engineering Service Center (NFESC) Waterborne Incident Cleanup Training (or equivalent)	Waterborne Incident Response Team Members	OPLAN
24-hour Site-Specific Training for Waterborne Response	Waterborne Incident Response Team Members	OPLAN
24-hour Annual Waterborne Refresher Training	Waterborne Incident Response Team Members	OPLAN
40-hour Initial Off-Site Training plus on-the-job training ($\geq$ 40 hours)	Land-Based Incident Response Team Members, Facility Incident Commander (FIC)	OPLAN
24-hour Annual Refresher Training for Land-Based Response	Land-Based Incident Response Team Members, FIC	OPLAN
8-hour Annual First Responder Training	First Responders	OPLAN
NFESC On-Scene Commanders Course (or equivalent)	FIC, On-Scene Operations Team Coordinator (OSOTC), and Instructors	OPLAN
Instructor Certification from outside sources	FIC, On-Scene OSOTC, and Instructors	OPLAN
8-hour Refresher covering latest advances, technologies in incident response, and related topics	FIC, On-Scene OSOTC, and Instructors	OPLAN

* For personnel occupationally involved with the use and potential exposure to hazardous materials.
HMC&M: Hazardous Material Control and Management Plan
SPCC: Spill Prevention Control and Countermeasures Plan
OPLAN: Oil/Hazardous Substance Spill Contingency Annex of NAVBASE Kitsap Keyport Operations Plan.

Table 1.2: Stormwater BMPs in Place and/or Required

BMP Designator	BMP Title	Management Plan
001	Label all drums, cans, containers, tanks, and valves	HMC&M
002	Restrict access to area and equipment	SPCC
006	Control spills	SPCC
006A	Keep records of all spills and leaks of toxic or hazardous materials	SPCC, SCP
009	Do not pour liquids wastes into storm drain	SPCC
010	Keep absorbent material on hand	SPCC, HMC&M, SCP
014A	Inspect water accumulated in containment area for oil sheen prior to discharge	SPCC
016C	Regularly inspect storage areas for leaking materials	SPCC
017	Limit significant materials inventory	HMC&M
017A	Keep inventory of significant materials	HMC&M
031	Conduct refresher courses in operating and safety procedures	SPCC
039A	Recycle or properly dispose of all used vehicle fluids	HMC&M
050	Substitute non-toxic or less-toxic cleaning solvents	HMC&M
051	Use solvents efficiently	HMC&M
053	Protect storage containers from being damaged by vehicles	SPCC
054	Properly store containers	SPCC, HMC&M
057A	Properly dispose of any significant materials or contaminated waste	HMC&M, SCP
061	Employ proper handling procedures to transport materials and waste	SPCC
062	Provide overfill protection	SPCC
064	Monitor major fueling operations	SPCC
065	Provide absorbent booms in unbermed fueling areas	SPCC
066	Eliminate topping off tanks	SPCC
070	Lock fuel tanks when not in use or on standby	SPCC
071	Keep tanks, piping, and valves in good condition	SPCC
072	Protect tanks from being damaged by vehicles	SPCC
073	Protect fill pipe from being damaged by vehicles	SPCC
075	Provide secondary containment for ASTs	SPCC
094	Establish integrated pest control	HMC&M
095	Conduct pesticide operations under the supervision of licensed applicator	HMC&M
111	Regularly inspect and test equipment	SPCC
135	Provide good housekeeping practices to minimize pollutants exposure to stormwater	SPCC
144	Train employees on proper loading/unloading techniques	SPCC
161	Train employees on proper filling and transfer procedures	SPCC
192	Label & track the recycling of waste material (i.e. used oil, spent solvents, batteries)	HMC&M
203	Educate personnel for proper storage, use, cleanup, and disposal of materials	SPCC, HMC&M, SCP
209	Use appropriate material transfer procedures, including spill prevention and containment procedures	SPCC
216	Keep records of required inspections, maintenance activities, employee training sessions, and chemical application rates and locations	SPCC, HMC&M, SCP

AST= Aboveground Storage Tank.
HMC&M= Hazardous Materials Control and Management.
SPCC= Spill Prevention, Control and Countermeasure
SCP= Spill Contingency Plan.

1.5 Site Description

NAVBASE Kitsap Keyport occupies just over 343 acres on a small peninsula bordering Liberty Bay, an inlet of Puget Sound. A mix of Pre-World War II, World War II, post-war, and modern facilities characterizes the base.

NUWC Division Keyport operates the majority of the industrial functions at NAVBASE Kitsap Keyport.

NUWC Division Keyport supports the mission of the Naval Undersea Warfare Center by providing [redacted]

Industrial operations at NAVBASE Kitsap Keyport are primarily concentrated in two areas. The heart of the activity is the Industrial Core. Major operations in the Core [redacted]

A second area of operational activity is located in the "secondary industrial district" south of the main gate. This area has evolved in more recent years to accommodat[redacted] that cannot be accommodated in the Industrial Core.

1.6 SWPPP Compliance Requirements

A number of ongoing activities related to the SWPPP are required for compliance under the MSGP. These SWPPP compliance requirements are summarized in Table 1-3.

Table 1-3: Summary of SWPPP Compliance Requirements

SWPPP Compliance Requirement	SWPPP Section	Permit Part
Form a stormwater pollution prevention team.	1.6.1	6.2.1
Implement control measures/BMP Plan.	4	2
Perform stormwater sampling and prepare reports.	5	4
Prepare and submit reports of releases of hazardous materials or oil in excess of reportable quantities.	1.6.2	2.1.2.4
Complete facility visual inspections and document.	6.1	3.1
Complete maintenance and document.	7.4	2.1.2.3, 6.5
Complete employee training and document.	7.4	2.1.2.8
Submit Annual Report.	6.3	7.4
Update SWPPP when a change in industrial facilities occurs or if current SWPPP is ineffective.	1.6.4 and 7.1	5.1
Implement and Document Corrective Actions	7.2	5
Retain SWPPP reports and records on-site for three years. Corrective actions more than 3 years old should be removed from SWPPP if they are completed.	1.6.5	7.7
Ensure all reports are signed by an appropriate authority.	1.6.6	B.11

The permit also requires maintaining records of various compliance activities. These records include facility visual inspection, maintenance records, and employee training. Recordkeeping requirements are summarized in Section 7.

1.6.1 Pollution Prevention Team

As required by the 2021 MSGP, NAVBASE Kitsap Keyport must, in this SWPPP, designate and identify a specific individual or group of individuals within NAVBASE Kitsap Keyport that are members of a stormwater pollution prevention team. The stormwater pollution prevention team is responsible for overseeing development of the SWPPP, any modifications to it, and for implementing and maintaining control measures and taking corrective actions when required. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP. The responsibilities of each team member should be clearly identified, and the responsibilities of the team should address all compliance aspects of this SWPPP, including the implementation plan, comprehensive site inspections, revisions, updates, and renewals. The Pollution Prevention Team for NAVBASE Kitsap Keyport is organized as follows:

- NAVBASE Kitsap Stormwater Program Manager
  - Implement and coordinate overall SWPPP program
  - Ensure that BMPs are implemented
  - Visually examine and monitor outfalls (discharges) and submit reports
  - Complete facility visual inspections and record results
  - Coordinate updates to the facility SWPPP
  - Ensure annual Comprehensive Site Inspections are performed and documented
  - Complete and record NAVBASE Kitsap staff employee training
- NAVBASE Kitsap Environmental Director
  - Program funding for compliance with SWPPP and stormwater permit requirements including upgrades and corrective actions needed for NAVBASE Kitsap facilities
- NUWC Division Keyport Environmental Compliance Branch Director
  - Manage program funding for NUWC Keyport SWPPP responsibilities including funding of corrective actions and upgrades required for NUWC processes
- NUWC Division Keyport Internal Auditor
  - Perform inspections of NUWC spaces annually as required by Navy procedures
- NUWC Division Keyport Environmental Compliance Branch Stormwater Point of Contact
  - Enter significant SWPPP discrepancies found by the NAVBASE Kitsap stormwater inspections into the Corrective Action Preventive Action (CAPA) database and track corrective and preventative actions until implemented and closed
  - Coordinate with NAVBASE Kitsap Stormwater Program Manager to implement applicable SWPPP BMPs for NUWC Keyport processes at NAVBASE Kitsap Keyport

  - Provide appropriate SWPPP training for NUWC Keyport personnel
- NUWC Division Keyport Environmental Compliance Branch Hazardous Waste Program Manager
  - Track and report all spills
- Naval Facilities Engineering Command (NAVFAC) Northwest Public Works Officer
  - Ensure maintenance and inspection of equipment is performed and documented (e.g., stormwater conveyance system and oil/water separators)
  - Program funding for routine inspection and maintenance of stormwater system and associated structural stormwater pollution control facilities
- NAVFAC Northwest Stormwater Program Manager
  - Provide assistance in performing SWPPP updates as directed by the NAVBASE Kitsap Stormwater Program Manager
  - Provide regulatory and technical assistance as requested
- Fleet Logistics Center, Keyport Site Manager
  - Coordinate with NAVBASE Kitsap Stormwater Program Manager to implement applicable SWPPP BMPs for Fleet Logistics Center Keyport processes at NAVBASE Kitsap Keyport
- Raytheon Environmental Point of Contact
  - Coordinate with NAVBASE Kitsap Stormwater Program Manager to implement applicable SWPPP BMPs for Raytheon Keyport processes at NAVBASE Kitsap Keyport
- Defense Reutilization Marketing Office (DRMO), Keyport Site Manager
  - Coordinate with NAVBASE Kitsap Stormwater Program Manager to implement applicable SWPPP BMPs for DRMO processes at NAVBASE Kitsap Keyport

1.6.2 Spill Response Requirements

In the event of a spill of oil or hazardous substances, immediately notify Regional Dispatch

Regional Dispatch Center: 360-396-4444

1.6.2.1 Reporting Requirements for Releases in Excess of Reportable Quantities

Reporting requirements of the 2021 MSGP for releases of hazardous substances or oil are summarized below. A full description of these requirements is provided in Part 2.1.2.4 of the 2021 MSGP.

1.6.2.2 SWPPP Modification

Within 14 calendar days of knowledge of a release of a reportable quantity of hazardous substance, the SWPPP must be modified to include the following:

- a description of the release including the type and amount of material released,
- date and time of the release,
- circumstances leading to the release, and
- actions taken to identify and implement measures to prevent the reoccurrence of such releases, and to respond to such releases in the future. (See Part 5.3 of the MSGP.)

1.6.2.3 Reporting Requirements Under 40 CFR

The requirements of this SWPPP do not relieve the Navy from the reporting requirements of 40 CFR 117 and 40 CFR 302. The Navy is required to notify the National Response Center (NRC) at 800-424-8802 in accordance with the requirements of 40 CFR 117 and 40 CFR 302 as soon as a discharge is discovered. (See Part 2.1.2.4 of the MSGP.)

1.6.3 Plan Availability

This SWPPP will be kept on-site at NAVBASE Kitsap by the NAVBASE Kitsap Stormwater Program Manager and will be made available upon request to the EPA regional director or an authorized representative. The EPA may notify the Navy at any time that this SWPPP does not meet one or more of the minimum requirements of the MSGP. A notification of this type identifies the provisions of the Permit not being met by the SWPPP and identifies the provisions of the plan requiring modification. The required revisions will be made to the SWPPP within 14 days.

Public access to SWPPP information is required by the 2021 MSGP Part 6.4. NAVBASE Kitsap Keyport provided a URL in the NOI of where this SWPPP can be found. This SWPPP must be maintained at this URL in order to comply with the public availability requirement.

The NAVBASE Kitsap Keyport SWPPP is found at the following URL: http://go.usa.gov/kQ6e. The publicly available SWPPP has redactions of Restricted Information.

1.6.4 Revisions and Updates

This SWPPP will be amended whenever there is a change in design, construction, operation, or maintenance of the facilities at NAVBASE Kitsap Keyport covered by this plan or the addition of a new industrial facility that has a significant effect on the potential for the discharge of pollutants to the waters of the United States. In addition, this SWPPP will be amended if it proves to be ineffective in eliminating or significantly minimizing pollutants from the sources identified or in otherwise achieving the general objectives of controlling pollutants in stormwater associated with industrial activity. (See Part 6.3 of 2021 MSGP)

1.6.5 Retention of Records

Requirements for retention of SWPPP records are identified in Part 7.7 of the 2021 MSGP. In general, the Navy is required to retain this SWPPP, records of all monitoring information, copies of all reports required by the SWPPP, and records of all data used to complete the NOI until at least three years after coverage under the permit is terminated.

1.6.6 Signatory Requirements

As required by the permit, this SWPPP and all reports required by this SWPPP shall be signed by a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes (1) the chief executive officer of the agency, (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency, or a duly authorized representative of (1) or (2). The signature authority can be delegated to a duly authorized representative. If the authority is delegated, a signed, dated copy of the delegation authority must be included with the SWPPP. All documents shall have the following certification.

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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2 Description of Stormwater Drainage

2.1 Site Characteristics

Site characteristics of NAVBASE Kitsap Keyport are described to provide a framework for understanding its surface hydrologic features. Included is a description of the base's location, climate, and topography.

2.1.1 Location

NAVBASE Kitsap Keyport is located on the eastern shore of the Kitsap peninsula. The facility borders Puget Sound at the intersection of Liberty Bay and the Port Orchard Narrows approximately 3 miles southeast of the town of Poulsbo. A general location map is included at the end of this section as Figure 2-1. A detailed site plan for NAVBASE Kitsap Keyport is provided in Figure A-1, Appendix A.

2.1.2 Climate

The climate of the Puget Sound area is mild due to the proximity of the Pacific Ocean, with cool summers, mild winters, moist air, and a small temperature range. Most weather systems move in from the west-southwest off the ocean. Midsummer is accurately characterized as a dry season, with supplemental water needed for vigorous landscape growth.

Conversely, winter is a rainy season, generally starting in late October and peaking in midwinter. Average daytime temperatures are in the 40s and nighttime lows in the 30s, with occasional freezing. Snowfall is generally light and seldom exceeds three to six inches in accumulation. Winter storms generally flow into the Puget Sound around the Olympics from the south. Mean annual precipitation is 36 inches in the Keyport area. Average relative humidity is 76 percent.

2.1.3 Topography and Receiving Waters

NAVBASE Kitsap Keyport shares a low-lying peninsula with the town of Keyport. Elevations range from less than 30 feet throughout the industrial area to a ridge of 150-160 feet in the southern area. Slopes are characteristically of low gradients, generally less than 5%, except for the higher ridge, which drops steeply to the lagoon and Liberty Bay.

Liberty Bay wraps around the north and east sides of the Keyport peninsula. The bay shorelines of the NAVBASE Kitsap Keyport are relatively stable and are heavily protected by seawalls and riprap.

The lagoon on the south side of the major developed area is a causeway-impounded body of shallow brackish water, held at a more or less constant level by a weir under the causeway bridge. The weir allows high tides to replenish the water level without a complete flushing of the brackish water normally impounded. Fresh water flows into the lagoon from a creek to the southwest, from watershed surface and subsurface flows, and storm sewer outlets.

The tide flats on the west side of the base have been partially filled, fenced, and generally heavily impacted by past use. The environmental value of the flats has been significantly diminished by these past actions.

The marshy area on the western edge of the base, across from the tidal flats, is an identified wetland. It is fed by the drainage areas along State Route 303 and also lateral water percolation

through the soil from surface runoff and tidal influx. Much of the original marsh was filled in the past.

2.2 Description of Stormwater Drainage Facilities

NAVBASE Kitsap Keyport storm drainage in the developed areas is collected by a gravity system that discharges at numerous locations into Liberty Bay and the Lagoon at the southeast end. The stormwater system at NAVBASE Kitsap Keyport is an old system and historically many modifications were undocumented. Because of this, several outfalls placed around its perimeter are not connected and no longer receive flow. All of the outfalls have been cataloged as part of the initial SWPPP preparation and approximately 115 piped outfalls were identified. The number of actual outfalls that have been identified as connecting to the stormwater system is 53. The stormwater system contains approximately 20,000 feet of piping that feeds these outfalls. There are also an estimated 500 catch basins on the base property that are attached to the stormwater system. Finally, there are 10 locations (surface and hard-piped) where the base receives stormwater from upland areas (Figure A-1, Appendix A).

Stormwater runoff from NAVBASE Kitsap Keyport ultimately flows into Liberty Bay. Stormwater runoff flows overland through streams and wetlands or within underground drainage systems that outfall to the shallow lagoon or the bay. There are two large oil/water separators located at the base. One separator is located at the retention basin outside Building 1051, [redacted]. Stormwater leaves the retention basin through the oil/water separator and flows to the shallow lagoon through a large outfall. The other oil/water separator is located at Building 93, [redacted]. There are three small oil/water separators associated with the 792 paved lot and fifteen small oil/water separators throughout the base attached to electrical transformer pad drainage. Runoff from the DRMO lot is all directed into two large filterra vaults. Other than retention of sediment in catch basin sumps, all other stormwater leaves the base without treatment.

There are several upland areas that serve as sources for stormwater infalls onto Navy property. The base lies at the bottom of a natural drainage basin for the Keyport area and receives run-on from the South, North, and West. Stormwater from agricultural areas, livestock areas, and residential areas flows onto Navy property. Also up gradient from Keyport are several Kitsap County sewage lift stations that in the event of overflow could ultimately discharge onto Navy property.

2.3 Drainage Basin Delineation

The NAVBASE Kitsap Keyport property can be divided into seven distinct drainage areas (KDB01 - KDB05, KDB08, KDB09) that feed three different bodies of water. The original SWPPP included two additional drainage basins (KDB06 and KDB07) that were deleted in the 2006 SWPPP update. The land area of these two drainage basins is now included in KDB04. The Shallow Lagoon and Liberty Bay receive stormwater runoff from the base.

Drainage basin boundaries were identified by using facility topographic maps and through visual observations of stormwater flow. The drainage basin maps are enclosed as Appendix A in this document. Drainage basin maps include basin boundaries, surface topography, basin outfalls, any stormwater conveyance systems, industrial facilities, and non-point sources of pollution if present. Table 2-1 provides a summary of the drainage basins, including size, impervious cover, receiving water, and location for each basin.

The majority of the drainage basins at NAVBASE Kitsap Keyport flow to point-source outfalls such as a stream or pipe. Several industrial facilities are located adjacent to Liberty Bay and their runoff flows directly to the bay. The following discussion provides a description of the drainage basins, their locations, their drainage patterns, and the types of stormwater conveyance system located in the basin. Drainage from some facilities does not always reach a basin outfall. Stormwater runoff from these facilities infiltrates into the ground before reaching the basin outfalls. Detailed drainage basin maps are provided in Appendix A.

2.3.1 Drainage Basin 01

Drainage Basin 01 (KDB01) is located in the northwestern portion of the industrial area. The drainage-basin stormwater flows to Liberty Bay and also to wetlands located adjacent to the town of Keyport. The topography in the basin slopes generally from south to north with some runoff to the west. The drainage basin contains 40-65% impervious surfaces with the other portion being grassy areas. The basin is further divided in sub-basins 01-1 through 01-3. KDB01 contains support buildings and living quarters; it has no permit-regulated activities. Located in the drainage basin [redacted]. Natural resources in the basin include wetlands and shoreline areas.

2.3.2 Drainage Basin 02

Drainage Basin 02 (KDB02) is located in the northeastern portion of the industrial area. The drainage-basin stormwater flows to Liberty Bay exclusively. The topography in the basin slopes generally from south to north with some runoff to the east. The drainage basin contains a high percentage of impervious surfaces (>65%) and is occupied primarily with industrial workshops. Much of KDB02 is built on very pervious fill material that allows for rapid inflow and outflow of subsurface waters with the change in tidal levels. The basin is further divided into sub-basins 02-1 through 02-8. Natural resources in the basin include the shoreline area.

2.3.3 Drainage Basin 03

Drainage Basin 03 (KDB03) is located in the southeastern portion of the industrial area. The drainage-basin stormwater runoff only flows to Liberty Bay. The topography in this basin slopes generally north to south with some runoff to the east. The drainage basin contains a medium percentage of impervious surfaces (40-65%) and is occupied primarily with industrial workshops and some office areas. The basin is divided into sub-basins 03-1 through 03-8. Natural resources in the basin include the shoreline area.

2.3.4 Drainage Basin 04

Drainage Basin 04 (KDB04) is located towards the southern end of Keyport and surrounds the shallow lagoon. All drainage from this basin ends up in the shallow lagoon that flows into Liberty Bay. The lagoon is affected by tidal levels with seawater entering the lagoon at high tides. The topography in the industrial portion of the basin slopes from north to south with low slope angles. The drainage from the relatively undeveloped south side of the basin slopes to the north with somewhat higher slope angles. Overall, the drainage basin has a low percentage of impervious cover (< 40%) and contains industrial workshops and other support buildings. The [redacted] are located in this drainage basin. The NAVBASE Kitsap Keyport drinking water well and lower reservoir are also located in this drainage basin. The basin is divided into sub-basins 04-1 through 04-7. Natural resources in the basin include the lagoon wetlands and a stream.

2.3.5 Drainage Basin 05

Drainage Basin 05 (KDB05) is located at the far southeast corner of the base and covers one half of the Radio Hill area. Drainage from the basin flows directly to Liberty Bay. The topography in the basin slopes predominantly from west to east, with steep slope angles to the high tide line. The basin has a low percentage of impervious cover (<40%) and is occupied primarily with residential housing. KDB05 has no permit-regulated activities, but does have the upper 500,000-gallon drinking water reservoir. Natural resources in the area include the lagoon and the upland forested area.

2.3.6 Drainage Basin 08

Drainage Basin 08 (KDB08) is located in the central western portion of the base. The basin includes a large salt marsh area and a high percentage of wetland areas. The topography of the basin is generally flat with all runoff passing through the salt marsh to ultimately end up flowing to the tide flats of Dogfish Bay. The basin has a low percentage of impervious cover (<40%). The basin contains a former landfill for the station that is now a National Priority List site; it has caused contamination in the shallow aquifers. Natural resources in the basin include a salt marsh, wetlands, and wooded areas.

2.3.7 Drainage Basin 09

Drainage Basin 09 (KDB09) is in the far western portion of the base. The basin includes a large tide-flat area that empties into Dogfish Bay. The basin's topography slopes from east to west with moderate slope angles with the exception of some steep slopes near the NAVBASE Kitsap Keyport Museum. The basin also includes a wetland area. KDB09 has a medium percentage of impervious cover (40-65%) and contains no permit-regulated activities. There are two large parking lots in the basin but few structures where industrial activities take place. Natural resources in the drainage basin include wetlands and shoreline areas.

Figure 2-1: Location Map

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Table 2-1: Drainage Basin Summary

Drainage Basin	Sub-Basin	Outfall Numbers	Basin Location	Receiving Waters	Drainage Area (acres)	Impervious Cover (%)
KDB01		KDB01-701 through 741	Northwestern Support Area	Liberty Bay/Marshland	13.9	Med 40-65%
	01-1	01-730 through 738			8.6	Low
	01-2	01-739 through 741			3.2	Med
	01-3	01-701 through 729			2.1	Med
KDB02		KDB02-701 through 741	Northeastern Industrial Area	Liberty Bay	37.0	High >65%
	02-1	02-701 through 706			2.5	Low
	02-2	02-707 through 716			9.5	Low
	02-3	02-717 through 724			2.4	High
	02-4	02-725, 726			11.3	High
	02-5	02-727			1.6	High
	02-6	02-732, 733			7.5	High
	02-7	02-734-740			1.0	High
	02-8	02-741			1.2	High
KDB03		KDB03-701-720	Southeastern Industrial Area	Liberty Bay	20.4	High >65%
	03-1	03-703			2.7	High
	03-2	03-706 through 708			0.6	High
	03-3	03-709 through 715			1.9	High
	03-4	03-716			0.8	High
	03-5	03-717			5.3	Med
	03-6	03-718			1.9	High
	03-7	03-719			6.6	Med
	03-8	03-720			0.6	High

Drainage Basin	Sub-Basin	Outfall Numbers	Basin Location	Receiving Waters	Drainage Area (acres)	Impervious Cover (%)
KDB04		KDB04-701 through 736	South Central Industrial Area	Shallow Lagoon	79.0	Med 40-65%
	04-1	04-702, 703			2.6	Med
	04-2	04-704 through 711			1.4	Med
	04-3	04-712, 713			2.9	Med
	04-4	04-714 through 725			3.0	Low
	04-5	04-728			10.1	High
	04-6	04-726, 727			0.9	High
	04-7	04-729 through 737			58.1	Low
KDB05		05-701 through 704	Southeast Radio Hill	Liberty Bay	16.2	Low <40%
KDB08		KDB08-701 through 705	West Central Salt Marsh	Salt Marsh	25.7	Low <40%
KDB09		KDB09-701 through 710	West Museum Area/Tide Flats	Tide Flats	27.6	Med 40-65%
	09-1	09-704			12.5	Med
	09-2	09-705			10.2	Med
	09-3	09-706 through 710			4.9	Med

3 Non-Stormwater Discharge Report

3.1 Introduction

Studies have found that a significant portion of the flow and pollutant loadings in stormwater drainage systems arises from either, or both, illicit or inappropriate discharges to those systems. To identify such sources, illicit discharge investigations have been ongoing since 1998 as part of the overall stormwater and wastewater studies performed at the complex. Major objectives are to (a) identify permitted and unpermitted non-stormwater entries into the stormwater system and (b) identify and evaluate controls to reduce the discharge of unpermitted discharges to the maximum extent practicable. (Note that the term "illicit" also is used to describe unpermitted non-stormwater discharges throughout this plan.) Such controls may include management practices, control techniques, system design, and engineering methods.

Typical suspected illicit discharges at NAVBASE Kitsap Keyport originate from equipment with non-contact cooling water, steam distribution system discharges, or system overflows. Tidal action has also been shown to affect the stormwater system. The method of entry can be through direct connections (plumbed directly to the stormwater system), by indirect entry (through below-grade infiltration), or from spills (from overland flow into catch basins). The illicit discharge study for NAVBASE Kitsap Keyport focused mainly on direct industrial connections and determined if past spills had possibly followed a pathway to the stormwater system.

Illicit discharge investigations performed as part of the 2008 SWPPP and later updates were built upon previous investigations and included visiting all existing industrial facilities to verify that new potential illicit discharges had not been created since the last SWPPP update (1997). New industrial facilities were evaluated through review of as-built drawings and by site visits.

As indicated above, not all non-stormwater discharges are considered illicit. The 2021 MSGP authorizes a number of non-stormwater discharges, as identified below. Base-specific permitted non-stormwater discharges are discussed in Section 3.5.

- Discharges from emergency/unplanned fire-fighting activities.
- Fire hydrant flushing.
- Potable water sources, including uncontaminated waterline flushing.
- Irrigation/landscape drainage, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling.
- External building/structure wash down/power wash water that does not use detergents or hazardous cleaning products and you have implemented appropriate control measures to minimize discharge of mobilized solids and other pollutants.
- Pavement wash waters where spills, leaks of toxic, or hazardous materials have not occurred (unless materials removed) and where detergents are not used, and where appropriate control measures to minimize discharges of mobilized solids or other pollutants.
- Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from outside storage of refrigerated gasses or liquids.
- Uncontaminated groundwater or spring water.

- Foundations or footing drains where flows are not contaminated with process materials.
- Incidental windblown mist from cooling towers.

Other non-stormwater discharges are not permitted. Typical unpermitted non-stormwater entries include sanitary wastewater or septic system seepage; non-contact or contaminated industrial process waters; household toxics; glycols, detergents, and POLs from vehicle repair shops and storage areas; and runoff from pesticide or fertilizer applications. The NAVBASE Kitsap Keyport IDI was specifically targeted at non-stormwater discharges originating at industrial facilities.

The 2021 MSGP requires that by the end of the first year of permit coverage, all stormwater discharge points must be inspected, documented and evaluated for non-stormwater discharges. If it is infeasible to complete the evaluation within the first year of permit coverage, it must be documented in the SWPPP why this is the case and identify the schedule to expect to complete the evaluation. Documentation of the discharge point evaluation must include the following:

- Date of evaluation;
- Description of the evaluation criteria used;
- A list of the discharge points or onsite drainage points that were directly observed during the evaluation;
- If there are any unauthorized non-stormwater discharges immediate action must be taken, such as implementing control measures, to eliminate those discharges;
- An explanation of everything done to immediately eliminate the unauthorized discharge per the corrective actions requirements.

Illicit discharges can be investigated using two categories of methodologies: (1) upstream surveys and (2) dry weather flow samples and analyses. Upstream surveys, such as mapping and industrial facility investigations, are useful in prioritizing areas of concern, locating specific pollutant sources, and identifying direct, illicit connections (using dye or smoke tests). Dry weather flows are characterized through tracer studies (using pH, temperature, conductivity, and other field tests) at stormwater outfalls. Laboratory analyses can be performed on samples taken from the drainage. The relative degree to which each of these methodologies is used depends on site-specific conditions, data availability, and time constraints.

Specific procedures used during the IDI included:

- Review and confirmation of utility drawings to identify potential non-stormwater illicit discharges or cross-connections to the system,
- Facility inspections of all industrial facilities-of-concern and interviews of facility personnel at each designated industrial area, and
- Dry weather inspection and tracer testing of all outfalls identified in the field.

3.2 Illicit Discharge Investigation Methods

3.2.1 Review of Sanitary and Storm Sewer Facility Maps

Before the field investigation commenced, the NAVBASE Kitsap Keyport utility maps were reviewed to identify potential cross-connections between the sanitary and storm sewer systems, locate direct discharges to the storm sewer lines from industrial sources, and narrow the areas requiring field-testing efforts.

Facility locations were noted on field copies of the utility maps. Stormwater lines and outfalls downstream of each of these industrial areas were considered high priority, while residential and other non-industrial-related stormwater lines were considered low priority.

Illicit connections were tentatively identified during the review when the maps indicated a direct connection from an industrial facility to a storm sewer line. Typically, field inspections revealed that such lines on the drawing indicated permitted roof drain connections, not illicit connections.

The facility utility maps were determined to contain inconsistencies and omissions in stormwater and sanitary sewer details, and substantial ground truthing was required. Corrected maps were used to produce the drainage base maps that are provided in Appendix A. The drawings show drainage basins, outfalls, facilities, roadways, impervious areas related to facilities, and stormwater conveyance systems.

3.2.2 Facility Inspections and Personnel Interviews

Following review of the base maps, the industrial facilities were visited to gather information concerning potential illicit discharges. Because illicit discharges are not typically shown on the utility maps, facility inspections were performed to ensure that all connections were identified. The facility inspections were completed in conjunction with personnel interviews performed for other sections of the SWPPP. Physical inspections of the existing stormwater systems, testing of potential discharges, and personnel interviews were performed whenever appropriate during the facility inspections. Drainage basin boundaries were also checked and revised during the facility inspections.

The existing stormwater conveyance systems (e.g., catch basins, manholes, culverts) were inspected to find illicit connections, determine flow directions, and look for evidence of illicit flows. Catch basins and manholes draining the industrial areas were visually inspected to check for direct connections from industrial facilities. The source and the fate of suspect connections to the system were determined. The stormwater system was also examined for odors, stains, and colors that might indicate the presence of illicit flows. The industrial facilities were inspected for potential illicit connections, such as floor drains, sumps, sinks, pipes, and other unknowns.

Potential illicit connections discovered during the physical inspection were tested to determine whether they connected to the stormwater system. Flush and dye tests were used to determine the route of flows through the potential illicit connections. These tests were performed by pouring water, dye, or both into a potential connection and watching for a discharge in down gradient stormwater and sanitary sewer systems. Connections determined to drain into the stormwater system were designated illicit connections.

During the inspections, the facility operators or building contacts were interviewed to determine whether any known illicit discharges or connections existed. Operators and contacts were questioned regarding the discharge point of potential connections, and the history and maintenance of the stormwater system for the facility. Also, the historical and current use of any illicit discharge or connection was discussed, as well as potential contaminants of concern that may enter into the connections.

3.2.3 Dry Weather Inspections

Dry weather inspections were conducted at each outfall from NAVBASE Kitsap Keyport identified during the field effort. The purpose of these inspections was to evaluate the likelihood that contaminated stormwater was leaving the base through stormwater conveyance systems.

The EPA recommends a 72-hour antecedent dry period before performing dry weather inspections at outfalls. Inspections were conducted as part of the initial SWPPP preparation in 1996, during the 2006 plan update and again in 2019 and 2020. The presence or absence of flow at outfalls was noted. Where flow was observed, a tracer study was conducted to characterize the discharge and to help indicate whether the flow was associated with an illicit discharge.

Physical and visual characterizations were performed. The flow rate was estimated using a container and stopwatch. The color, odor, and turbidity were noted along with any indications of sheens, stains, floatable material, vegetation, and damage to outfall structures. Temperature measurements were taken as a primary indicator of sanitary or industrial connections. Process or cooling water could be expected to have a higher temperature than groundwater infiltration. The pH was measured as well. A significant deviation in pH from the neutral 7 is indicative of industrial or commercial discharges. Because sanitary wastewater is generally of neutral pH, it will not indicate sanitary cross-connections. However, sanitary flow is characterized by a high turbidity, as well as the obvious color and odor deviation.

3.3 Illicit Discharge Investigation Results

This section reports the results of the dry weather inspections and the facility inspections. Sample results and flow descriptions from the 2006 dry weather inspections are presented in Table 3-1. Outfalls with no flow at the time of inspection were not included in the table. Of the NAVBASE Kitsap Keyport outfalls, nine had dry weather flows and one was buried with no apparent flow. Based on the 2006 dry weather inspections, one outfall, 03-719, was identified as likely being affected by an illicit discharge. Table 3-2 shows the 1996 dry weather inspection results. Table 3-3 shows the 2019 dry weather inspection results and Table 3-4 shows the 2020 dry weather inspection results. Table 3-5, which presents the results of the facility inspections, is based on a 1997 Water Quality Program Equipment (WQPE) summary included in the original SWPPP and includes historical information from the earlier SWPPP. Seventeen illicit connections or discharges were identified during the original facility inspections. One additional illicit discharge was noted during the 2006 survey. Most of the illicit connections were the type that would only flow if an industry-specific activity were occurring.

The results of the investigations are presented in Table 3-6. The table is a combination of the illicit discharges noted during the 2006 and 2008 surveys and those noted during earlier investigations. A report documenting drain testing conducted in 2008 is included in this document as Appendix O. Table 3-7 is a summary of illicit discharges identified during the 2015 MSGP permit cycle.

Table 3-1: Summary of 2006 Dry Weather Inspections

Outfall	Description of Flow	pH	Temperature (°F)	Conductivity (µs/cm)
01-730	Approx. 0.25 gpm, clear, no odor	7.74	65.3	n/a
01-739	Approx. 0.25 gpm, clear, no odor	7.84	62.9	n/a
01-740	Buried, no apparent flow.			
01-742	Approx. 0.125 gpm, clear, no odor	7.86	69.4	n/a
02-726	Approx. 10 gpm	7.67	72.6	n/a
03-701	Dripping	8.26	69.0	n/a
03-717	Approx. 1 gpm, clear, no odor	7.98	69.2	n/a
03-718	Approx. 4 gpm, clear, no odor	8.09	71.4	n/a
03-719	Approx. 0.125 gpm, clear, slight musty odor. Rust staining around outfall. Upstream catch basins exhibited significant odor	7.67	69.2	n/a
09-704	Approx. 1 gpm, clear, some sediment, no odor	7.87	73.7	n/a
Note: Only those outfalls flowing or undetermined (01-740) at the time of inspection were included in this table. Base potable water supply was tested at a pH of 7.87.				

Table 3-2: Summary of 1996 Dry Weather Inspection Results

Outfall	Flow (Est.)	Building	Comments
01-730	0.1 gpm	515	Bldg. 76 source
01-740	0.25 gpm	94	Unknown source
01-741	0.1 gpm	94	Smelled of chlorine, sudsy
01-742	0.1 gpm	94	Unknown source
02-714	0.25 gpm	6	Broken pipe
02-733	5.0 gpm	514	Cooling water from 234
03-718	12.0 gpm	80	Cooling water from 81
03-719	3.0 gpm	105	From Quarters U and V
09-704	0.25 gpm	Parking lot 7A	From parking lot

Table 3-3: Summary of 2019 Keyport Dry Weather Inspection

Outfall	Description of Flow	pH	Hardness	Chlorine	Source Trace
01-730	0.032 gal/min, clear, no odor	7	50	None	Suspected groundwater intrusion
01-733	0.1 gal/min, clear, no odor	7	50	None	Catch basin groundwater intrusion behind bldg. 515
02-702	100 drops/min, clear, no odor	8	450	None	Suspected groundwater intrusion
02-704	Slow seep, clear, no odor	7	200	None	Not traced, suspect groundwater intrusion
02-708	Slow seep, clear, no odor	8	450	None	Not traced, suspect groundwater intrusion
02-718	Slow seep, clear, no odor	8	450	None	Not traced, suspect groundwater intrusion
02-724	0.026 gal/min, clear, no odor	8	100	None	Suspect groundwater intrusion
02-725	Slow seep, clear, no odor	8	450	None	Not traced, suspect groundwater intrusion
02-726	15 gal/min, clear, no odor	7	450	None	Tidal outflow and basement sump pumps in residential
02-733	60 gal/min, clear, no odor, coming from around inlet pipes in last manhole cistern before outfall	6.5	100	None	Tidal groundwater intrusion into stormwater piping during low tide
03-716	140 drops/min, clear, no odor	6.5	100	None	Suspected tidal groundwater intrusion
03-718	0.13 gal/min, clear, no odor	7	100	None	Air conditioning condensate
03-719	3.2 gal/min, clear, no odor, potable water leak going to this outfall during survey	7	100	None	Potable water leak at time of inspection
03-720	0.026 gal/min, clear, no odor	7	100	None	Suspected groundwater intrusion
04-703	0.4 gal/min, clear, no odor	7	50	None	Air conditioning condensate, suspect some groundwater intrusion also
09-707	40 drops/min, clear, no odor	7	200	None	Suspected groundwater intrusion

Table 3-4: Summary of 2020 Keyport Dry Weather Inspection

Outfall	Description of Flow	pH	Hardness (ppm)	Chlorine (free/total ppm)	Alkalinity (ppm)	Nitrite/Nitrate (ppm)	Phosphate (ppm)	Ammonia (ppm)	Source Trace
01-730	10 mL/min, clear, no odor	7.2	120	0/0	40	0/2	5	0	Suspected groundwater intrusion
01-733	6.3 mL/min, clear, no odor	7.8	120	0/0	120	0/0	5	0	Catch basin groundwater intrusion behind bldg 515
02-704	Very slow seep, clear, no odor	NT	NT	NT	NT	NT	NT	NT	Not traced, suspect groundwater intrusion
02-724	Very slow seep, clear, no odor	NT	NT	NT	NT	NT	NT	NT	Not traced, suspect groundwater intrusion
02-733	20 gal/min, clear, no odor	7.2	425	0/0	60	0/0	0	0	Tidal groundwater intrusion into last leg of outfall piping
03-716	Trickle, clear, slight yellow tint, no odor	7.2	300	0/0	40	0.15/5	30	0.75	Suspected tidal groundwater intrusion
03-717	Trickle, cleat, slight yellow tint, no odor	7.8	300	0/0	240	0.15/1	5	0	Suspected tidal groundwater intrusion
03-718	300 mL/min, clear, no odor	7.8	300	0/0	120	0/2	5	0.25	Air conditioning condensate
03-719	6 L/min/min, clear, no odor	7.2	300	0/0	120	0/0	30	0	Basement sump pumps in residential homes
03-720	100 mL/min, clear, no odor	8	300	0/0	180	0/2	30	0.25	Suspected groundwater intrusion
04-703	909 mL/min, clear, no odor	7.2	120	0/0	80	0/2	30	0	Air conditioning condensate, suspect some groundwater intrusion as well

Table 3-5: Water Quality Program Equipment Illicit Discharge Building Survey

Building	Equipment	Drains to?	Catch Basin	Outfall	Equip. Data	Purpose	1997 Comments	2011 Comments	2020 Comments
1	[redacted]	none	none	none	[redacted]	[redacted]	none		Under renovation, building vacant for years until asbestos/lead abatement in 2019.
6	[redacted]	SS	none	none	[redacted]	[redacted]	none		none
10	[redacted]	SW	none	04-716/7/8/9	[redacted]	[redacted]	overflows into the lagoon		Keyport is now on city water, building is retired in place, no longer in use.
15-750	[redacted]	SW	15-1-5/19/20/21	02-726	[redacted]	[redacted]	NPDES permitted discharge	Chambers removed	Currently offices in north end, south end empty.
15-751	[redacted]	SW	15-1-6/19/20/21	02-726	[redacted]	[redacted]	NPDES permitted discharge	Chambers removed	Currently offices in north end, south end empty.
15-752	[redacted]	SW	15-1-7/19/20/21	02-726	[redacted]	[redacted]	NPDES permitted discharge	Chambers removed	Currently offices in north end, south end empty.
15-753	[redacted]	SW	15-1-8/19/20/21	02-726	[redacted]	[redacted]	NPDES permitted discharge	Chambers removed	Currently offices in north end, south end empty.
15-754	[redacted]	SW	15-1-8/19/20/21	02-726	[redacted]	[redacted]	NPDES permitted discharge	Chambers removed	Currently offices in north end, south end empty.
17	[redacted]	none	none	none	[redacted]	[redacted]	none		Fire Dept barracks and training
21-750	[redacted]	contained	none	none	[redacted]	[redacted]	none	Building Demolished	-
21-751	[redacted]	none	none	none	[redacted]	[redacted]	no containment	Building Demolished	-
24-750	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-751	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-752	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-753	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-754	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-755	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-756	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-757	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
24-758	[redacted]	SW	none	02-723	[redacted]	[redacted]	NPDES permitted discharge	Building Demolished	-
33	[redacted]	none	none	none	[redacted]	[redacted]	none		none
35	[redacted]	SS	none	none	[redacted]	[redacted]	none		none
38-750	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-751	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-752	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-753	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-754	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-755	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-756	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-757	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
38-758	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connections		none
40	[redacted]	none	none	none	[redacted]	[redacted]	none		none

Building	Equipment	Drains to?	Catch Basin	Outfall	Equip. Data	Purpose	1997 Comments	2011 Comments	2020 Comments
47	[redacted]	none	none	none	[redacted]	[redacted]	none	Building demolished	none
48-750*	[redacted]	SW	none	none	[redacted]	[redacted]	non-stormwater discharge	Potable water- allowable non-stormwater discharge	none
74-750	[redacted]	contained	none	none	[redacted]	[redacted]	discharge collected in tanks	X- ray equipment removed	none
76-714/15*	[redacted]	SW	76-14/15	?, blocked	[redacted]	[redacted]	non-stormwater discharge	Pumped to sanitary	Pump failed, trench drain and bay floor drains have projects awaiting to direct to sanitary sewer
76-750*	[redacted]	SW	none	01-730	[redacted]	[redacted]	non-stormwater discharge	Pumped to sanitary	none
76-751*	[redacted]	SW	none	01-730	[redacted]	[redacted]	non-stormwater discharge	Pumped to sanitary	none
81-750	[redacted]	SW	none	03-718	[redacted]	[redacted]	NPDES permitted discharge	Closed-loop chiller system installed	none
81-751	[redacted]	SW	none	03-718	[redacted]	[redacted]	NPDES permitted discharge	Closed-loop chiller system installed	none
81-752	[redacted]	SW	none	03-718	[redacted]	[redacted]	NPDES permitted discharge	Closed-loop chiller system installed	none
81-753	[redacted]	SW	none	03-718	[redacted]	[redacted]	NPDES permitted discharge	Closed-loop chiller system installed	none
81-754	[redacted]	SW	none	03-718	[redacted]	[redacted]	NPDES permitted discharge	Closed-loop chiller system installed	none
81-755	[redacted]	SW	none	03-718	[redacted]	[redacted]	NPDES permitted discharge	Diverted to sanitary	none
82-750	[redacted]	closed	none	none	[redacted]	[redacted]	valve to stormwater tagged out		none
82-751	[redacted]	contained	none	none	[redacted]	[redacted]	collected in sump		none
82-752	[redacted]	SS	none	none	[redacted]	[redacted]	connected to sanitary		none
83-750	[redacted]	none	none	none	[redacted]	[redacted]	cooling water for welding	Building was demolished	none
84-750	[redacted]	IWTP	none	none	[redacted]	[redacted]	IWTP connection		none
85-750	[redacted]	IWTP	none	none	[redacted]	[redacted]	collected in sump		none
93-750	[redacted]	SW	93-1/2/3	93-705	[redacted]	[redacted]	discharges to Liberty Bay, okay		none
98-750	[redacted]	closed/SS	none	none	[redacted]	[redacted]	linked to sanitary sewer		Floor drain in area was diverted to sanitary sewer
105-102	[redacted]	SS	none	none	[redacted]	[redacted]	equipment removed		none
105-750	[redacted]	removed	none	none	[redacted]	[redacted]	equipment removed		none
106-750	[redacted]	SW	none	04-735	[redacted]	[redacted]	NPDES permitted discharge	Building no longer used	Range Ops storage
107	[redacted]	none	none	none	[redacted]	[redacted]	no connections		none
134-750	[redacted]	IWTP	none	none	[redacted]	[redacted]	floor drains connected to sump		none
137	[redacted]	none	none	none	[redacted]	[redacted]	no connections		none
206-750*	[redacted]	SW	none	04-705	[redacted]	[redacted]	non-stormwater discharge	Air conditioner condensate is acceptable	none
207-750	[redacted]	SS	none	none	[redacted]	[redacted]	potential spill to sanitary		none
208/209/1049/ 1060	[redacted]	contained	none	none	[redacted]	[redacted]	valve on storm drain for spills		none
234-750*	[redacted]	SW	234-5	02-732	[redacted]	[redacted]	non-stormwater discharge	Compressor replaced with air cooled model	none
234-751*	[redacted]	SW	none	none	[redacted]	[redacted]	non-stormwater discharge		none
234-752*	[redacted]	SS	none	none	[redacted]	[redacted]	to sanitary sewer		none
234-753*	[redacted]	SW	none	02-732	[redacted]	[redacted]	non-stormwater discharge	Compressor replaced with air cooled model	none
234-754*	[redacted]	SW	none	02-732	[redacted]	[redacted]	non-stormwater discharge	System removed	none

Building	Equipment	Drains to?	Catch Basin	Outfall	Equip. Data	Purpose	1997 Comments	2011 Comments	2020 Comments
478-750	[redacted]	closed	none	none	[redacted]	[redacted]	closed-loop cooling water		none
489-750	[redacted]	closed	none	none	[redacted]	[redacted]	closed-loop cooling water		none
489-751	[redacted]	closed	none	none	[redacted]	[redacted]	closed-loop cooling water		none
489-752	[redacted]	closed	none	none	[redacted]	[redacted]	collected in tank, not moved yet		none
514-750	[redacted]	closed/SS	none	none	[redacted]	[redacted]	closed-loop cooling water		Chiller repaired in 2018, potable water backup piping removed from stormwater downspout.
735	[redacted]	none	none	none	[redacted]	[redacted]	uncovered outdoor tanks		Now cold water training building
820	[redacted]	none	none	none	[redacted]	[redacted]	seal floor drains better		none
824-750*	[redacted]	SW	none	none	[redacted]	[redacted]	non-stormwater discharge	Discharge directed to sanitary, no longer PW	none
824-751*	[redacted]	SW	none	none	[redacted]	[redacted]	non-stormwater discharge	Discharge directed to sanitary	none
824-752*	[redacted]	SW	824-1	08-705	[redacted]	[redacted]	non-stormwater discharge	Discharge directed to sanitary	none
824-753*	[redacted]	SW	824-2	08-705	[redacted]	[redacted]	non-stormwater discharge	Pressure testing no longer conducted	none
825	[redacted]	SS	none	none	[redacted]	[redacted]	permitted connections		none
894-750	[redacted]	none	none	none	[redacted]	[redacted]	No longer in use		none
940-750	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Equipment removed	none
940-751	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Equipment removed	none
940-752	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Equipment removed	none
940-753	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Equipment removed	none
940-754	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Equipment removed	none
940-755	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Equipment removed	none
950-750	[redacted]	SS	none	none	[redacted]	[redacted]	connected to sanitary		none
950-751	[redacted]	SS	none	none	[redacted]	[redacted]	connected to sanitary		none
952-750	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Facility not used for turbine testing since late 90s	none
952-751	[redacted]	SW	none	04-728	[redacted]	[redacted]	NPDES permitted discharges	Facility not used for turbine testing since late 90s	Now test equipment storage
1002-750	[redacted]	contained	none	none	[redacted]	[redacted]	collected in sump		none
1006	[redacted]	contained	none	none	[redacted]	[redacted]	contained building, no threat		none
1013	[redacted]	none	none	none	[redacted]	[redacted]	none		Fire Dept storage
1016-750*	[redacted]	SW	1016-17	09-706	[redacted]	[redacted]	non-stormwater discharge	Air conditioner condensate is an allowable discharge	none
1050-750	[redacted]	SS	none	none	[redacted]	[redacted]	connected to sanitary		none
1050-751	[redacted]	SS	none	none	[redacted]	[redacted]	connected to sanitary		none
1051-750	[redacted]	SW	1051-1	08-705	[redacted]	[redacted]	stormwater retention vaults		none
1055	[redacted]	contained	none	none	[redacted]	[redacted]	contained building, no threat		System removed, now forklift charging facility
Pier - 1	[redacted]	SW	none	03-707/708	[redacted]	[redacted]	spill controls necessary	Pier demolished	none

Building	Equipment	Drains to?	Catch Basin	Outfall	Equip. Data	Purpose	1997 Comments	2011 Comments	2020 Comments
Pier - 2	no WQPE	SW	none	none	n/a	Pier Two	spill controls necessary	Pier demolished	none
	[a]- Industrial facilities inspected included facilities covered by Multi-Sector General Permit and others potentially handling significant materials. Key: SW: Stormwater SS: Sanitary Sewer IWTP: Industrial Waste Treatment Plant TSDF: Treatment, Storage, and Disposal Facility								

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Table 3-6: Illicit Discharge or Connection, and Corrective BMPs

Illicit Discharge Number	Outfall Impacted	Classification of Discharge[a]	Description of Illicit Discharge or Connection	2011 Status	Recommended Correction
515[1]	01-730	B	Bldg. 76 source was clothes washing machine in fire station basement.	Washer discharges to sump which is pumped to sanitary connection.	Action complete. Washer discharge diverted to sanitary.
94[1]	01-740	n/a	Unknown source	Not flowing during time of 2006 dry weather inspections. No illicit discharge (ID) suspected.	No correction required.
94[1]	01-741	n/a	Smelled of Chlorine, sudsy	Not flowing during time of 2006 dry weather inspections. No ID suspected.	No correction required.
94[1]	01-742	n/a	Unknown	Not flowing during time of 2006 dry weather inspections. No ID suspected.	No correction required.
6[1]	02-714	n/a	Broken Pipe	Broken storm sewer pipe allowing infiltration is not an illicit discharge.	No correction required.
514[1] 234[2]	02-732/733	B	Cooling Water from 234 [redacted]	Cooling water from two older air compressors discharged cooling water to storm sewer when they were operating. Compressors were replaced with air cooled models in 2008.	Action complete. Air compressors replaced with air cooled models.
234[4]	02-732/733	B	Back flush water softener	Floor drain accepts drainage from water softener backwash.	Action complete.
80[1] 81[2]	03-718	B	Cooling Water from 81	Discharge from cable pressure testing was directed to a tank which is pumped for disposal. Cooling water discharge eliminated in 2009.	Closed-loop cooling system installed April 2009.
105[1]	03-719	A	From Quarters U & V sanitary cross connection	Clothes washing machines in U & V basements were connected to storm. Washer drains were rerouted to sanitary in June 2006. Post-correction investigation of downstream catch basins indicates that some type of cross-connection was still present. Laundry sinks later connected to sanitary.	Action complete. Washer and laundry sink discharges diverted to sanitary.
Parking lot 7A[1]	09-704	n/a	From parking lot	Not an illicit discharge, included in SWPPP for unknown reason.	No correction required.

Illicit Discharge Number	Outfall Impacted	Classification of Discharge[a]	Description of Illicit Discharge or Connection	2011 Status	Recommended Correction
17[2]		B	Floor Drain	Former wood hobby shop, building now used by fire department.	Plugged floor drains.
47[2]		B	Boat washing needs containment	BMPs have been enacted to contain boat wash.	Boat wash contained in sump and pumped out for disposal.
478[2]		B	Floor Drains	Accomplished per pen notations in 1997 SWPPP.	Action complete. Plugged storm drains.
820[2]		B	Floor Drains	[redacted] Accomplished per pen notations in 1997 SWPPP. Verified in 2008 IDI.	Action complete. Plugged storm drains.
824[2]		B	Welding tank hydrotest water to storm	Hydrotest tank removed.	Action complete.
12	unknown	B	Coffee mess discharges to roof downspout.	Coffee mess removed.	Action complete.
742	unknown	A	Dispensary X-ray machine drains to storm	X-ray machine gone.	Action complete.
735[2]	unknown	B	Diptank secondary containment	Tanks have been removed.	Action complete.
108[3]	Lagoon	B	Equipment test stand cooling water discharges to storm	Equipment shutdown pending correction.	Installed closed-loop cooling system.
98[4]	02-741	B	[redacted]	Floor drain still need labeling	Action complete.

a. Classification of Discharge
   A. Pathogenic or toxic pollution sources.
   B. Nuisance and aquatic life threatening pollution sources.

1. These illicit discharges were originally listed in the 1998 NUWC SWPPP Chapter 4, Table 6.
2. Illicit discharges noted in Chapter 8, Table 9 of the 1998 NUWC SWPPP (including pen and ink markups).
3. Illicit discharges noted as part of the 2006 Comprehensive Site Compliance Evaluation (CSCE) and SWPPP update.
4. Illicit discharge noted during the 2008 illicit discharge investigation.

Table 3-7: 2015 MSGP permit cycle illicit discharge/connection summary

Building	Outfall impacted	Classification of Discharge	Description of illicit discharge or connection	Recommended Correction	2020 Status
514	02-732	Nuisance and aquatic life threatening pollution sources	[redacted] cooling water backup method (single pass) using potable water routed to building roof downspout clean out.	Repair faulty closed loop chiller equipment. Disconnect backup method piping.	Chiller system replaced. Backup method piping disconnected from storm.
None	01-742	Nuisance and aquatic life threatening pollution sources	Pipe listed as an outfall actually an old no longer used potable water flushing line to beach. Upstream valve is failing causing potable water leakage to beach.	Repair upstream valve.	Upstream valve replaced. No leakage after repair.
491	None	Pathogenic or toxic pollution sources	[redacted] sump pump (groundwater contaminated with equipment hydraulic fluid leakage) routed to a transformer pad OWS that goes to a grass ditch.	Re-route sump pump discharge to a tank to be processed as oily waste water.	Tank installed and regularly pumped and disposed of properly.
91	02-703, 02-704	Pathogenic or toxic pollution sources	Force main sewer leak under building 91 entering stormwater piping.	Repair sewer leak.	Sewer leak repaired, force main piping re-routed to street around building 91.
234	02-733	Nuisance and aquatic life threatening pollution sources	Backup low pressure air compressor cooling water routed to a storm grate.	Re-route to sanitary sewer.	Re-routed to sanitary sewer. Compressor will eventually be replaced with air cooled unit.
820	04-728	Nuisance and aquatic life threatening pollution sources	[redacted] tank being drained to street.	Drain to sanitary sewer.	Current process is to drain tank to building's sanitary sewer lift station with hose.
38	03-716	Nuisance and aquatic life threatening pollution sources	Waterjet cutter media waste bin leaking onto street near catch basin.	Change waste storage method to prevent bin leakage to stormwater.	Heavy plastic liner is now used in bins to eliminate leakage from waste bin.

98	02-741	Nuisance and aquatic life threatening pollution sources	[redacted] tank drainage to a catch basin inside building that goes to storm.	Re-route catch basin to sanitary sewer.	Catch basin has been re-routed to sanitary sewer.
76	01-731	Nuisance and aquatic life threatening pollution sources	Trench drain collecting truck wash water goes to storm, parking bay floor drains go to storm.	Repair trench sanitary sewer sump pump, repair trench, and re-route parking bay floor drains to sanitary sewer.	Projects awaiting funding to re-route drains. Parking bay floor drains are temporarily plugged and washing is prohibited until trench is re-routed.
35	01-741	Pathogenic or toxic pollution sources	Building gravity main sewer piping leakage entering stormwater piping.	Repair sewer leak. Outfall plugged and pumped to sanitary sewer until leak repaired.	Sewer leak repaired.

3.4 Elimination of Illicit Discharges

Illicit or unpermitted non-stormwater connections or discharges into the stormwater drainage system were identified in Section 3.3. This section prioritizes the discharges and provides methods for elimination of the discharges.

3.4.1 Classification of Illicit Discharges

The initial IDI at NAVBASE Kitsap Keyport revealed nineteen illicit connections or discharges to the stormwater system (see Table 3-6). These were prioritized so that an effective management plan could be developed for the elimination of these discharges. The connections or discharges were placed into one of the following categories based on the potential health hazard of the discharge:

- Pathogenic or toxic pollution sources
- Nuisance and aquatic life-threatening pollution sources

Pathogenic and toxic pollution sources are the most serious and have been assigned the highest priority for elimination. Typical sources of pathogenic and toxic pollution are sanitary and industrial wastewaters, household toxics, automobile related wastes (e.g., oil, grease, solvents, and ethylene glycol), and excessive fertilizers and pesticides. Nuisance and aquatic life-threatening pollutants are serious sources that have been assigned the next highest priority for elimination. These pollutants include detergents, cooling waters (assuming no toxic corrosion inhibitors are present), vehicle wash waters, boiler blow-down water and steam condensate, and construction site runoff. These discharges may cause excessive algal growths, taste and odor problems in downstream drinking water supplies, excessive coarse solids and floatables, thermal degradation, and high turbidity. Table 3-7 summarizes the illicit discharges revealed throughout the 2015 MSGP permit period.

3.4.2 Best Management Practices for Non- Stormwater Discharges

BMPs are defined as physical, structural, and/or managerial practices that prevent or reduce pollutant loads to receiving water bodies. For stormwater management, BMP types include source controls and runoff treatment. Source controls are the most commonly used BMPs to eliminate illicit discharges. Runoff treatment may be used where source control is impossible or impractical. Eliminating an illicit connection or discharge is the most effective and commonly used BMP for non-stormwater entries into the stormwater system. The BMPs identified for illicit connections or discharges into the NAVBASE Kitsap Keyport stormwater system are listed in Table 3-6 and 3-7.

3.5 Permitted Non-Stormwater Discharges

As indicated in Section 3.1, the MSGP authorizes certain non-stormwater discharges. A number of non-stormwater discharges are present at NAVBASE Kitsap Keyport.

Non-detergent building and pavement washing takes place as needed. Potable waterlines are flushed as needed with discharge into the storm drain system. Lawns are also watered throughout the developed portions of the base resulting in potable water runoff to the storm drain system. Fire-fighting activities, as required, also result in potable water runoff to the storm drain system. Many eye wash stations throughout NAVBASE Kitsap Keyport drain potable water to the ground. Small boats and other marine equipment are rinsed with potable water at Bldg. 6 and Bldg. 478 and occasionally at other locations.

4 Stormwater Pollution-Source Identification, Assessment, and Control Measures/BMPs

4.1 Industrial Facilities and Identified Pollutant Sources

As part of the initial data gathering efforts supporting this SWPPP, 56 individual or groups of industrial facilities at NAVBASE Kitsap Keyport were inspected. During the field inspections for the 2009 update, the original facilities were revisited and two additional facilities were assessed. Some of the original facilities were removed from the SWPPP as part of the 2009 update. Based on information gathered during the inspections, facility activities and functions were compared to the industrial profiles for each of the 29 sectors contained in the MSGP. Approximately 50 of the facilities at NAVBASE Kitsap Keyport are covered within one or more of five sectors contained in the permit. Aditionally these industrial profiles were reviewed and updated for the 2021 update. The sector(s) associated with each facility are identified in Table 4-1.

The potential pollutant sources for all industrial facilities inspected are identified in Section 3 (illicit discharges and illicit connections) and Section 4 (significant material storage and handling areas). These potential pollutant sources were determined based on interviews with facility personnel and a field inspection of significant material inventories, handling procedures, storage practices, and standard operating and safety procedures at each site. In addition, available maps of the sanitary and storm sewer systems were compared to field conditions. In general, petroleum, lubricants, and oils (POLs) were the most commonly cited potential contaminants at NAVBASE Kitsap Keyport industrial facilities during the field inspections, followed by metals and suspended solids. Table 4-1 lists the current industrial facilities, applicable sector, potential pollutants, and affected outfall.

4.2 Identification of Control Measures/Best Management Practices

BMPs are measures or procedures that are used to prevent or reduce the potential for water pollution. Numerous BMPs are available to choose from to achieve this purpose. Some BMPs are more appropriate for an individual site than others, based on site-specific characteristics; some BMPs are readily implemented at all sites.

EPA (1992a) identifies baseline BMPs (good housekeeping and preventive maintenance practices, inspections, employee training and testing, spill prevention and response, sediment and erosion control, management of runoff, and recordkeeping and reporting) that are required of all facilities, and advanced BMPs that specifically address particular pollutant sources. The Washington Department of Ecology (WDOE) Stormwater Management Manual for Western Washington (WDOE 2005) also identifies baseline BMPs and emphasizes source-control BMPs as the first and most cost effective method of eliminating or reducing pollution of stormwater. These BMPs and additional industrial-specific BMPs identified in the EPA MSGP for stormwater associated with industrial facilities were added to an index of BMPs developed for NAVFAC Southwest (Woodward Clyde 1993). Summary lists of the BMPs are provided in Appendix F, along with a detailed description of each BMP.

4.2.1 Core BMPs

Core BMPs, required in the body of the 2021 MSGP (Section 2.1); generally apply to all industrial sectors at NAVBASE Kitsap Keyport. Core BMPs are included in Table 4-2.

4.2.2 Sector-Specific BMPs

Sector-specific BMPs contained in Part 8 of the 2021 MSGP must be considered for those portions of NAVBASE Kitsap Keyport that fall into one of the industrial sectors defined in the MSGP. Control measures for Sectors K, N, P, Q and AA were considered and are presented in Table 4-3.

4.2.3 Facility-Specific BMPs

Existing BMPs currently in use at NAVBASE Kitsap Keyport that help reduce the potential for contamination of stormwater and new site-specific BMPs to help further reduce the potential for stormwater pollution are summarized in Table 4-4.

Table 4-1: NAVBASE Kitsap Keyport Industrial Facilities

DB#	Outfall Affected	Facility Number	Facility Name	Potential Pollutants	Permit Sector
KDB01	01-730	76	[redacted]	Detergents	n/a
	01-733	205	[redacted]	Metals	n/a
KDB02	Sheet Flow	6	[redacted]	Detergents, POLs	Q
	02-726	15	[redacted]	Total Suspended Solids (TSS), POLs	AA
	02-704, Sheet Flow	33	[redacted]	Detergents, POLs	Q
	02-704, Sheet Flow	48	[redacted]	POLs	Q
	02-726	73	[redacted]	POLs, Metals	AA
	02-733	84	[redacted]	Paint, Metals, Blast Grit	AA
	02-702, 02-703, 02-704	91	[redacted]	TSS	P
	02-704	92	[redacted]	POLs	P
	02-704	93	[redacted]	POLs	P
	02-724	137	[redacted]	Metals	AA
	Sheet Flow	221	[redacted]	POLs	Q
	02-732/733	234	[redacted]	POLs, Metals, Temperature	AA
	02-724, 02-726	478	[redacted]	POLs, Metals	Q, AA
	02-726, 02-733	489	[redacted]	Agitene, [redacted] Fuel, Metals	AA
	02-733, Sheet Flow	514	[redacted]	POLs, [redacted] Fuel, Glycol	AA
	02-741, 02-734	825	[redacted]	POLs, Acids, Caustics	AA
	Sheet Flow	880	[redacted]	n/a	n/a
	02-726	894	[redacted]	Solvents	AA
	02-726, 02-733	1002	[redacted]	Metals	AA
	02-726, 02-727	1050	[redacted]	Metals	AA
	02-733	1055	[redacted]	POLs	AA
	03-717	38	[redacted]	POLs, Metals	AA
	03-719	81	[redacted]	Alodine, Metals	AA
KDB03	03-709	82	[redacted]	POLs, Metals	Q
	03-703	85	[redacted]	POLs, Metals	AA
	03-703, 02-741	98	[redacted]	POLs	AA
	03-719	105	[redacted]	Metals	AA
	Sheet Flow	186	[redacted]	Acids	AA

DB#	Outfall Affected	Facility Number	Facility Name	Potential Pollutants	Permit Sector
	02-733, 03-716	233	[redacted]	POLs, Metals	AA
	03-716, 03-717	1058	[redacted]	Metals, Acids	AA
	04-728	144	[redacted]	n/a	P
	04-728	206	[redacted]	Metals, Acids	AA
	04-728	207	[redacted]	Metals, POLs	AA
	04-727	208/209/ 1049/ 1060	[redacted]	[redacted] Fuel	AA
KDB04	04-728	820	[redacted]	Metals, Acids, POLs	AA
	04-728	893	[redacted]	POLs	P
	04-728	940	[redacted]	POLs	AA
	04-728	952	[redacted]	Metals	AA
	Stream to Lagoon	957/1017/ 1018	[redacted]	Metals, POLs	N
	Sheet Flow	1006	[redacted]	POLs, Solvents	AA
	04-728	1051	[redacted]	POLs, Solvents	K
	Sheet Flow	108	[redacted]	POLs, Solvents, Chlorinated Water	AA
	Sheet Flow	824	[redacted]	Metals, POLs	AA
	Sheet Flow	791	[redacted]	Metals, POLs	AA
	08-705	950	[redacted]	POLs, Solvents	AA
KDB08	08-705	951	[redacted]	POLs, Solvents	AA
	Sheet Flow to Marsh	1032	[redacted]	POLs, Solvents	n/a
	East of 08-705, 04-728	1051	[redacted]	POLs, Solvents	K

Table 4-2: Core BMPs

BMP Number	BMP Description	Issue	Action
Base-wide Core BMPs			
C-1	Minimize Exposure	Minimizing exposure of pollutants to stormwater is a Core BMP required under the MSGP. Uncontained outdoor vehicle washing can be a problem. Scrap metal collection dumpsters throughout the facility are missing or have damaged lids. Stormwater flowing through these containers picks up inorganic and petroleum contamination before entering the storm sewer system. Obsolete equipment, unused metal stock, and significant materials including petroleum are stored outside exposed to the weather at times.	Minimize the exposure of all processes to rain, snow, snowmelt, and runoff: • Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas. • Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge. • Clean up spills and leaks promptly using dry methods. • Store leaky vehicles and equipment indoors, or use drip pans/absorbents. • Use spill/overflow protection equipment. • Perform all vehicle/equipment cleaning indoors, under cover, or in bermed areas to collect water (for drainage to sanitary sewer systems). • Drain fluids from decommissioned vehicles and equipment.
C-2	Good Housekeeping	The MSGP requires implementation of good housekeeping practices. Utility trenches that drain to the storm sewer run through many of the industrial facilities at NAVBASE Kitsap Keyport. Additional housekeeping measures are needed in the vicinity of the trenches.	Prevent stormwater from coming into contact with polluting materials. Use control measure in combination to enhance minimization. Assess the type and quantity of pollutants, including impact to receiving waters. Explore utilizing less impervious areas and infiltrate onsite (such as Bioretention cells, pervious pavement, etc.) Attenuate flow through use of open vegetated swales and natural depressions. Conserve and/or restore riparian buffers to protect streams. Explore using treatment interceptors such as swirl separators, sand filters, where appropriate.

BMP Number	BMP Description	Issue	Action
C-3	Preventative Maintenance	Preventative maintenance is one of the Core BMPs required under the MSGP.	The NAVBASE Kitsap Keyport preventive maintenance program will include timely inspection and maintenance of stormwater management devices (e.g., cleaning oil/water separators, catch basins) as well as inspection, testing maintaining and repairing facility equipment and systems to avoid breakdowns or failures that may result in discharge of pollutants to surface waters.
C-4	Spill Prevention and Response	Spill prevention and response measures are required as a Core BMP under the MSGP. Spill prevention and response procedures are thoroughly addressed in the NAVBASE Kitsap Keyport SPCC Plan and OHS Response Plan. The SPCC plan establishes minimum spill prevention procedures, methods, equipment, and facility design requirements to prevent and control the spillage of all types of oil (POL and Non-Petroleum Oils). The Plan also includes evaluations and recommended actions for oil storage facilities at NAVBASE Kitsap Keyport.	Applicable personnel shall be trained in spill response. Adequate spill response supplies will be stationed near potential spill locations. The NAVBASE Kitsap Keyport SPCC and OHS Response plans are active and effective in preventing and responding to spills. No significant actions with regard to spill prevention and response procedures are included or necessary in this plan. The plan does, however, require that regular inspections include consideration of spill potential. The spill response numbers are included in the SWPPP, Section 1.6.2.
C-5	Erosion and Sediment Controls	The MSGP requires that the SWPPP identify areas of the facility that have the potential for erosion, and implement BMPs to control that erosion.	No significant areas of erosion were noted during the site visits. The industrialized portions of the base are relatively flat with low erosion potential while the steeper sections of the facility are well vegetated. Energy dissipaters or mats will be used to minimize erosion during hydrant flushing. Practices for controlling erosion from new construction are included in Appendix E.
C-6	Management of Runoff	The MSGP requires that stormwater runoff management practices such as permanent structural BMPs be described in the SWPPP.	Permanent structural runoff management measures in use at NAVBASE Kitsap Keyport include oil/water separators, wet ponds, and biofiltration swales. A complete listing of permanent runoff management measures is discussed in Section 2.

BMP Number	BMP Description	Issue	Action
C-7	Salt Storage Piles	Control measures including covering piles must be described and implemented through the SWPPP.	If salt is used at NAVBASE Kitsap Keyport for ice control, it will be stored to minimize contact with stormwater.
C-8	Employee Training	Employee training is required as a Core BMP under the MSGP.	NUWC Division Keyport will train employees that work in areas where industrial materials or activities are exposed to stormwater, and employees that are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance people) as necessary. Training should focus on the components and goals of the SWPPP and BMPs. Training will be conducted on an annual basis.
C-9	Non-Stormwater Discharges	Permittees must eliminate non-stormwater discharges not authorized by an NPDES permit. See Part 1.1.3 of the MSGP for a list of non-stormwater discharges authorized by this permit.	Non-Stormwater discharges addressed in SWPPP, Section.3.
C-10	Dust Generation and Vehicle Tracking of Industrial materials		
	Dust Generation and Vehicle Tracking of Industrial Materials	Permittees must minimize generation of dust and off-site tracking of raw, final, or waste materials.	Dust and raw material tracking will be controlled through routine good housekeeping measures.

Table 4-3: Sector-Specific BMPs

BMP Number	BMP Description	Issue	Action
Sector N BMPs (Scrap Recycling)			**Applies to the Defense Reutilization Marketing Office (DRMO) Yard**
N-1	Inbound Recyclable and Waste Material Control Program	Minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials.	All inbound materials will be inspected for potential spillable materials.
N-2	Scrap and Waste Material Stockpiles and Storage (Outdoor)	Minimize contact of stormwater runoff with stockpiled materials, processed materials, and non-recyclable wastes.	All stored materials will be covered to the maximum extent practicable. Electronics will be shrink-wrapped or covered with tarps. Metals will be covered or stored in dumpsters with weatherproof lids.
N-3	Stockpiling of Turnings Exposed to Cutting Fluids (Outdoor Storage)	Minimize contact of surface runoff with residual cutting fluids.	Metal turnings will be covered or otherwise protected from exposure.
N-4	Scrap and Waste Material Stockpiles and Storage (Covered or Indoor Storage)	Minimize contact of residual liquids and particulate matter from materials stored indoors or under cover with surface runoff.	Materials will be stored in containers or on pallets to minimize contact with runoff.
N-5	Scrap and Recyclable Waste Processing Areas	Minimize surface runoff from coming in contact with scrap processing equipment.	The electronics grinder was the only scrap processing equipment used at the DRMO yard. Grinding operations ended in 2009.
N-6	Scrap Lead-Acid Battery Program	Properly handle, store, and dispose of scrap lead-acid batteries.	Batteries are not processed at the facility.
N-7	Spill Prevention and Response Procedures	Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.	n/a - No outdoor systems with more than 150 gallons capacity at the DRMO yard.
N-8	Supplier Notification Program	As appropriate, notify major suppliers which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.	DRMO provides guidance to served Navy commands on acceptable materials.

BMP Number	BMP Description	Issue	Action
Sector P BMPs (Land Transportation and Warehousing)			**Applies to Buildings 91-93, 144 and 893**
P-1	Good Housekeeping Measures	Vehicle and Equipment Storage Areas: Minimize the potential for stormwater exposure to leaky or leak-prone vehicles/equipment awaiting maintenance. Fueling Areas: Minimize contamination of stormwater runoff from fueling areas. Material Storage Areas: Maintain all material storage vessels (e.g., for used oil/oil filters, spent solvents, paint wastes, hydraulic fluids) to prevent contamination of stormwater and plainly label them (e.g., "Used Oil," "Spent Solvents," etc.). Vehicle and Equipment Cleaning Areas: Minimize contamination of stormwater runoff from all areas used for vehicle/equipment cleaning. Vehicle and Equipment Maintenance Areas: Minimize contamination of stormwater runoff from all areas used for vehicle/equipment maintenance.	Vehicle maintenance is performed off-site. Fueling station is bermed and covered with runoff draining to an oil/water separator. All material storage containers will be labeled and protected from contact with stormwater. No outdoor vehicle or equipment cleaning is performed at NAVBASE Kitsap Keyport. Sector P vehicle and equipment maintenance is conducted off-site.
P-2	Locomotive Sanding (Loading Sand for Traction)	Consider the following (or other equivalent measures): covering sanding areas; minimizing stormwater run-on/runoff; or appropriate sediment removal practices to minimize the off-site transport of sanding material by stormwater.	Not applicable to NAVBASE Kitsap Keyport, no rail access.
P-3	Employee Training	Train personnel at least once a year and address the following activities, as applicable: used oil and spent solvent management; fueling procedures; general good housekeeping practices; proper painting procedures; and used battery management.	Addressed under Core BMP C-9.

BMP Number	BMP Description	Issue	Action
Sector Q BMPs (Water Transportation)			**Applies to Buildings 6, 33, 48, 85, 200/236 (including Keyport Pier)**
Q-1	Good Housekeeping Measures	Pressure Washing Area: If pressure washing is used to remove marine growth from vessels, the discharge water must be permitted by a separate NPDES permit. Collect or contain the discharges from the pressures washing area so that they are not co-mingled with stormwater discharges authorized by this permit.	Pressure washing shall only take place only in areas that drain to the sanitary sewer or in contained locations which can be pumped out for disposal (e.g., Bldg. 48).
		Blasting and Painting Area: Minimize the potential for spent abrasives, paint chips, and overspray to discharge into receiving waters or the storm sewer systems.	No outdoor blasting or painting is conducted. Grit collection locations will be inspected monthly and cleaned as necessary.
		Material Storage Areas: Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or surface runoff from the storage areas. Specify which materials are stored indoors, and consider containment or enclosure for those stored outdoors. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Consider implementing an inventory control plan to limit the presence of potentially hazardous materials.	All containerized materials will be labeled and stored in protected, secure areas. Hazardous material inventory will be controlled through the Hazardous Material Control and Management Plan.
		Engine Maintenance and Repair Areas: Minimize the contamination of precipitation or surface runoff from all areas used for engine maintenance and repair.	All engine maintenance will be conducted indoors or at the small engine shop on NAVBASE Kitsap Bangor.

BMP Number	BMP Description	Issue	Action
Q-1 (Continued)	Good Housekeeping Measures	Material Handling Area: Minimize the contamination of precipitation or surface runoff from material handling operations and areas (e.g., fueling, paint, and solvent mixing, disposal of process wastewater streams from vessels). Dry Dock Activities: Routinely maintain and clean the dry dock to minimize pollutants in stormwater runoff. Address the cleaning of accessible areas of the dry dock prior to flooding, and at final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, and fuel spills occurring on the dry dock.	Material handling will be conducted indoors to the maximum extent practicable. No dry dock facilities on-site.
Q-2	Employee Training	As part of your employee training program, address, at a minimum, the following activities (as applicable): Used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.	Addressed under Core BMP C-9.
Q-3	Preventive Maintenance	As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil/water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.	Addressed under Core BMP C-3.

BMP Number	BMP Description	Issue	Action
Sector AA BMPs (Fabricated Metals Products)			**Applies to remaining facilities not listed in above sectors**
AA-1	Good Housekeeping Measures	Raw Steel Handling Storage: Minimize the generation of and/or recover and properly manage scrap metals, fines, and iron dust. Include measures for containing materials within storage handling areas. Paints and Painting Equipment: Minimize exposure of paint and painting equipment to stormwater.	All metal fines will be swept or vacuumed from areas with the potential to contact stormwater at least weekly. Painting will be conducted indoors.
AA-2	Spill Prevention and Response Procedures	Ensure that the necessary equipment to implement a cleanup is available to personnel. The following areas should be addressed: Metal Fabricating Areas: Maintain clean, dry, and orderly conditions in these areas. Consider using dry clean-up techniques. Storage Areas for Raw Metal: Keep these areas free of conditions that could cause or impede appropriate and timely response to spills or leakage of materials. Consider the following (or their equivalents): Maintaining storage areas so that there is easy access in the event of a spill, and labeling stored materials to aid in identifying spill contents. Metal Working Fluid Storage Areas: Minimize the potential for stormwater contamination from storage areas for metal working fluids. Cleaners and Rinse Water: Control and clean up spills of solvents and other liquid cleaners; control sand buildup and disbursement from sand-blasting operations; and prevent exposure of recyclable wastes. Substitute environmentally benign cleaners when possible.	Spill prevention and response procedures are addressed in the NAVBASE Kitsap Keyport SPCC and OHS Response plans. (See C-4.)

BMP Number	BMP Description	Issue	Action
AA-2 (Continued)	Spill Prevention and Response Procedures	Lubricating Oil and Hydraulic Fluid Operations: Minimize the potential for stormwater contamination from lubricating oil and hydraulic fluid operations. Chemical Storage Areas: Minimize stormwater contamination and accidental spillage in chemical storage areas. Include a program to inspect containers and identify proper disposal methods.	Spill prevention and response procedures are addressed in the NAVBASE Kitsap Keyport SPCC and OHS Response plans. (See C-4.)
AA-3	Spills and Leaks	In your spill prevention and response procedures, required by Part 2.1.2.4 of the MSGP, pay attention to the following materials (at a minimum): Chromium; toluene; pickle liquor; sulfuric acid; zinc and other water priority chemicals; and hazardous chemicals and wastes.	Addressed under Core BMP C-4.
Note: No sector-specific BMPs required for Sector K, Hazardous Waste Treatment Storage Disposal Facility (TSDF) (Bldg 1051).			

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Table 4-4: Summary of Site-Specific BMPs

Bldg. Number	Facility Description	BMPs
1	[redacted]	None
6	[redacted]	Core C-1and Sector Q
15	[redacted]	Core C-1 and Sector AA
33	[redacted]	Core C-1 and Sector Q
38	[redacted]	Core C-1 and Sector AA
48	[redacted]	Core C-1, C-11 for peeling paint; Core and Sector Q
73	[redacted]	Core C-1 and Sector AA
76	[redacted]	Core C-1
81	[redacted]	Core C-1; Core and Sector AA
82	[redacted]	C-1for storage of materials and uncovered metals bins; Sector Q
84	[redacted]	C-1 for storage of materials; AA-2 for equipment leaks and control of spills
85	[redacted]	C-1 for storage of materials; Core
91	[redacted]	C-11 for peeling paint, C-1 for storage of materials; Core and Sector AA
93	[redacted]	C-11 for peeling paint; P-1 for berms, leaks and overfill protection, oil/water separator; Core and Sector Q
98	[redacted]	C-1 for storage of materials; TBD; Core and Sector AA
105	[redacted]	C-1 for storage of Materials, open metals bins; Core and Sector AA
108	[redacted]	Core
137	[redacted]	C-1 for storage of materials and uncovered metals bins; Core and Sector AA
144	[redacted]	C-1 for storage of materials; Core and Sector AA
186	[redacted]	Core and Sector AA
206	[redacted]	C-1 for storage of materials; Core and Sector AA
207	[redacted]	C-4 for spill materials; Core and Sector AA
208/209/ 1049/ 1060	[redacted]	C-1 for storage of materials, C-4 and AA-2 for spill prevention; Core and Sector AA
221	[redacted]	C-1 for equipment/vehicle washing, C-4 for spill prevention; Core and Sector Q
233	[redacted]	C-1 for storage of materials including exposed metals, Core and Sector AA
234	[redacted]	C-1 for storage of materials; Core and Sector AA

Bldg. Number	Facility Description	BMPs
478		C-1 for storage of materials; label drains storm or sanitary; Core, Sector Q and AA
489		C-1 for storage of materials; C-4 and AA-2 for spill prevention (close storm drains during loading/unloading); Core and Sector AA
514		C-1 for storage of materials; C-4 and AA-2 for spill prevention (close storm drains during loading/unloading); Core and Sector AA
791		C-1 for storage of materials; Core and Sector AA
820		C-1 for storage of materials; Core and Sector AA
824		C-1 for storage of materials; C-2 and AA-1 for housekeeping; label trench drain (to fish)
825		C-1 for storage of materials; Core and Sector AA
880		Core
894		C-1 for storage of materials; Core and Sector AA
940		C-1 for storage of materials; Core and Sector AA
950/951		C-1 for storage of materials; Core and Sector AA
952		C-1 for storage of materials; Core and Sector AA
957/ 1017/ 1018		C-6 for management of run-off; C-1 for storage of materials; Core and Sector N
1002		C-1 for storage of materials; Core and Sector AA
1006		C-1 for storage of materials, C-6 for management of run-off; Core and Sector AA
1050		C-1 for storage of materials, including uncovered metals bins; Core and Sector AA
1055		C-1 for storage of materials, C-6 for management of run-off; Core and Sector AA
1051		C-1 for storage of materials, C-6 for management of run-off; Core and Sector K
1058		C- for storage of materials including exposed metals; Core and Sector AA

4.3 Individual Facility Assessments

This section presents the results of the site-specific industrial facility stormwater pollution-source identification and assessment activities conducted at NAVBASE Kitsap Keyport industrial facilities including new site-specific BMPs.

For each industrial facility, the following items are presented:

- Facility Description: The facility's location, function, and layout are described. A site map is provided.
- Facility Objective: The facility's objective with respect to station operations is stated.
- Stormwater Drainage Description: The drainage patterns at the facility are described in detail. Drainage facilities, structural pollution control measures, and surface water bodies (including wetlands) are identified. These features are also shown on the facility site map and SWPPP base map.
- Material Inventory/Exposed Materials: This section provides an overview of materials used, produced, or stored at each facility. Whenever possible, information regarding quantities used or produced was obtained from the tenant's Authorized Use List (AUL). Handling practices and procedures, materials management practices, storage activities, physical features of the site, and the potential to contribute pollutants to stormwater runoff are discussed and evaluated for significant materials. Additional information regarding quantities used is provided in a copy of the AUL contained in Appendix K. Materials are typically not produced at NAVBASE Kitsap Keyport industrial facilities.
- Significant Spills and Leaks: A summary of all available spill and leak data for the base including information on spills and leaks that have occurred at facilities on base is included in Appendix J. Spill and leak information for the preceding three years are required as part of this SWPPP. Significant spills are also discussed in the applicable facility section.
- Site Assessment Inspection: A narrative of the findings during the site assessment inspection is provided. Specifically, potential pollutant sources were identified that may or may not potentially pose a risk to stormwater quality. The following high-risk waste generating areas and activities were included as sources: long-term vehicle parking; treatment, storage or waste disposal areas; liquid storage tanks; processing areas; loading/unloading areas; garbage dumpsters; vehicle washing; maintenance areas; and exposed significant materials.
- BMPs: BMPs identified to minimize contact of materials with rainfall and stormwater runoff or existing measures used to treat potentially contaminated runoff (e.g., oil/water separators, secondary containment) are identified. Table 4-4 summarizes BMPs for the stormwater pollutant source activities for each facility.
- Core BMPs: Core BMPs are those required in part 8 of the MSGP that generally apply to all industrial areas at Bangor.
- Sector-Specific BMPs: Sector-specific BMPs contained in part 8 of the MSGP must be considered for those portions of NAVBASE Kitsap Bangor that fall into one of the industrial sectors defined in the MSGP.

4.3.1 Building 1 - [redacted]

Facility Description: Building 1 is a two-story structure located in the central portion of the NAVBASE Kitsap Keyport industrial area [redacted] The equipment was removed and the building sat for years awaiting demolition. The building has since undergone asbestos/lead abatement and is currently being renovated inside. This building will eventually be used as offices and will be removed from the SWPPP. A detailed site map including the outside area of the facility is shown as Figure 4-1.

Facility Objective: Building 1 is currently under renovation.

Stormwater Drainage Facility Description: Stormwater runoff in the building area generally drains radially to all sides. The building is surrounded by impervious surfaces, and there are catch basins located on the north, south, and west sides of the building. The building lies within drainage basin KDB03.

Materials Inventory: None ate this time.

Significant Spills and Leaks: There have been no reported spills of any significant materials at Building 1in the past eight years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- During the 2013 site visit, the building was inactive and scheduled for demolition. The facility will be retained in the SWPPP until demolition is completed.
- During the 2013, 2014, 2015 site investigations, significant exterior peeling paint was observed.
- Building exterior (brick) was stripped of all paint during lead/asbestos abatement project in 2018/2019.

BMPs: None at this time.

Figure 4-1: [redacted]

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4.3.2 Building 6 - [redacted]

Facility Description: Building 6 is a two-story structure located in the northern portion of NAVBASE Kitsap, Keyport, near [redacted]. A detailed site map including the outside area of the facility is shown as Figure 4-6. Sector Q.

Facility Objective: Building 6 is used [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. The building is surrounded by impervious surfaces, and there are catch basins located on the north and west sides of the building. The building lies within drainage basin KDB02.

Materials Inventory: Primary materials stored in the building and used on-site include gasoline and oils. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 6 in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- Small boats are periodically rinsed behind the building using potable water with no detergents.
- During 2013 inspection, NAVFAC Northwest personnel performed a dye test in the shower drain. No discharge was found into the adjacent bay outfalls.
- Peeling paint removed and building repainted in 2017.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-6: [redacted]

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4.3.3 Building 15 – [redacted]

Facility Description: Building 15 is a one-story structure located in the center of the industrial area. The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-15. Sector AA.

Facility Objective: Building 15 is used [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the north into Liberty Bay. Paved areas surround the building. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory. No materials were exposed during the past three year site visits.

Significant Spills and Leaks: No spills have occurred in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- Small potable water leak caused a small amount of water to flood one of the empty storage areas in 2020.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-15: [redacted]

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4.3.4 Building 33 - [redacted]

Facility Description: Building 33 is a one-story structure located at the northwestern end of the industrial area, adjacent to Keyport Pier (Building 221[redacted] was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-33. Sector Q.

Facility Objective: Building 33 was used [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to Liberty Bay directly as the building is located on the seawall. The building lies within drainage basin KDB02.

Materials Inventory: Primary materials used and stored on-site include fuels, oils, and paint. See Appendix K for the building material inventory.

Significant Spills and Leaks: There was a 100-gallon paint and paint wash water spill in February 1997.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded:

- The building is a [redacted]
- The building has been recently re-painted. No issues were observed during the past three years.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-33: [redacted]

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4.3.5 Building 38 - [redacted]

Facility Description: Building 38 is a one-story high-bay structure located at the western edge of the industrial area [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-38. Sector AA.

Facility Objective: [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building downspouts is hard piped to the south into Liberty Bay. Surface flow moves to the southeast. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB03.

Materials Inventory: Primary materials stored and used at the site include exposed steel stock and containerized cutting fluids. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 38 for the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site was reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- The facility stores a significant amount of metal stock, mostly under a shed roof cover in the southeast corner of the building. Some stock was stored on the ground outside the cover. Scrap dumpsters have been noted with missing lids. In 2013, all metal was under cover.
- Uncovered metal stock is stored on the north side uncovered on pallets. The SWPPP has been updated to allow for two weeks of temporary storage.

BMPs: C-1 for storage of materials, C-2 for trench drain; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-38: [redacted]

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4.3.6 Building 48 – [redacted]

Facility Description: Building 48 is a two-story structure located at the northwestern edge of the industrial area near Keyport Pier (Building 221). [redacted]. A detailed site map including the outside area of the facility is shown as Figure 4-33. Sector Q.

Facility Objective: Building 48 is [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows directly north into Liberty Bay. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: The primary materials used and stored on-site include fuels and oils. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 48 in the past three years.

Site Assessment Inspection: The original field survey was conducted in October 1997. The site has been reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Significant peeling exterior paint observed during 2016 inspection. The building was repainted by the 2017 inspection.

Existing BMPs: C-1 for storage of materials, washing of equipment, C-6 for management of run-off, C-11 for peeling paint; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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4.3.7 Building 73 – [redacted]

Facility Description: Building 73 is a two-story structure with a high-bay workshop located at the western edge of the industrial area next to Dedrick Drive. The building was investigated as part of the stormwater survey [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-73. Sector AA.

Facility Objective: Building 73 is a [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the north and is piped into Liberty Bay. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: The primary materials stored at the site with the potential for contacting stormwater were oils. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks in the past three years.

Site Assessment Inspection: The original field survey was conducted in October 1997. The site has been reassessed regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- [redacted] hazardous waste and material stored on SW exterior; scrap metals recycling on SE corner.

Existing BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Table 4-2 and 4-3.

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Figure 4-73: [redacted]

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4.3.8 Building 76 - [redacted]

Facility Description: Building 76 is a one-story structure with a basement located near the northwestern corner of the base near Gate 1. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-76. Sector N/A.

Facility Objective: [redacted] The facility is not considered an industrial activity, but it was retained in the SWPPP because of illicit discharges noted during the 1997 site visits.

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the west into an off-station marsh. The building is surrounded by impervious surfaces except for a small grassy area on the east side. The building lies within drainage basin KDB01.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 76 in the past three years.

Site Assessment Inspection: The original field survey was conducted in October 1997. The site has been reassessed regularly since September 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- Vehicle washing is conducted on the south side of the building. Wash water flows to a sump that discharges into the sanitary sewer. In 2018 it was discovered that sometime in the past the sump pump had failed, was not repaired, and the concrete separator in trench forcing washwater to sump was knocked out allowing wash water to enter stormwater portion of trench going to outfall 01-730. Washing is still prohibited on site and a project to repair trench is awaiting funding.
- In 2021 the parking bay floor drains were dye tested revealing that they go to stormwater. The drains are temporarily plugged and a project is awaiting funding to re-route them to sanitary sewer.

BMPs: C-1 for vehicle and equipment washing, C-6 for management of run-off.

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Figure 4-76: [redacted]

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4.3.9 Building 81 - [redacted]

Facility Description: Building 81 is a two-story structure located near the southwestern corner of the industrial area on Dedrick Avenue. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-81. Sector AA.

Facility Objective: Building 81 is [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the south into Liberty Bay. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB03.

Materials Inventory: The primary material with the potential for spill/exposure to stormwater is Alodine. See Appendix K for the building material inventory.

Significant Spills and Leaks: No spills or leaks have occurred in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in May 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- [redacted] Cooling water either is within a closed loop system or discharges to the sanitary sewer.

BMPs: C-1 for storage of materials, C-6 for management of run-off.

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Figure 4-81: [redacted]

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4.3.10 Building 82 - [redacted]

Facility Description: Building 82 is a two-story structure located next to Hunnicutt Road in the southern section of the industrial area. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-82. Sector Q.

Facility Objective: Building 82 is the [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the south into Liberty Bay. The building is surrounded by impervious surfaces on all sides. The wash area on the east side is covered and contained to collect runoff. The building lies within drainage basin KDB03.

Materials Inventory: The primary materials with the potential for exposure are oils, acids, and scrap metal. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 82 in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in May 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded during the past three years:

- [redacted].

BMPs: C-1 for storage of materials and washing of equipment; Q-1 for maintenance activities; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-82: [redacted]

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4.3.11 Building 84 - [redacted]

Facility Description: Building 84 is a two-story structure located in the center of the industrial area next to 2nd Street. The building was investigated as part of the stormwater survey [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-84. Sector AA.

Facility Objective: Building 84 is [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. The building is surrounded by impervious surfaces on all sides. The building lies within drainage basin KDB02.

Materials Inventory: The primary materials stored at the site include paints and sandblast grit. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no significant spills recorded at Building 84 in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in April 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- No issues were observed.

BMPs: C-1 for storage of materials, C-4 for spill prevention and response.

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Figure 4-84: [redacted]

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4.3.12 Building 85 - [redacted]

Facility Description: Building 85 is a one-story structure located near the center of the industrial area next to Groner Street. The building was investigated as part of the stormwater survey [redacted]. A detailed site map is included as Figure 4-85. Sector AA.

Facility Objective: Building 85 is currently used by [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. The building is surrounded by impervious surfaces on all sides. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks reported at Building 85 in the past three years.

Site Assessment Inspection: The original field survey was conducted in May 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- All materials were stored inside or under cover.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-85: [redacted]

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4.3.13 Building 91 - [redacted]

Facility Description: Building 91 is a one-story structure located on Dedrick across from [redacted] The building was investigated as part of the stormwater survey. A detailed site map is included as Figure 4-91. Sector AA.

Facility Objective: Building 91 is used [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. The building is surrounded by impervious surfaces on all sides. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills reported at Building 91 during the past three years.

Site Assessment Inspection: The original field survey was conducted in May 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- All materials were stored inside.

BMPs: C-1 for storage of materials, C-11 for peeling paint; Core and Sector-specific requirements contained in Table 4-2 and 4-3.

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Figure 4-91: [redacted]

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4.3.14 Building 93 - [redacted]

Facility Description: Building 93 is a one-story structure located near the northwestern corner of the industrial area near Keyport Pier (Building 221). The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-93. Sector P.

Facility Objective: Building 93 serves [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. [redacted] and all stormwater flows through an oil/water separator before discharge. [redacted] is bordered by grass on the west side and gravel on the east. The driveway runs north to south through the covered area. The building lies within drainage basin KDB02.

Materials Inventory: [redacted] Building 93, [redacted]. The inventory can total up to [redacted].

Significant Spills and Leaks: There have been no spills or leaks of a reportable quantity at Building 93 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- No past fuel spillage was noted.
- Building was repainted in 2017.

BMPs: C-4 for spill prevention and response, C-6 for management of run-off, C-11 for peeling paint; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-93: [redacted]

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4.3.15 Building 98 - [redacted]

Facility Description: Building 98 is a two-story structure located at the eastern end of the industrial area on 2nd Street. The building was investigated as part of the stormwater survey [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-98, pages 1 and 2. Sector AA.

Facility Objective: Building 98 is [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. The building is surrounded on all sides by impervious surfaces. The building lies within drainage basin KDB03.

Materials Inventory: The primary materials stored on-site are oils and glycols. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 98.

Site Assessment Inspection: The original SWPPP field survey was conducted in May 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- Catch basin inside of building next to [redacted] rerouted to sanitary sewer.

BMPs: C-1 for storage of materials, C-9 for labeling drains (Employee Training).

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Figure 4-98: [redacted]

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4.3.16 Building 105 - [redacted]

Facility Description: Building 105 is a two-story structure located at the southwestern end of the industrial area on Hunnicutt Road. The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-105, pages 1-4. Sector AA.

Facility Objective: Building 105 is a [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the south into Liberty Bay. The building is surrounded on all sides by impervious surfaces and there is a parking lot on the west side. The building lies within drainage basin KDB03.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks reported in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded during the past three years:

- Peeling paint on building trim was removed and trim repainted in 2020.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-105: [redacted]

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4.3.17 Building 106 – [redacted]

Facility Description: Building 106 is a one-story structure located at the southwestern edge of the industrial area on the shore of the shallow lagoon. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-106. Sector AA.

Facility Objective: Building 106 used to be [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows directly southeast into the lagoon. Grassy areas surround the building with a small patio on the lagoon side. The building lies within drainage basin KDB04.

Materials Inventory: No materials currently stored.

Significant Spills and Leaks: There have been no spills or leaks reported for the past three years

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Some small lead boat brow test weights were observed, currently kept undercover.

BMPs: Core requirements contained in Table 4-2.

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Figure 4-106: [redacted]

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4.3.18 Building 108 - [redacted]

Facility Description: Building 108 is located in the southwest corner of the base along Bradley Road. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-108. Sector inactive.

Facility Objective: Building 108 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows via sheet flow to a ditch on the west side of the building. Flows pass under Bradley Road and into the marsh west of the building. The building lies within drainage basin KDB08.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 108.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded:

- Mud was being tracked up from area between 108 and 1044 during 1044 insulation replacement project. New gravel has since been spread to eliminate mud track out.

BMPs: C-1 for storage of materials; Core BMPs

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Figure 4-108: [redacted]

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4.3.19 Building 137 - [redacted]

Facility Description: Building 137 is a one-story structure located at the northwestern end of the industrial area on Dedrick Drive. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-137. Sector AA.

Facility Objective: Building 137 is the [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east into Liberty Bay. The building is surrounded on all sides by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks reported at Building 137 for the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in May 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- All work is performed inside and materials are stored inside.
- Roll up door on south side is just starting to peel.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-137: [redacted]

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4.3.20 Building 144 - [redacted]

Facility Description: Building 144 is located in the southwestern portion of the base at the intersection of Pritchard and "A" Streets. A detailed site map including the outside area of the facility is shown as Figure 4-144. Sector AA.

Facility Objective: Building 144 is used [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows into a series of catch basins to the south of the building ultimately discharging into the lagoon through outfall 04-727. Building 144 lies within drainage basin KDB04.

Materials Inventory: Primary materials stored on-site are torpedo canisters. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 144 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- No exposed significant materials were noted during site visits.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-144: [redacted]

4.3.21 Building 186 – [redacted]

Facility Description: Building 186 is located at the very east end of the base, east of Hunnicutt Drive. The building is surrounded by impervious surfaces on three sides and by beach and vegetation on the east side. A detailed site map including the outside area of the facility is shown as Figure 4-186. Sector AA.

Facility Objective: Building 186 is used [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows east and ultimately to Liberty Bay. Building 186 lies within drainage basin KDB04.

Materials Inventory: No materials have been stored outside. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 144 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- No exposed significant materials were noted during site visits.

BMPs: Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

4.3.22 Building 206 – [redacted]

Facility Description: Building 206 is a two-story structure located at the southwestern edge of the industrial area on Hunnicutt Road. The building was investigated as part of the stormwater survey [redacted]. A detailed site map including the outside area of the facility is shown as Figures 4-206, pages 1 and 2. Sector AA.

Facility Objective: Building 206 is [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the south into the shallow lagoon. Grassy areas surround the building and there is a parking lot on the east side. The building lies within drainage basin KDB04.

Materials Inventory: See Appendix K for the building material inventory. No materials were exposed at the time of the 2009 site visit.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 206.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

Hazardous materials and compressed gases are stored inside, as well as in the courtyard area on the south side of the building. No issues were noted.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-206: [redacted]

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4.3.23 Building 207 - [redacted]

Facility Description: Building 207 is a one-story structure located in the western section of the station near parking lot #4A. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-207. Sector AA.

Facility Objective: Building 207 [redacted].

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the south into the shallow lagoon. Grassy areas surround the building, and there is a parking lot on the north side. The building lies within drainage basin KDB04.

Materials Inventory: See Appendix K for the building material inventory. Exposed materials include steel stock sitting exposed to the weather.

Significant Spills and Leaks: There have been no reported spills at Building 207.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded:

- In 2018 an internal floor drain was evaluated and found to go to stormwater, the drain is marked and only serves the firemain water backflow preventer/strainer flush drains.

  BMPs: C-4 for spill prevention and response; C-9 for employee training (identification of drains).

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Figure 4-207: [redacted]

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4.3.24 Building 208/209/1049/1060 - [redacted]

Facility Description: Buildings 208, 209, 1049, and 1060 are located in the southwestern section of the station near the shallow lagoon. The buildings are all one-story structures that have been investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-208. Sector AA.

Facility Objective: [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the south into the shallow lagoon. Grassy areas surround the building and there are storm drains nearby the containment area. The catch basin on the southeast corner of the site can be closed by a manually operated valve in the event of spill. Storm drain catch basin 208-1, which is closest to the containment area, flows to outfall 04-728 without any containment valving. The parking lot for the TSDF is directly to the west of the site. The building lies within drainage basin KDB04.

Materials Inventory: [redacted] are stored at Buildings 208, 209, and 1049. [redacted]

Significant Spills and Leaks: There have been no spills or leaks in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- It was observed in 2013 that the containment berm for fueling does not cover enough area and the pavement is very cracked. The project to rectify this was completed in 2018.

BMPs: C-1 for storage of materials, C-9 for employee training (access restrictions), C-6 for spill prevention.

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Figure 4-208: [redacted]

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4.3.25 Building 221 – [redacted]

Facility Description [redacted] is located at the northeast corner of the industrial area on Dedrick Drive. The [redacted] has been investigated as part of the stormwater survey. [redacted] See Figure 4-2 for a detailed site map. Sector Q.

Facility Objective: [redacted]

Stormwater Drainage Facility Description: Stormwater runoff flows off the pier into Liberty Bay. The Pier lies within drainage basin KDB02.

Materials Inventory: There are no significant hazardous materials stored on the pier. Ship sewage is occasionally stored on the pier in a plastic holding tank.

Significant Spills and Leaks: There have been no spills or leaks in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site was revisited in March 2006 by NAVFAC Northwest personnel as part of the SWPPP update. The following observations were recorded for the past three years:

- One spill kit was available on the [redacted] during inspections.

BMPs: C-1 for washing of equipment and vehicles, C-4 for spill prevention; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-221: [redacted]

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4.3.26 Building 233 - [redacted]

Facility Description: Building 233 is a one-story high-bay structure located at the western edge of the industrial area. The building was investigated as part of the stormwater survey. [redacted]. A detailed site map including the outside area of the facility is shown as Figure 4-233. Sector AA.

Facility Objective: Building 233 is used [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building downspouts is hard piped to the south into Liberty Bay. Surface flow moves to the southeast. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB03.

Materials Inventory: Primary materials stored and used at the site include metal stock, cuttings, oil, and lubricants. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 233 over the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Metals that were stored in alley under tarps were all moved under cover in 2019.
- Process for water jet cutter waste media now includes a plastic liner for the waste dumpster to prevent leakage.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-233: [redacted]

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4.3.27 Building 234 – [redacted]

Facility Description: Building 234 is a one-story structure located in the center of the industrial area along Maynard Street. The building was investigated as part of the stormwater survey [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-234. Sector AA.

Facility Objective: Building 234 provides [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east to Liberty Bay. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB03.

Materials Inventory: Primary materials stored and used on-site include diesel fuel and compressor oil. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks over the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in November 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded over the past three years:

- Condensate drains to the floor drain after passing through filters designed to remove residual oil. The drain discharges to a sump that enters the sanitary sewer.
- In 2017 it was discovered that an old backup air compressor used cooling water that was routed to an outside catch basin, cooling water was re-routed to sanitary sewer.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-234: [redacted]

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4.3.28 Building 478 - [redacted]

Facility Description: Building 478 is a two-story structure located at the northwest corner of the industrial area on the corner of Strom Avenue and Dedrick Drive. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-478. Sector AA.

Facility Objective: Building 478 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows to the east to Liberty Bay. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: The primary materials used on-site include oil, paints, and solvents. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 478 for the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- [redacted].

Existing BMPs: C-1 for storage of materials, C-9 for employee training (labeling drains).

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Figure 4-478: [redacted]

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4.3.29 Building 489 - [redacted]

Facility Description: Building 489 is a one-story structure located in the center of the industrial area on 2nd Street. The building was investigated as part of the stormwater survey. [redacted] A detailed site map including the outside area of the facility is shown as Figures 4-489, pages 1 and 2. Sector AA.

Facility Objective: Building 489 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows east to Liberty Bay. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: The primary materials stored and used on-site include [redacted]. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- No issues were observed.

Existing BMPs: C-1 for storage of materials; C-9 for employee training (closing drains during transfers).

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Figure 4-489: [redacted]

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4.3.30 Building 514 - [redacted]

Facility Description: Facility 514 is located at the northeast corner of the NAVBASE Kitsap Keyport. The building includes one structure that incorporates several additions. The building was investigated as part of the stormwater survey [redacted] A detailed site map including the outside area of the facility is shown as Figure 4-514. Sector AA.

Facility Objective: Building 514 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area generally drains to the north. A road and grassy strip are located between the building and Liberty Bay with surface runoff crossing these areas. There is a small parking lot located on the eastern side of the building with a few parking spaces located on the southern side in the street. There are five catch basins located around the outside of the building and the roof downspouts are hard piped to the stormwater system. The building lies within drainage basin KDB02.

Materials Inventory: The primary materials stored and used on-site include [redacted]. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no spills or leaks in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- Facility personnel indicated that gel mats are used to close off nearby storm drains when material or waste is transferred.
- [redacted] cooling water chiller was repaired in 2018, potable water backup that was discharging to storm downspout until chiller was repaired was disconnected from downspout.

BMPs: C-1 for storage of materials, Divert Drainage to a Low-Flow Sump (097), C-9 for employee training (closing drains during transfers).

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Figure 4-514: [redacted]

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4.3.31 Building 791 - [redacted]

Facility Description: Building 791 is located in the western portion of the base along Bradley Road. A detailed site map including the outside area of the facility is shown as Figure 4-791. Sector AA.

Facility Objective: Building 791 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building flows by sheet flow into ditches on the east and west sides of the building. Runoff eventually enters the wetlands and marsh west of the storage shelter. The facility lies within drainage basin KDB08.

Materials Inventory: The facility [redacted] See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 791in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- All equipment as of 2019 is all under cover. Excess equipment was removed from the area.

Existing BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-791: [redacted]

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4.3.32 Building 820 - [redacted]

Facility Description: Building 820 is located in the western section of NAVBASE Kitsap Keyport near Bradley Road. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-820. Sector AA.

Facility Objective: Building [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the west and eventually into the salt marsh. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB04.

Materials Inventory: Materials stored and used on-site include oils, paints, sodium hydroxide, and lithium contaminated wastewater. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 820 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Decontamination portion of building currently not used but is planned to be used in future.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-820: [redacted]

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4.3.33 Building 824 - [redacted]

Facility Description: Building 824 is located in the western section of NAVBASE Kitsap Keyport near Bradley Road [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-824. Sector AA.

Facility Objective: Building 824 is [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the west and eventually into the salt marsh. The building is bordered by grass on two sides and impervious surface on two sides. The building lies within drainage basin KDB08.

Materials Inventory: The primary exposed materials include metals. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 824 for the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- In 2020 all metal stock that was always outside under tarps was recycled or put under cover.

Existing BMPs: C-1 for storage of materials, C-2 for housekeeping, C-9 for employee training (labeling drains); Core and Sector –specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-824: [redacted]

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4.3.34 Building 825 - [redacted]

Facility Description: Building 825 is located in the center of the industrial area on 2nd Street. [redacted] The building was investigated as part of the stormwater survey. There are several hard pipe connections to Building 825 from various buildings on station. A detailed site map including the outside area of the facilities is included as Figure 4-825. Sector AA.

Facility Objective: [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the east and eventually into Liberty Bay. The building is entirely self-contained and stormwater from the tank yard is collected in a sump for treatment. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory. No materials are stored outside.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 825 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- The entire facility is self-contained and drains to a sump for treatment.
- No materials are stored outside.

BMPs: C-1 for storage of materials, Divert Drainage to Treatment Facility/Sanitary Sewer; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-825: [redacted]

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4.3.35 Building 880 – [redacted]

Facility Description: Building 880 is located adjacent to Keyport Pier in the north end of the base. A detailed site map including the outside area of the facilities is included as Figure 4-880. Sector undesignated.

Facility Objective: The building is [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the east and eventually into Liberty Bay and a catch basin that discharges to 02-703. The building is surrounded by impervious surfaces on three sides and a seawall on the east side. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory. Some materials are stored outside. A cover is provided, but not always used

Significant Spills and Leaks: There have been no reported spills or leaks at Building 880 for the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Nothing noted.

BMPs: C-1 for storage of materials, Divert Drainage to Treatment Facility/Sanitary Sewer; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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4.3.36 Building 894 – [redacted]

Facility Description: Building 894 is located at the western edge of the industrial area on Dedrick Avenue. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-894. Sector AA

Facility Objective: Building 894 contains [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the east and is piped into Liberty Bay. The building is surrounded by impervious surfaces with the exception of a small grassy area to the south. There are parking areas on the east and north sides of the building. The building lies within drainage basin KDB02.

Materials Inventory: Primary significant materials include agitene, oils, and scrap metal. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 894 for the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Galvanized shelving parts stored in back are now covered with an industrial grade tarp.

BMPs: C-1 for storage of materials, C-2 for conducting maintenance indoors; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-894: [redacted]

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4.3.37 Building 940 - [redacted]

Facility Description: Building 940 is located at the southwestern area of NAVBASE Kitsap Keyport next to parking lot 4A. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-940. Sector AA.

Facility Objective: Building 940 contains [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the south and is piped into the shallow lagoon. The building is surrounded by impervious surfaces with the exception of a small gravel area on the west side. There is a parking area on the north side of the building. The building lies within drainage basin KDB04.

Materials Inventory: See Appendix K for the building material inventory. No exposed significant materials were noted outside.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 940 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Metals outside are all covered.

BMPs: C-1 for storage of materials including temporary storage; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-940: [redacted]

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4.3.38 Buildings 950/951 - [redacted]

Facility Description: Buildings 950 and 951 are located near the western edge of the station on Bradley Road near the salt marsh. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-950. Sector AA.

Facility Objective: Buildings 950 and 951 [redacted].

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the west and is piped into the salt marsh. The building is surrounded by impervious surfaces and there is a large parking lot on the west side of the building across Bradley Road. The building lies within drainage basin KDB08.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills or leaks at Buildings 950 and 951 during the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in October 1997. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- No issues observed.

BMPs: C-1 for storage of materials, C-2 for conducting maintenance indoors; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-950: [redacted]

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4.3.39 Building 952 – [redacted]

Facility Description: Building 952 is located in the southwestern area of the station [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-952. Sector AA/inactive.

Facility Objective: Building is used for range test equipment storage.

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the south and is piped into the shallow lagoon. The building is surrounded by impervious surfaces with the exception of a gravel area on the east side. There is a parking area on the north side of the building. The building lies within drainage basin KDB04.

Materials Inventory: Building inactive.

Significant Spills and Leaks: There have been no reported spills or leaks at Building 952 in the past three years.

Site Assessment Inspection: The original SWPPP field survey was conducted in June 1996. The site has been reassessed regularly since March 2006 by NAVFAC Northwest personnel. The following observations were recorded from the past three years:

- Covered metals stored outside occasionally require tarp replacement.

BMPs: C-1 for storage of materials, including temporary storage; C-10 for future diversion of floor drains if facility is reactivated.

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Figure 4-952: [redacted]

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4.3.40 Building 957/1017/1018 - [redacted]

Facility Description: Building 957 is located in southwestern corner of the base along Van Meter Road. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-957. Sector N.

Facility Objective: The facility serves as [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the paved areas and the building travels via sheet flow generally to the north and east before entering two filterra stormwater bioretention system units prior to discharge to the environment. The facility lies within drainage basin KDB07.

Materials Inventory: See Appendix K for the building material inventory. The primary exposed materials at the site are metals waiting recycling.

Significant Spills and Leaks: No spills or leaks have occurred in the past three years.

Site Assessment Inspection: The Disposal Facility was not included in the original NAVBASE Kitsap Keyport SWPPP. The site was visited in April and August 2006 as part of the 2006 SWPPP update and has been reassessed regularly since by NAVFAC Northwest personnel. The following observations were recorded during the past three years:

- Filterras needing maintenance added to BOSC contract.

BMPs: C-1 for storage of materials, C-6 for management of runoff; Core and Sector N control measures are contained in Tables 4-2 and 4-3.

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Figure 4-957: [redacted]

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4.3.41 Building 1002 - [redacted]

Facility Description: Building 1002 is located in northwestern corner of the industrial area between Buildings 489 and 514. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-1002. Sector AA.

Facility Objective: Building 1002 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the north and east and is piped into Liberty Bay. The building is surrounded by impervious surfaces, and there is limited parking on the west side. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 1002 for the past three years.

Site Assessment Inspection: The original field survey was conducted in October 1997. The site was revisited regularly since 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- All material was stored under cover.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-1002: [redacted]

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4.3.42 Building 1006 - [redacted]

Facility Description: Building 1006 is located in the southwestern portion of the station at the intersection of Bradley Road and Prichard Street. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-1006. Sector AA.

Facility Objective: Building 1006 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the northeast and into the shallow lagoon. Grassy areas surround the building, and wetlands are located on the northeast side. Loading dock trench drains at the building flow to spill containment tanks. There is a small parking area between the wetland and the building. The building lies within drainage basin KDB04.

Materials Inventory: Materials include solvents and paints. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 1006 for the past three years.

Site Assessment Inspection: The original field survey was conducted in October 1997. The site has been reassessed regularly since April 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- All metal equipment removed from the lot in 2019.

BMPs: C-1 for storage of materials, C-6 for management of runoff; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-1006: [redacted]

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4.3.43 Building 1050 - [redacted]

Facility Description: Facility 1050 is a two-story structure located at the northwest corner of the industrial area on Dedrick Drive and H Street. [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-1050. Sector AA.

Facility Objective: Building 1050 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows north through catch basins into Liberty Bay. There is a small parking lot located on the southern side of the building with a few parking spaces located on the western side as well. The building lies within drainage basin KDB02.

Materials Inventory: Material with the potential for exposure to stormwater includes scrap metal. See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 1050 for the past three years.

Site Assessment Inspection: A field survey was conducted in October 1997 and no significant risks to stormwater were found. The site has been reassessed regularly since April 2006 by NAVFAC Northwest personnel. The following observations were recorded for the past three years:

- Occasionally the metal recycling bins are overfilled where the lids won't close.
- A manlift stored outside had a leak from a wheel drive gearbox, was moved inside for repair and oil puddle cleaned up.

BMPs: C-1 for storage of materials; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-1050: [redacted]

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4.3.44 Building 1051 - [redacted]

Facility Description: Building 1051 is a one-story structure located in the western portion of the station on the corner of Bradley Road and Gadberry Street [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-1051. Sector K.

Facility Objective: Building 1051 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the building area flows both east to the shallow lagoon and west to the salt marsh. All stormwater runoff from the covered outdoor loading areas of the building is collected by sump. The stormwater from the parking lot and fenced area on the east side flows to a retention basin and through an oil/water separator on its way to outfall 04-728 and the lagoon. Runoff from the west side of the building enters a ditch and flows to the salt marsh. The building lies within drainage basin KDB08.

Materials Inventory: Building 1051 [redacted] for the station and contains a variety of both liquid and solid wastes. The amount of materials present depends on workloads on station and when materials are shipped off-station from the TSDF. Building 1051 contains materials which would contribute pollutants to stormwater runoff if exposed. See Appendix K for the building material inventory.

Significant Spills and Leaks: In 2015, there was a 9-gallon spill [redacted] inside the building. No other spills or leaks occurred during the past three years.

Site Assessment Inspection: The site was visited in April 2006 as part of the 2006 SWPPP update and has been reassessed regularly since by NAVFAC Northwest personnel. The following observations were noted for the past three years:

- Much of the metal equipment in the east storage lot has been removed in 2019.

Existing BMPs: C-1 for storage of materials, C-6 for management of run-off; Core and Sector-specific requirements contained in Tables 4-2 and 4-3

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Figure 4-1051: [redacted]

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4.3.45 Building 1055 – [redacted]

Facility Description: Building 1055 is located in the center of the industrial area on 2nd Street. The building currently houses forklifts and their chargers [redacted] The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facilities is included as Figure 4-1055.

Facility Objective: Building 1055 [redacted]

Stormwater Drainage Facility Description: Stormwater runoff in the building area flows to the east and eventually into Liberty Bay. The building is entirely self-contained and covered. The building is surrounded by impervious surfaces. The building lies within drainage basin KDB02.

Materials Inventory: See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 1055 for the past three years.

Site Assessment Inspection: The original field survey was conducted in October 1997. The site has been reassessed regularly since April 2006 by NAVFAC Northwest personnel. The following observations were noted for the past three years:

- No issues noted.

Existing BMPs: C-1 for storage of materials, C-6 for management of run-off; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-1055: [redacted]

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4.3.46 Building 1058 - [redacted]

Facility Description: Building 1058 is located in the industrial area along Hunnicut Road. The building was investigated as part of the stormwater survey. A detailed site map including the outside area of the facility is shown as Figure 4-1058. Sector AA

.

Facility Objective: Building 1058 was [redacted]

Stormwater Drainage Facility Description: Stormwater runoff from the paved area to the north and east of the building drains into a series of catch basins and through outfall 03-716 into Liberty Bay. Drainage from the south and west sides of the building drains to outfall 03-717. The building lies within drainage basin KDB03.

Materials Inventory: The facility receives and uses [redacted] See Appendix K for the building material inventory.

Significant Spills and Leaks: There have been no reported spills at Building 1058.

Site Assessment Inspection: The facility was constructed after the original SWPPP was in place. The site was visited in April 2006 by NAVFAC Northwest personnel as part of the SWPPP update and has been reassessed regularly since. The following observations were noted:

- The grit separator and wet scrubber on the north end of the building have not been used since 2008.
- [redacted] were stored in tanks on the north end of the building. The tanks are located in a covered area in a large sump.

Existing BMPs: C-1 for storage of materials, C-4 for spill prevention; Core and Sector-specific requirements contained in Tables 4-2 and 4-3.

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Figure 4-1058: [redacted]

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5 Stormwater Analytical Monitoring

Section 5 provides the basis for characterizing stormwater discharges at NAVBASE Kitsap Keyport. The objective of the stormwater monitoring program is to collect stormwater discharge samples that are representative of the conditions at outfalls that drain industrial areas at NAVBASE Kitsap Keyport in order to identify types and amounts of pollutants present. A stormwater monitoring program has been developed for NAVBASE Kitsap Keyport based on the sampling requirements outlined in the 2021 MSGP. Existing stormwater sampling data is also summarized in this section. The results of the monitoring program will allow for the characterization of the stormwater discharges and targeted pollution prevention measures.

5.1 Existing Stormwater Data

Existing stormwater sampling data includes the illicit discharge sampling and the baseline monitoring performed at NAVBASE Kitsap Keyport in 1996, monitoring conducted under the MSGP in 2004, monitoring conducted under the 2008 MSGP, and monitoring conducted under the 2105 MSGP.

In 1996, 17 outfalls as well as three infalls to the station were sampled. A summary of this monitoring data is available electronically.

In 2004, five outfalls associated with industrial activity were sampled in accordance that MSGP requirements. Results of this sampling are available electronically.

In 2009, six outfalls associated with industrial activity were sampled in accordance with the 2008 MSGP requirements. Results of this sampling are available electronically.

In 2017, eight outfalls associated with industrial activity were sampled in accordance with the 2015 MSGP. Analytical monitoring results for the current 2015 MSGP term are in Table 5-1 and Table 5-2. Table 5-1 is benchmark and impaired sampling for first full year of sampling. Table 5-2 is additional monthly copper and zinc sampling that was assigned for 2015 MSGP permit term.

5.2 Multi-Sector General Permit Requirements

5.2.1 General Monitoring Requirements

The 2021 MSGP contains several different types of monitoring provisions:

- Quarterly benchmark monitoring
- Quarterly indicator monitoring
- Annual effluent limitations guidelines monitoring
- Discharges to impaired receiving waters monitoring
- Discharges to Puget Sound Sediment Cleanup Sites
- Other monitoring as required by EPA

Specific requirements, sampling collection, and reporting requirements associated with these provisions are provided in Sections 5.3.2, 5.3.3, 5.3.4 and 5.3.5 respectively.

Quarterly Benchmark monitoring is required in the first year of the permit cycle under the 2021 MSGP and then again in the fourth year of permit coverage. Following the first year, quarterly data may be evaluated in an effort to discontinue sampling. If the average concentration of a pollutant at an outfall is less than the Benchmark values shown in Table 5.7, monitoring the outfall for that pollutant is not required until the beginning of the fourth year of permit coverage. Full quarterly benchmark monitoring starts again at the beginning of the fourth year and then the data may be evaluated once more in an effort to discontinue sampling.

If the average of the four monitoring values for any parameter exceeds the benchmark, you must comply with the Additional Implementation Measures, Part 5.2 of the 2021 MSGP.

Analytical monitoring is designed to provide some feedback for facility operators to assess the effectiveness of their SWPPP. The benchmark values listed in Table 5-6 are pollutant concentrations that, when exceeded, could impair water quality or affect human health. Facilities with average pollutant concentrations that exceed the benchmark must review and revise their SWPPP and continue monitoring their discharges on a quarterly basis. Analytical monitoring results must be submitted electronically via EPA's netDMR center.

The 2021 MSGP added quarterly Indicator Monitoring for certain sectors/sub-sectors for pH, Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS). Additionally Polycyclic Aromatic Hydrocarbons (PAHs) for specific conditions in certain sectors/sub-sectors. The results of these analyses are "report only" and are neither benchmark monitoring nor an effluent limitation.

An additional type of monitoring, that does not affect NAVBASE Kitsap Keyport, is for those discharges subject to numeric stormwater effluent limits under stormwater effluent limitation guidelines. Compliance monitoring is required to ensure that a facility's pollutant discharge concentration is less than or equal to the numeric limits established for that pollutant. Results of the annual compliance monitoring must be submitted to the appropriate EPA regional office.

The 2021 MSGP in Part 9.10.7 requires that discharges to impaired receiving waters be monitored quarterly for pollutants causing the impairment. Receiving waters are considered impaired if they are listed on the EPA approved 303(d) list or if a Total Maximum Daily Load has been established for the water body. Portions of Liberty Bay are listed on the 303(d) list for fecal coliform, but these areas lay outside the outfalls listed in this plan.

The 2021 MSGP Part 9.10.7 outlines requirements for monitoring discharges to Puget Sound Sediment Cleanup Sites, either directly or indirectly through a stormwater drainage system. Portions of Liberty Bay surrounding NAVBASE Kitsap Keyport are listed as impaired (Category 4B) for multiple parameters. In addition to sampling the discharges to Puget Sound Sediment Cleanup Sites, the 2021 MSGP also requires permittees to remove accumulated solids from the storm drain infrastructure and conduct line cleaning operations at least once during the term of the MSGP. Prior to removing storm drain solids, permittees must sample and analyze storm drain solids in accordance with Table 3 in Part 9.10.7 of the 2021 MSGP.

5.2.2 Sector-Specific Monitoring Requirements

The 2021 MSGP regulates stormwater discharges from 29 industrial sectors, or industry types. Industries that fall under one or more of these 29 sectors are eligible for coverage under the permit.

NAVBASE Kitsap Keyport has a total of approximately 50 industrial facilities that fall into one or more of five different sector types covered under the MSGP. Each of these facilities is identified in Table 5-3, along with the associated sector and outfall.

Sector-specific monitoring requirements are explained below.

5.2.2.1 Sector K - Hazardous Waste Treatment Storage or Disposal Facilities

Description of Facilities Covered: The requirements listed under this section are applicable to stormwater discharges from hazardous waste TSDFs operating in interim status or under a permit under Subtitle C of RCRA.

Monitoring Requirements: Benchmark monitoring is required under the MSGP for Sector K. Analytical parameters to be monitored are:

- Ammonia (Benchmark)
- Total recoverable arsenic (Benchmark)
- Total recoverable cadmium (Benchmark)
- Total recoverable cyanide (Benchmark)
- Total recoverable lead (Benchmark)
- Total recoverable mercury (Benchmark)
- Total recoverable selenium (Benchmark)
- Total recoverable silver (Benchmark)
- COD (Benchmark)

Quarterly visual examinations of stormwater discharges are also required during each year of the permit term as described in Section 5.3.2.

5.2.2.2 Sector N - Scrap and Waste Material Processing and Recycling Facilities

Description of Facilities Covered: The requirements listed under this section are applicable to stormwater discharges from facilities that are engaged in the processing, reclamation, and wholesale distribution of scrap and recyclable waste materials, including facilities classified by Standard Industrial Classification (SIC) Code 5093. Typical facilities that are covered under this sector at naval installations include recycling and demilitarization facilities.

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Table 5-1: NAVBASE Kitsap Keyport 1st Year Stormwater Sampling for 2015 MSGP

	TSS[1]	Nitrate Nitrite	Aluminum	Iron	Lead	Zinc	Ammonia	Arsenic	Cadmium	Cyanide	Magnesium	Mercury	Selenium	Silver	COD	
	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	
Benchmarks[2]	**30**	**0.68**	**750**	**1000**	**210**	**90**	**2.14**	**69**	**40**	**1**	**64**	**1.8**	**290**	**1.9**	**120**	**1**
02-704 (marine)																
1st Qtr 2017	1.9		112	230	1.54	22.2										
2nd Qtr 2017	25.7		138	2160	3.29	46.3										
3rd Qtr 2017	16		194	783	1.53	44.6										
4th Qtr 2017	46.4		103	774	1.19	64.2										
Average			136.75	986.75	1.89	44.33										
02-726 (marine)																
1st Qtr 2017	1.9	0.063	549	606		6.67										
2nd Qtr 2017	19	0.088	123	300		43.7										
3rd Qtr 2017	5.9	0.867	202	508		37.9										
4th Qtr 2017	54.3	0.056	313	560		33.9										
Average		0.27	296.75	493.5		30.54										
02-732 (marine)																
1st Qtr 2017	0	0.14	0	38.2		580										
2nd Qtr 2017	6.6	0.113	49.1	78.8		256										
3rd Qtr 2017	50.4	0.384	370	488		17.1										
4th Qtr 2017	5.9	0.19	52.3	290		681										
Average		0.21	117.85	223.75		383.53										
03-716 (marine)																
1st Qtr 2017	0	0.825	32.5	22.3		28.5										
2nd Qtr 2017	3.2	0.094	73,6	113		58.8										
3rd Qtr 2017	No flow	No flow	No flow	No flow		No flow										
4th Qtr 2017	2	0.117	58	90.8		81.9										
1st Qtr 2018	1	0.064	53	44		36.7										
Average		0.275	54.275	67.525		51.475										
03-718 (marine)																
1st Qtr 2017	1.1	0.229	78	419		54.6										
2nd Qtr 2017	3	0.233	42.5	268		197										
3rd Qtr 2017	No flow	No flow	No flow	No flow		No flow										
4th Qtr 2017	3.2	0.278	110	529		253										
1st Qtr 2018	2	0.192	79.5	213		160										
Average		0.233	77.5	375.25		166.15										
04-727 (marine)																
1st Qtr 2017	5.7	0.016	259	788		74										
2nd Qtr 2017	24.1	0.123	444	2860		202										
3rd Qtr 2017	No flow	No flow	No flow	No flow		No flow										
4th Qtr 2017	3.7	0.098	57.9	1880		39.7										

1st Qtr 2018	9	0.037	32.5	467		36.1										
Average		0.0685	198.35	1498.75		87.95										
	TSS[1]	**Nitrate Nitrite**	**Aluminum**	**Iron**	**Lead**	**Zinc**	**Ammonia**	**Arsenic**	**Cadmium**	**Cyanide**	**Magnesium**	**Mercury**	**Selenium**	**Silver**	**COD**	
	mg/L	**mg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**mg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**mg/L**	
Benchmarks[2]	**30**	**0.68**	**750**	**1000**	**210**	**90**	**2.14**	**69**	**40**	**1**	**64**	**1.8**	**290**	**1.9**	**120**	
04-728 (marine)																
1st Qtr	2.4	0.064	155	549	0.365	See	0	0.218	0.23	0	1410	0	0	0	0	
2nd Qtr	44.1	0.11	565	4600	3.59	Table 5-2	0.051	0.693	2.89	0	505	0	0	0	21.5	
3rd Qtr	6.2	0.362	101	305	0.792		3.47	2.53	0.472	0	1590	0	0	0	57	
4th Qtr	7.3	0.125	467	845	1.22		0	0.323	1.77	0	1060	0	0	0	14.8	
Average		0.17	322	1574.75	1.49		0.88	0.94	1.34	0	1141.25	0	0	0	23.33	
08-705 (marine)																
1st Qtr	2.7	0.023	179	296		123										
2nd Qtr	10.7	0.585	249	316		96.7										
3rd Qtr	4.9	0.226	0	272		473										
4th Qtr	10.4	0.095	492	933		122										
Average		0.23	230	454.25		203.68										

Shade - exceeds Benchmarks

[1] TSS benchmark from 2015 MSGP Part 9.10.7 for Category 4 or 5 sediment cleanup area. Only 1st year of data given, sampled Quarterly for permit entirety.
2. The 2015 MSGP benchmarks are shown. All sampled locations discharge to marine waters therefore not hardness dependent.

Table 5-2: NAVBASE Kitsap Keyport Stormwater Monthly Copper/Zinc for 2015 MSGP

Benchmarks	**2017**		**2018**	**2019**	**2020**	**2021**			
Copper 14 µg/L									
Zinc 117 µg/L									
	Cu	**Zn**	**Zn**	**Zn**	**Zn**	**Zn**			
04-728 (marine)	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**			
January	6.89	552	144	148	32.5				
February	3.75	85.5	351	121	18.6				
March	4.11	49.3	95.6	37.8	54.9	67.3			
April	7.97	67.5	407	79.7	57.5				
May	7.2	34.5	155	68.2	22.4				
June	7.56	321	NF	563	34.1				
July	NF	NF	NF	63.3	20.3				
August	NF	NF	NF	22.8	121				
September	36.5	304	150	1230	113*				
October	4.85	169	160	49.2					
November	3.53	262	125	77.9	99.6				
December	4.56	646	122	76.7					

Copper sampling suspended at end of first year, annual average of quarterly averages was 13.33 µg/L, which is below the benchmark.
* Secured from monthly sampling for Zinc, quarterly averages and annual average were below benchmarks, still sampling quarterly to monitor performance of oyster shell stormwater treatment.
Shaded values exceed benchmark.

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Table 5-3: Industrial Facility and Permit Sector Requirements

Drainage Basin[a]	Outfall Impacted	Facility Number	Industrial Facilities	Permit Sector(s)
01-1	01-730	76	[redacted]	n/a
	01-733	205	[redacted]	n/a
01-2	01-740, 01-741		[redacted]	n/a
02-1	02-704, Sheet Flow	33	[redacted]	Q - Water Transportation
	02-704, Sheet Flow	48	[redacted]	Q - Water Transportation
	02-702, 02-703, 02-704	91	[redacted]	P - Land Transportation
	02-704	92	[redacted]	P - Land Transportation
	02-704	93	[redacted]	P - Land Transportation
	02-704	200/236	[redacted]	Q - Water Transportation
	Sheet Flow	221	[redacted]	Q - Water Transportation
02-2	Sheet Flow	6	[redacted]	Q - Water Transportation
02-3	02-724	478	[redacted]	Q - Water Transportation AA - Fabricated Metal Products
02-4	02-726	15	[redacted]	AA - Fabricated Metal Products
	02-726	73	[redacted]	AA - Fabricated Metal Products
	02-726	137	[redacted]	AA - Fabricated Metal Products
	02-724, 02-726	478	[redacted]	Q - Water Transportation AA - Fabricated Metal Products
	02-726	489	[redacted]	AA - Fabricated Metal Products
	02-726	894	[redacted]	AA - Fabricated Metal Products
	02-726, 02-727	1002	[redacted]	AA - Fabricated Metal Products
	02-726, 02-727	1050	[redacted]	AA - Fabricated Metal Products
02-5	02-726, 02-727, 02-732	514	[redacted]	AA - Fabricated Metal Products
	02-726, 02-727	1050	[redacted]	AA - Fabricated Metal Products

Drainage Basin[a]	Outfall Impacted	Facility Number	Industrial Facilities	Permit Sector(s)
02-6				
	02-733	84	[redacted]	AA - Fabricated Metal Products
	02-733, 03-716	233	[redacted]	AA - Fabricated Metal Products
	02-733,	234	[redacted]	AA - Fabricated Metal Products
	02-726, 02-732, 02-733	489	[redacted]	AA - Fabricated Metal Products
	02-726, 02-727, 02-732	514	[redacted]	AA - Fabricated Metal Products
	02-726, 02-732	1002	[redacted]	AA - Fabricated Metal Products
02-7	02-733, 02-734	84	[redacted]	AA - Fabricated Metal Products
	02-741, 02-734	825	[redacted]	AA - Fabricated Metal Products
	02-734	1055	[redacted]	AA - Fabricated Metal Products
02-8	03-703, 02-741	98	[redacted]	AA - Fabricated Metal Products
	02-741, 02-734	825	[redacted]	AA - Fabricated Metal Products
03-1	03-703	82	[redacted]	Q - Water Transportation
	03-703, 02-741	98	[redacted]	AA - Fabricated Metal Products
03-2	03-706	None	[redacted]	n/a
03-3	03-703	82	[redacted]	Q - Water Transportation
03-4	03-717, 03-716	38	[redacted]	AA - Fabricated Metal Products
	02-733, 03-716	233	[redacted]	AA - Fabricated Metal Products
	03-716, 03-717	1058	[redacted]	AA - Fabricated Metal Products
03-5	03-717	38	[redacted]	AA - Fabricated Metal Products
	02-733, 03-716	233	[redacted]	AA - Fabricated Metal Products
	03-716, 03-717	1058	[redacted]	AA - Fabricated Metal Products
03-6	03-718, 03-719	81	[redacted]	AA - Fabricated Metal Products
	03-718, 03-719	105	[redacted]	AA - Fabricated Metal Products
03-7	03-719	105	[redacted]	AA - Fabricated Metal Products
03-8	03-720	None	[redacted]	n/a
04-1	04-702	206	[redacted]	AA - Fabricated Metal Products

Drainage Basin[a]	Outfall Impacted	Facility Number	Industrial Facilities	Permit Sector(s)
04-2	04-704	206	[redacted]	AA - Fabricated Metal Products
04-3	04-713	None	[redacted]	n/a
04-4	04-714	None	[redacted]	n/a
04-5	04-728	144	[redacted]	P - Land Transportation
	04-728	207	[redacted]	AA - Fabricated Metal Products
	04-728	820	[redacted]	AA - Fabricated Metal Products
	04-728	893	[redacted]	P - Land Transportation
	04-728	940	[redacted]	AA - Fabricated Metal Products
	04-728	952	[redacted]	AA - Fabricated Metal Products
	04-728	1051[b]	[redacted]	K - TSDF
04-6	04-727	208/209/ 1049/1060	[redacted]	AA - Fabricated Metal Products
04-7	Sheet Flow Leading to Lagoon	491	[redacted]	AA - Fabricated Metal Products
	Stream to Lagoon	957/1017/ 1018	[redacted]	N - Scrap Recycling
	Sheet Flow	1006	[redacted]	AA - Fabricated Metal Products
5	Sheet Flow	None	[redacted]	n/a
8	Sheet Flow	108	[redacted]	AA - Fabricated Metal Products
	Sheet Flow	791	[redacted]	AA - Fabricated Metal Products
	Sheet Flow	824	[redacted]	AA - Fabricated Metal Products
	08-705	950	[redacted]	AA - Fabricated Metal Products
	08-705	951	[redacted]	AA - Fabricated Metal Products
	08-705, 04-728	1051[b]	[redacted]	K - TSDF
9		None	[redacted]	n/a

a - Only drainage basins with industrial facilities are listed.
b - This facility lies in two drainage basins or a portion of this facility has sheet flow drainage.

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Monitoring Requirements: Benchmark and Indicator Monitoring is required under the MSGP for the sub-sector recycling facilities. Analytical parameters to be monitored are:

- Total recoverable aluminum (Benchmark)
- Total recoverable copper (Benchmark)
- Total recoverable lead (Benchmark)
- Total recoverable zinc (Benchmark)
- COD (Benchmark and Indicator)
- TSS (Benchmark and Indicator)
- pH (Indicator)

Quarterly visual examinations of stormwater discharges are also required during each year of the permit term as described in Section 5.3.2.

5.2.2.3 Sector P - Land Transportation and Warehousing Facilities

Description of Facilities Covered: The requirements discussed in this section apply to stormwater discharges from vehicle and equipment maintenance shops or cleaning operations at ground transportation facilities and rail transportation facilities, from petroleum bulk oil terminals, and from United States Postal Service facilities. This includes public works types of vehicles at naval installations such as those involved in garbage collecting and transporting, carting, debris removal, dump truck hauling, local trucking, local transfer, and collecting of refuse. Typical activities at vehicle and equipment maintenance and cleaning facilities include vehicle and equipment rehabilitation, mechanical repairs, painting, fueling, lubrication, and equipment and vehicle cleaning.

Monitoring Requirements: Indicator Monitoring is required under the MSGP for the sub-sector land transportation and warehousing facilities. Analytical parameters to be monitored are:

- COD (Indicator)
- Total Suspended Solids (Indicator)
- pH (Indicator)

Quarterly visual examinations of stormwater discharges are required during each year of the permit term as described in Section 5.3.2.

5.2.2.4 Sector Q - Water Transportation Facilities

Description of Facilities Covered: Sector Q requirements apply to water transportation facilities engaged in vehicle and equipment maintenance and cleaning. Examples of vehicle and equipment maintenance activities include fluid changes, mechanical repairs, parts cleaning, sanding, welding, refinishing, painting, fueling, and storage of the related materials and waste materials.

Monitoring Requirements: Benchmark and Indicator Monitoring is required under the MSGP for the water transportation sector. Analytical parameters required to be monitored for Water Transportation facilities are:

- Total recoverable aluminum (Benchmark)

- Total recoverable lead (Benchmark)
- Total recoverable zinc (Benchmark)

Quarterly visual examinations of the stormwater discharges are also required during each year of the permit term as described in Section 5.3.2.

5.2.2.5 Sector AA - Fabricated Metal Products Industry

Description of Facilities Covered: Fabricated metal products industries include those industries engaged in the fabrication of ferrous and non-ferrous metal products such as metal cans, tin, general hardware, automotive parts, tanks, road mesh, structural metal products, and non-electrical equipment. Such industries are commonly included under the following SIC Code: 3411-3499 and 3911-3915. SIC Code 3483 includes facilities involved in manufacturing or assembling torpedoes and their component parts. The majority of industrial facilities at NUWC Division Keyport are covered under Sector AA.

Monitoring Requirements: Benchmark Monitoring is required under the MSGP for the fabricated metal products sector. Analytical parameters required to be monitored for Sector AA facilities are:

- Total recoverable aluminum (Benchmark)
- Total recoverable zinc (Benchmark)
- Nitrate plus nitrite nitrogen (Benchmark)

Quarterly visual examinations of the stormwater discharges are also required during each year of the permit term as described in Section 5.3.2.

5.3 NAVBASE Kitsap Keyport Stormwater Monitoring Requirements

The strategy for outfall sampling is based on the presence of the types of industrial facilities located within the outfall's drainage basin. The outfalls selected for monitoring, as well as the type and frequency of monitoring required for each outfall, are discussed below.

5.3.1 Outfall Selection

As discussed in Section 5.2.1 above, approximately 50 facilities included fewer than five sector types discharge stormwater through outfalls to a receiving water body at NAVBASE Kitsap Keyport. Monitoring is required at the outfalls receiving stormwater from the 50 facilities identified in Table 5-3 unless reduced sampling can be justified on the basis of a "substantially identical outfall." If two or more outfalls discharge substantially identical effluents, based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas, the effluent of just one of the outfalls may be monitored and the results reported also apply to the substantially identical outfall(s). As required in 2021 MSGP Part 5.2.5.3, the SWPPP must identify each outfall authorized by this permit and describe the rationale for any substantially identical outfall determinations.

Five separate groups of outfalls were found to consist of substantially identical drainage basins for monitoring purposes. The groups of facilities are summarized in Table 5-3 and discussed below.

The first group of drainage basins is relatively small, has a high percentage of impervious area, and contains Sector AA facilities. The sub-basins are designated 02-8, 03-1, 03-4, 03-5, 04-1, and 04-2. Sub-basin 03-4 was selected as representative of Group 1 due to the high level of industrial activity and ease of outfall access.

The second group of drainage basins is also highly impervious and somewhat larger than Group 1 and has Sector Q and AA facilities. [redacted] in Group 2, material management practices are similar within the group. The sub-basins are designated 02-3, 02-4 and 02-6. Sub-basin 02-4 was selected as representative of Group 2.

The third group of drainage basins has a similar amount of impervious area and contains Sector AA facilities. [redacted] in Group 3. The sub basins are 02-6 and 02-7. Sub-basin 02-6 is selected as representative of Group 3.

The fourth group of sub-basins (02-1, 02-2 and 03-3) contains Sector Q, P, and AA facilities. [redacted] located in this group. Sub-basin 02-1 is selected as representative of Group 4.

The fifth group of sub-basins (03-6 and 03-7) includes two opposite sides of the same warehouse. [redacted] in this group, Sectors P and AA. Sub-basin 03-6 is selected as representative of Group 5

The sixth group of drainage basins (04-5 and 04-6) includes one side of the [redacted] storage facilities. This group contains Sector P, AA, and K facilities. Sub-basin 04-5 was selected as representative of Group 6. This sub-basin contains the loading areas of the TSDF.

The seventh group of drainage basins (KDB08) contains the other side of [redacted]. This group contains Sector K and AA facilities. 08-705 was selected as representative of Group 7.

Alternative Certification: Any outfall identified herein as requiring analytical monitoring is not subject to the monitoring requirements if it can be certified on a pollutant-by-pollutant basis, under penalty of law, and signed within the signatory requirements outlined in Section 2, that material handling equipment or activities, raw products, intermediate products, final products, waste materials, by-products, industrial machinery or operations, or significant materials from past industrial activity that are located in areas of the facility that are within the drainage area of the outfall are not presently exposed to stormwater and will not be exposed for the period of certification. No facilities at NAVBASE Kitsap Keyport qualified for the alternative certification exemption.

Based on the summary of outfalls and applicable industrial sectors detailed in Table 5-3 and the evaluation of representative discharges summarized in Table 5-4, a total of seven outfalls require sampling under the 2021 MSGP.

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Table 5-4: Representative Discharges

Group	Drainage Basin	Outfall	Industrial Activity/Sector	Significant Materials	Management Practices	Basin Size (acres)	Relative Runoff Coefficient
1	02-8	02-741	[redacted]/AA	POL, Metals	• Secondary containment	1.2	High
	03-1	03-703	[redacted]/AA	Metals	• Materials Kept in Building	2.7	High
	03-4	**03-716**	[redacted]**/AA**	**Metals, POLs**	• **Most materials kept under cover** • **Secondary containment for POLs**	**0.8**	**High**
	03-5	03-717	[redacted]/AA	Metals, POLs	• Flammable Lockers • Indoor Storage	5.3	Med
	04-1	04-702	[redacted]/AA	Metals	• Materials kept in covered area • All work performed indoors	2.6	Med
	04-2	04-704	[redacted]/AA	Metals	• Materials kept in covered area • All work performed indoors	1.4	Med
2	**02-4**	**02-726**	[redacted]**/Q, AA**	**Metals, POL,** [redacted]	• **Most materials kept under cover** • **Secondary containment**	**11.3**	**High**
	02-3	02-724	[redacted]/AA	Metals	• Materials kept in covered areas	2.4	High
	02-5	02-727	[redacted]/AA	Metals	• Materials kept in covered areas	1.6	High
3	**02-6**	**02-732**	[redacted]**/AA**	**Metals, POL,** [redacted]	• **Most materials kept under cover** • **Secondary containment**	**7.5**	**High**
	02-6	02-733	[redacted]AA	Metals, POL, [redacted]	• Most materials kept under cover • Secondary containment	7.5	High
	02-7	02-734	[redacted]/AA	POLs Sandblast grit and paint chips	• Materials kept in covered areas	1.0	High
4	02-1	02-702	[redacted]/P	Metals, POL	• Materials kept in covered areas	0.07	Low
	02-1	02-703	[redacted]/P	Metals, POL	• Materials kept in covered areas	0.06	Low
	02-1	**02-704**	[redacted]**Q, P, AA**	**Metals, POL**	• **Materials kept in covered areas**	**2.5**	**Low**
	02-2	02-714	[redacted]/Q	Metals, POL	• Materials kept in covered areas	9.5	Low
	03-3	03-709 03-713	[redacted]/Q	Metals, POL	• Materials kept in covered areas	1.9	High
5	**03-6**	**03-718**	[redacted]**/P, AA**	**Metals, POL**	• **Materials kept in covered areas**	**1.9**	**High**
	03-7	03-719	[redacted]/P	Metals, POL	• Materials kept in covered areas	6.6	Med
6	**04-5**	**04-728**	[redacted]**/P, K, AA**	**Metals, POL**	• **Materials kept in covered areas**	**10.1**	**High**
	04-6	04-727	[redacted]/P, AA	Metals, POL	• Materials kept in covered areas or under cover	0.68	High
7	**KDB08**	**08-705**	[redacted]**/K, AA**	**Metals, POL**	• **Materials kept in covered areas**	**27.6**	**Medium**

1. Bolded basins we selected as representative of their groups. Rationale for selection is provided in SWPPP section 5.3.1.

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5.3.2 Quarterly Benchmark and Indicator Monitoring Requirements

Benchmark monitoring data are primarily used to determine the overall effectiveness of control measures and to assist in determining when additional corrective action(s) may be necessary to comply with the effluent limitations. Indicator monitoring is for informational purposes only and required quarterly for the entire permit term. First year and fourth year analytical requirements for those outfalls subject to benchmark and indicator analytical sampling are summarized in Table 5-5.

Monitoring requirements in 2021 MSGP begin in the first full quarter following your date of discharge authorization, whichever date comes later. Monitoring must occur at least once in each of the following 3-month intervals:

- January 1 – March 31;
- April 1 – June 30;
- July 1 – September 30;
- October 1 – December 31.

This monitoring schedule may be modified in accordance with 2021 MSGP Part 4.1.6 if the revised schedule is documented with your SWPPP. However, using NetDMR you must report using a "no data" or "NODI" code for any 3-month interval that you did not take a sample. Benchmark monitoring is required in the first and fourth years of permit coverage, monitoring in the other years is determined by the sampling results of the monitoring.

Benchmark sampling data not exceeding benchmarks: After collection of four quarterly samples, if the average of the four monitoring values for any parameter does not exceed the benchmark, monitoring requirements for that parameter is fulfilled until the start of the fourth year when full benchmark sampling starts again. Using sampling data from the fourth year of permit coverage, if the average of the four monitoring values for any parameter does not exceed the benchmark, monitoring requirements for that parameter is fulfilled for the remainder of the permit coverage period.

Benchmark sampling data exceeding benchmarks: After collection of four quarterly samples, if the average of the four monitoring values for any parameter exceeds the benchmark, you must comply with the Additional Implementation Measures, Part 5.2 of the 2021 MSGP.

5.3.3 Effluent Limitations Monitoring Requirements

No facilities at NAVBASE Kitsap Keyport are subject to numeric effluent limitations. Compliance monitoring is not required.

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Table 5-5: Year One Benchmark Monitoring Requirements for Stormwater Outfalls

Analytical Parameter	Method	Outfall						
		02-704	02-726	02-732	03-716	03-718	04-728	08-705
Applicable Industrial Sectors		Q, P, AA	Q, AA	AA	AA	P, AA	AA, K, P	K, AA
Aluminum	200.8	Q	Q	Q	Q	Q	Q	Q
Lead	200.8	Q	Q				Q	Q
Zinc	200.8	Q	Q	Q	Q	Q	Q	Q
Arsenic	200.8						Q	Q
Cadmium	200.8						Q	Q
Cyanide	335.3						Q	Q
Mercury	245.7						Q	Q
Selenium	270.2						Q	Q
Silver	200.8						Q	Q
COD	410.4	Q[d]				Q[d]	Q[b]	Q
Nitrate-Nitrite	353.2	Q	Q	Q	Q	Q	Q	Q
Ammonia	350.1						Q	Q
TSS[a]	160.2	Q[c]	Q	Q	Q	Q[c]	Q[c]	Q
pH		Q[d]				Q[d]	Q[d]	

All analytical sampling to be conducted on a quarterly basis except where otherwise intended.
Metal analyses are Total Recoverable.

a. TSS sampling required for all outfalls due to discharge into Puget Sound Sediment Cleanup Site as defined in Section 9.10.7 of the 2021 MSGP. Benchmark value is 30mg/L.
b. Sampled for both Benchmark and Indicator sampling requirements.
c. Sampled for both Indicator and Impaired sampling requirements.
d. Sampled for Indicator sampling requirements.

Q: Quarterly sampling during years as defined in Section 5.3.

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Table 5-6: WDOE Surface Water Quality Standards and EPA Benchmark Values

Analyte	WDOE Surface Water Quality Standards[1]	EPA Multi-Sector Benchmarks
Aluminum, Total (mg/L)	0.75 (fresh)	1.1
Ammonia[c] (un-ionized) (mg/L)	0.233 (marine as NH3)	2.14 (as N)
Arsenic, Total [c] (mg/L)	0.36 (fresh), 0.069 (marine) c	0.15 (fresh), 0.069 (marine)
Cadmium, Total[b, c] (mg/L)	0.001 (fresh), 0.042 (marine)	(fresh)[d], 0.033 (marine)
Copper, Total[b, c] (mg/L)	0.00547 (fresh), 0.0048 (marine)	.00519 (fresh), 0.0048 (marine)
Cyanide (mg/L)	0.022 (fresh), 0.001 (marine)	0.022(fresh), 0.001 (marine)
Lead, Total[b,c] (mg/L)	0.01704 (fresh), 0.21 (marine)	(fresh)[d], 0.21 (marine)
Mercury Total [c] (mg/L)	0.0021 (fresh), 0.0018 (marine)	0.0014 (fresh), 0.0018 (marine)
Silver, Total (mg/L)	0.00043 (fresh)[a], 0.0019 (marine)[a]	(fresh)[d], 0.0019 (marine)
Zinc, Total[b, c] (mg/L)	0.04126 (fresh), 0.090 (marine)	(fresh)[d], 0.09 (marine)
COD (mg/L)	No Standard	120
Nitrate + Nitrite as N (mg/L)	No Standard	0.68

WDOE standards for Cadmium, Lead, Silver and Zinc are hardness dependent. This table assumes a hardness of 30 mg/L. Benchmark values as defined in EPA's Multi-Sector General Permit2015.

a. An instantaneous concentration not to be exceeded at any time.

b. A 1-hour average concentration not to be exceeded more than once every three hours.

c. The WDOE criteria are based on the dissolved fraction of the metal. The criteria will be applied as total recoverable values to calculate effluent limits unless data is made available regarding seasonal partitioning of the dissolved metal. See 173-201A Washington Administrative Code (WAC). EPA concentrations are total recoverable fraction.

d. EPA hardness dependent Benchmarks shown below. Hardness of receiving water must be calculated in accordance with Appendix J of the permit.

Water Hardness Range	Cadmium(mg/L)	Lead (mg/L)	Silver(mg/L)	Zinc(mg/L)
0-24.99 mg/L	0.00049	0.014	0.00037	0.037
25-49.99 mg/L	0.00073	0.023	0.0008	0.052
50-74.99 mg/L	0.0012	0.045	0.0019	0.08
75-99.99 mg/L	0.0017	0.069	0.0033	0.107
100-124.99 mg/L	0.0021	0.095	0.005	0.132
125-149.99 mg/L	0.0026	0.122	0.0071	0.157
150-174.99 mg/L	0.0031	0.151	0.0094	0.181
175-199.99 mg/L	0.0035	0.182	0.012	0.204
200-224.99 mg/L	0.004	0.213	0.015	0.227
225-249.99 mg/L	0.0044	0.246	0.018	0.249
250+ mg/L	0.0047	0.262	0.02	0.26

5.3.4 Discharges to Impaired Receiving Waters Monitoring

The 2021 MSGP requires that discharges to impaired receiving waters be monitored annually for pollutants causing the impairment. Receiving waters are considered impaired if they are listed on the EPA approved 303(d) list or, if a Total Maximum Daily Load has been established for the water body. Part 9.10.7 of the 2021 MSGP requires quarterly sampling of 303(d) listed Category 5 impairments per Table 1 of Part 9.10.7.2 of 2021 MSGP. Figure 5-1 shows impaired waters in the vicinity of NAVBASE Kitsap Keyport.

For stormwater discharges to waters for which there is an EPA-approved or established TMDL, you are not required to monitor for the pollutant(s) for which the TMDL was written unless EPA informs you, upon examination of the applicable TMDL and its wasteload allocation, that you are subject to such a requirement consistent with the assumptions and requirements of the applicable TMDL and its wasteload allocation. EPA's notice will include specifications on monitoring parameters and frequency. Permittees must consult the appropriate EPA Regional Office for guidance regarding required monitoring under this Part.

The 2021 MSGP also requires discharges to Puget Sound Sediment Cleanup Sites that are not Category 5 (e.g., Category 4B, etc.) be monitored quarterly for TSS in accordance with Table 2 of Part 9.10.7.2 in the 2021 MSGP. Portions of Liberty Bay are classified as Puget Sound Sediment Cleanup Sites (Category 4B), which is illustrated in Figure 5-1. Table 5-5 outlines the monitoring required for the affected outfalls.

In addition to sampling for TSS at the affected outfalls, the Navy shall, prior to removing storm drain solids, sample and analyze the solids in accordance with Table 3 of Part 9.10.7.2 of 2021 MSGP. Also the Navy shall remove accumulated solids from storm drain lines (including inlets, catch basins, sumps, conveyance lines, and oil/water separators) at least once during the term of the permit as required by Section 9.10.7.2 of the 2021 MSGP. The Navy must also conduct line cleaning operations (e.g., jetting, vacuuming, removal, loading, storage, and/or transport) using BMPs to prevent discharges to storm drain solids to surface waters of the state. Removed storm drain solids and liquids shall be disposed of in accordance with applicable laws and regulations and documented in the SWPPP. The affected outfalls are listed below, grouped by drainage area:

- 02-702, 02-703, 02-704, 02-714, 02-724, 02-726, 02-727, 02-732, 02-733, 02-734, 02-741;
- 03-709, 03-713, 03-716, 03-717, 03-718, 03-719; and
- 04-702, 04-704, 04-727, 04-728.

5.3.5 Additional Monitoring Required by EPA.

NAVBASE Kitsap Keyport may be notified from EPA of additional discharge monitoring requirements that EPA determines are necessary to meet the permit's effluent limitations. Any such notice will briefly state the reasons for the monitoring, locations, and parameters to be monitored, frequency and period of monitoring, sample types, and reporting requirements.

5.4 Sample Collection Procedures

5.4.1 Documentation of Storm Event

The MSGP sampling guidelines require that the storm event sampled:

- be large enough to produce measureable runoff, and
- occur a minimum of 72 hours from the previously measurable storm event.

For each monitoring event, except snowmelt monitoring, you must identify the date and duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event. For snowmelt monitoring, you must identify the date of the sampling event.

Precipitation data for the sampling period should be documented using a rain gauge and should be supplemented with data obtained from a local weather station.

5.4.2 Sample Location

Outfalls identified in Table 5-5 will be sampled during the first year. The exact stormwater sampling points should be located as close as possible to the outfall location. When the outfall is not accessible, the nearest accessible point upstream of the outfall should be sampled. Considerations in choosing sampling locations should include:

- Proximity to conveyance outfall
- Ease of accessibility to potential sampling location

The actual sample location should be documented and marked for future sampling efforts. The outfall locations are shown on the SWPPP base maps provided in Appendix A.

5.4.3 Sample Collection Procedure

Grab samples should be collected within the first 30 minutes of the storm derived flow discharge or as soon as practical thereafter. In the event that the sample cannot be collected in the first 30 minutes, a written explanation should be submitted with the monitoring report explaining why it was not practicable to sample within the first 30 minutes. Where stormwater is mixed with non-stormwater, the outfall should be sampled upstream where the flow is purely stormwater, if possible. The samples should be manually collected by submerging the sample container in the middle of the flow. The samples should be collected in a manner that minimizes agitation of the water. For each monitoring event, except snowmelt monitoring, you must identify the date and duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event.

All samples should be collected and handled as outlined in the NPDES Stormwater Sampling Guidance Document (EPA 1992).

5.4.4 Quality Assurance/Quality Control

Quality Assurance/Quality Control (QA/QC) samples should be collected to detect potential errors introduced during sampling, handling, shipping, and analysis. The QA/QC samples should be collected and handled in the same manner as actual samples and in accordance with

the procedures outlined in the NPDES Guidance Document (EPA 1992b). Sample chain-of-custody also should be maintained as prescribed in the NPDES Guidance Document.

All laboratory analyses should be performed in accordance with EPA Methods for Chemical Analysis of Water and Wastewater and EPA Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. The analytical data should be reviewed to assess data quality and usability based on the EPA Functional Guidelines for Data Validation. The data should be evaluated for use in stormwater characterization and regulatory decision making.

5.5 Reporting Requirements

Reporting requirements include discharge monitoring reports, visual examination reports, and adverse conditions sampling waivers. The schedule for reporting requirements is based on the effective date of the permit. These reporting requirements as well as requirements for retention of records are described below. These requirements correspond to those specified in the EPA Multi-Sector General Permit.

5.5.1 Quarterly Analytical Monitoring Reports

NAVBASE Kitsap Keyport is required to submit all monitoring results using EPA's electronic NetDMR tool at www.epa.gov/netdmr, as described in Part 7.3 of the 2021 MSGP (unless a waiver from electronic reporting has been granted from the EPA Regional Office, in which case a paper DMR form may be submitted). The date and duration in hours of the rainfall event, measurement or estimate of the total rainfall, and time interval since previous storm event must be recorded for each sampling event.

5.5.2 Adverse Weather Conditions

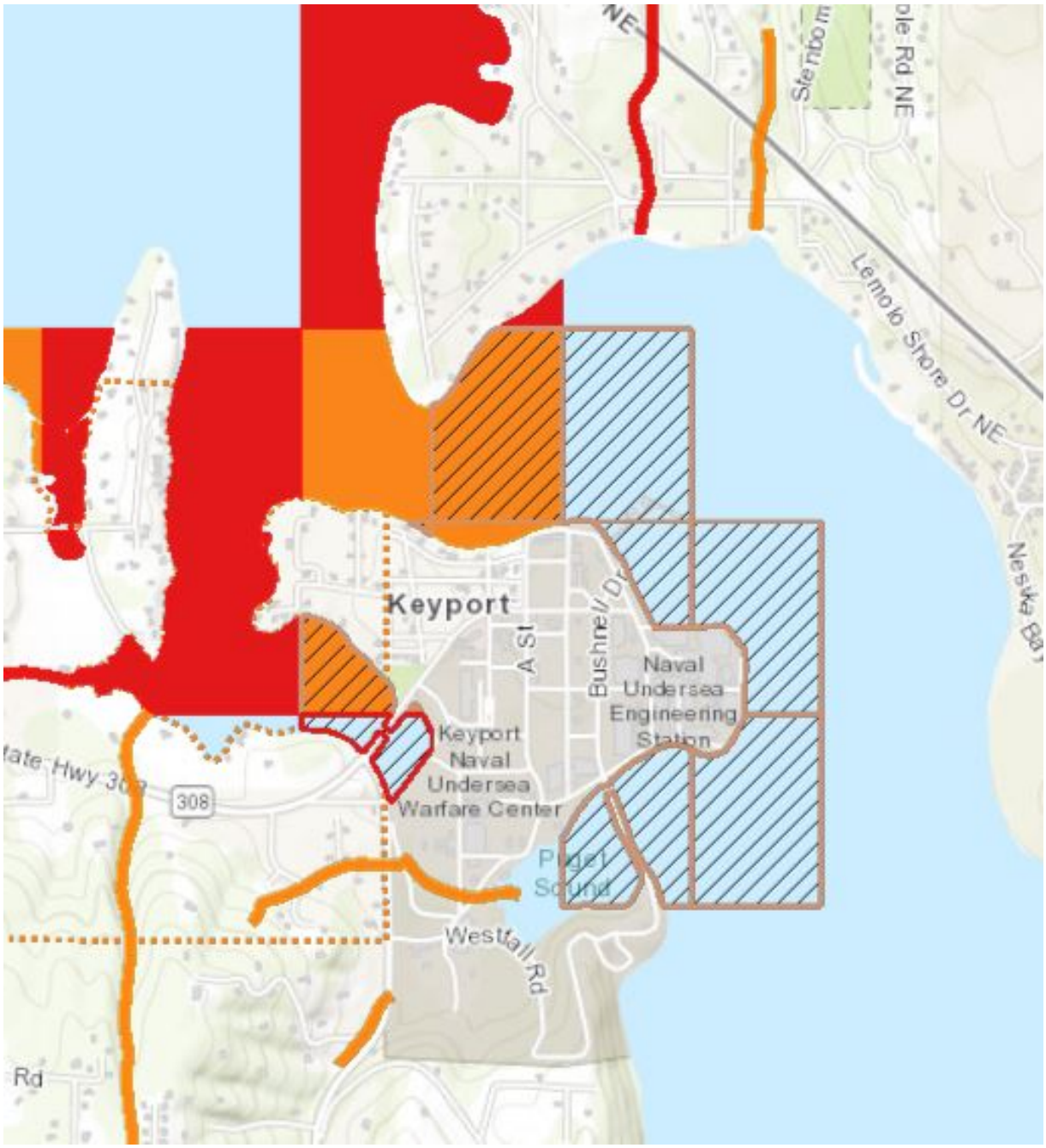
When adverse weather conditions as described in Part 3.2.4.1 of the 2021 MSGP prevent the collection of samples according to the relevant monitoring schedule, you must take a substitute sample during the next qualifying storm event even if the quarter has passed. Adverse weather does not exempt you from having to file a benchmark monitoring report in accordance with your sampling schedule. As specified in Part 7.3 of 2021 MSGP, you must use NetDMR to report any failure to monitor using a "no data" or "NODI" code during the regular reporting period.

The condition or events that precluded the sampling should be documented. Adverse weather conditions that preclude the collection of samples are those that create dangerous working conditions for field personnel (e.g., local flooding, high winds, hurricane, tornado, electrical storms, etc.) or otherwise make the collection of a sample impracticable (e.g., drought, freezing conditions, etc.). Documentation of the reason for not performing the sampling should be maintained with this plan.

5.5.3 Retention of Records

The permit requires that records of all inspections and monitoring information, including certification reports, noncompliance reports, calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation; copies of all reports; and supporting data be retained for a minimum of 3 years after coverage under the permit expires.

Figure 5-1: Impaired Waters in the Vicinity of NAVBASE Kitsap Keyport



6 Facility Inspections

6.1 Routine Facility Inspections

Periodic routine facility visual inspections are required by Part 3.1 of the 2021 MSGP. Inspections must be conducted at least quarterly. Certain industrial sectors or activities may require more frequent inspections. The facilities requiring inspection, applicable sector, and inspection frequency are listed in Table 6-1. The inspections must include the following:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the past three years;
- Discharge points; and
- Control measures used to comply with the effluent limits contained in this permit.

At least one member of the stormwater pollution prevention team must participate in the facility visual inspections. Inspections must be conducted when the facility is operating, and at least one of the inspections during the year must be accomplished while stormwater is discharging.

During the inspection you must examine or look out for the following:

- Industrial materials, residue or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas;
- Erosion of soils, channel and streambank erosion and scour in the immediate vicinity of discharge points;
- Non-authorized non-stormwater discharges;
- Control measures needing replacement, maintenance or repair.

Tracking of inspection results is required, and follow-up actions must be conducted. The findings of the facility inspections must be documented and maintained in the. The routine facility inspection report does not need to be submitted to EPA, unless specifically requested to do so. However, the findings must be summarized in the annual report per. Documentation should include the following information:

- The inspection date and time;
- The name(s) and signature(s) of the inspector(s);
- Weather information;
- All observations relating to the implementation of control measures at the facility, including:

  - A description of any discharges occurring at the time of the inspection;
  - Any previously unidentified discharges from and/or pollutants at the site;
  - Any evidence of, or the potential for, pollutants entering the drainage system;
  - Observations regarding the physical condition of and around all outfalls, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
  - Any control measures needing maintenance, repairs, or replacement;
- Any additional control measures needed to comply with the permit requirements;
- Any incidents of noncompliance; and
- A statement signed and certified in accordance with Appendix B, Subsection 11.

Any corrective action required as a result of a routine facility inspection must be performed consistent with Part 5 of the 2021 MSGP.

The focus of the inspection shall be on facility-specific pollutant sources. The measures implemented as a result of this plan and the measures previously in place to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the 2021 MSGP. The need for additional measures must be identified. Structural stormwater and pollution prevention measures shall be observed to ensure that they are operating as intended. A visual inspection of equipment needed to implement the plan, such as spill kits, shall be made.

Forms used to document routine facility inspections are included in Appendix I.

Table 6-1: Routine Facility Inspection Requirements

Sector	Inspection Schedule	Facility Number	Facility Name	Outfall	Inspection Requirements
K - Hazardous Waste TSDF	Quarterly	1051	[redacted]	08-705, 04-728	Inspect all areas of the facility and equipment identified in the plan monthly. Inspect for application of Core BMPs contained in Table 6-1.
N - Scrap Recycling	Quarterly	957/ 1017/ 1018	[redacted]	Stream to Lagoon	Inspect all areas of the facility and equipment identified in the plan monthly. Check for liquids stored without secondary containment or significant materials exposed to stormwater. Inspect for application of Core and Sector N BMPs contained in Table 6-1.
P - Land Transportation	Quarterly	91	[redacted]	02-702, 02-703, 02-704	Inspect all the following areas/activities: storage areas for vehicles/equipment awaiting maintenance, fueling areas, indoor and outdoor vehicle/equipment maintenance areas, material storage areas, vehicle/equipment cleaning areas, and loading/ unloading areas. Inspect for application of Core, Sector P, and site-specific BMPs contained in Tables 6-1, 6-2, and 6-3.
		92	[redacted]	02-704	
		93	[redacted]	02-704	
		144	[redacted]	04-728	
		893	[redacted]	04-728	
Q - Water Transportation	Quarterly	6	[redacted]	Sheet Flow	Inspect pressure washing area; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; dry dock area; and general yard area. Inspect for application of Core, Sector Q, and site-specific BMPs contained in
		221	[redacted]	02-726	
		33	[redacted]	02-704, Sheet Flow	
		48	[redacted]	02-704, Sheet Flow	
		82	[redacted]	03-703	
		200/236	[redacted]	02-704	

Sector	Inspection Schedule	Facility Number	Facility Name	Outfall	Inspection Requirements
		478	[redacted]	02-724, 02-726	Tables 6-1, 6-2, and 6-3.
AA - Fabricated Metal Products	Quarterly	15	[redacted]	02-726	At a minimum, include the following areas in all inspections: raw metal storage areas; finished product storage areas; material and chemical storage areas; recycling areas; loading and unloading areas; equipment storage areas; paint areas; and vehicle fueling and maintenance areas. Inspect for application of Core, Sector AA, and site-specific BMPs contained in Tables 6-1, 6-2, and 6-3.
		73	[redacted]	02-726	
		84	[redacted]	02-733	
		137	[redacted]	02-724	
		234	[redacted]	02-732/733	
		478	[redacted]	02-724, 02-726	
		489	[redacted]	02-726, 02-733	
		514	[redacted]	02-733, Sheet Flow	
		825	[redacted]	02-741, 02-734	
		894	[redacted]	02-726	
		1002	[redacted]	02-726, 02-733	
		1006	[redacted]	Sheet Flow	
		1050	[redacted]	02-726, 02-727	
		1055	[redacted]	02-733	
		38	[redacted]	03-717	
		81	[redacted]	03-719	
		98	[redacted]	03-703, 02-741	
		105	[redacted]	03-719	
		186	[redacted]	Sheet Flow	
		233	[redacted]	02-733, 03-716	
AA - Fabricated Metal Products (Continued)	Quarterly	1058	[redacted]	03-716, 03-717	At a minimum, include the following areas in all inspections: raw metal storage areas; finished product storage areas; material and chemical storage areas; recycling areas; loading and unloading areas; equipment storage areas; paint areas; and vehicle fueling and maintenance areas. Inspect for application of Core, Sector AA, and
		206	[redacted]	04-728	
		207	[redacted]	04-728	
		208/209/1049/ 1060	[redacted]	04-727	
		791	[redacted]	Sheet Flow	
		820	[redacted]	04-728	
		824	[redacted]	Sheet Flow	
		940	[redacted]	04-728	

Sector	Inspection Schedule	Facility Number	Facility Name	Outfall	Inspection Requirements
		950/951	[redacted]	Sheet Flow	site-specific BMPs contained in Tables 6-1, 6-2, and 6-3.
		952	[redacted]	04-728	

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6.2 Quarterly Visual Assessment of Stormwater Quality

The MSGP requires quarterly visual assessment of stormwater discharges at outfalls associated with industrial activity. The permit allows for the grouping of substantially identical outfalls and monitoring of a single representative of that group. However, visual examination of each outfall within a substantially identical group must be conducted on a rotating basis throughout the permit period. An analysis of substantially identical outfalls at NAVBASE Kitsap Keyport was conducted in SWPPP Section 3.3.1 for analytical monitoring. The same groupings will be used for visual monitoring. Table 6-2 presents the Stormwater Visual Assessment program for NAVBASE Kitsap Keyport.

Quarterly periods for the visual examination of stormwater quality are as follows:

- January through March
- April through June
- July through September
- October through December

Observations should be made of grab samples collected within the first 30 minutes (or as soon as practical thereafter) of when runoff begins to discharge. The storm event sampled should be large enough to produce measurable flow and occur at a minimum of 72 hours from the previously measurable storm event. Assessment should be conducted in a well-lit area using a clean, clear container. Observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other obvious indicators of stormwater pollution should be made in well-lit areas.

6.2.1 Visual Assessment Documentation

Visual Examination Documentation includes:

- Sample location(s);
- Sample collection date and time, and visual assessment date and time for each sample;
- Personnel collecting the sample and performing visual assessment, and their signatures;
- Nature of the discharge (i.e., runoff or snowmelt);
- Results of observations of the stormwater discharge;
- Probable sources of any observed stormwater contamination;
- If applicable, why it was not possible to take samples within the first 30 minutes; and
- A statement signed and certified in accordance with Appendix B, Subsection 11.

Reports must be maintained on-site with the SWPPP. EPA does not require the findings; however, they must be summarized in the annual report. A blank copy of a Visual Examination Report form is provided in Appendix H.

6.2.2 Adverse Weather Conditions

When adverse weather conditions as described in Part 3.2.3 of the MSGP prevent the collection of samples according to the relevant monitoring schedule, a substitute sample must be taken during the next qualifying storm event even if the quarter has passed. The condition or events that precluded the sampling should be documented. Adverse weather conditions that preclude the collection of samples are those that create dangerous working conditions for field personnel (e.g., local flooding, high winds, hurricane, tornado, electrical storms, etc.) or otherwise make the collection of a sample impracticable (e.g., drought, freezing conditions, etc.). Documentation of the reason for not performing the sampling should be maintained with this plan.

Table 6-2: NAVBASE Kitsap Keyport Visual Monitoring Program

Group	Drainage Basin	Outfall	1st Year	2nd Year	3rd Year	4th Year	5th Year
1	02-8	02-741			X (qtrs 1,2)		
	03-1	03-703			X (qtrs 3,4)		
	03-4	03-716	X (qtrs 1,2)			X (qtrs 1,2)	
	03-5	03-717	X (qtrs 3,4)			X (qtrs 3,4)	
	04-1	04-702		X (qtrs 1,2)			X (qtrs 1,2)
	04-2	04-704		X (qtrs 3,4)			X (qtrs 3,4)
2	02-4	02-726	X			X	
	02-3	02-724		X			X
	02-5	02-727			X		
3	02-6	02-732	X			X	
	02-6	02-733		X			X
	02-7	02-734			X		
4	02-1	02-704	X			X	
	02-2	02-714		X			X
	03-3	03-709 03-713			X		
5	03-6	03-718	X		X		X
	03-7	03-719		X		X	
6	04-5	04-728	X		X		X
	04-6	04-727		X		X	
7	KDB08	08-705	X	X	X	X	X

6.3 Annual Report

As required by the terms of the permit, qualified personnel shall develop an Annual Report for NAVBASE Kitsap Keyport once per calendar year. The requirements of the Annual Report are summarized below. For a full description of Annual Report requirements, refer to the 2021 MSGP, part 7.4. You must include the following information in the Annual Report:

- A summary of the past year's routine facility inspection documentation.
- A summary of the past year's visual assessment documentation.
- A summary of the past year's corrective action and any required Additional Implementation Measures (AIM) documentation.
- Describe any incidences of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.
- A statement, signed and certified in accordance with Appendix B, Subsection 11 of the 2021 MSGP.

6.3.1 Recordkeeping and Deadlines

The Annual Report must be submitted to EPA electronically (unless granted a paper waiver) via NeT-MSGP, per Part 7.2 of the 2021 MSGP, by January 30th for each year of permit coverage.

The report shall be retained as part of this SWPPP for at least three years after coverage under the MSGP terminates. Completed Annual reports should be inserted into Appendix M.

7 Corrective Action and Recordkeeping

7.1 Corrective Action

Part 4 of the MSGP requires implementation and documentation of corrective actions and Additional Implementation Measures (AIM) in response to certain deficiencies in the stormwater pollution prevention program. This section describes conditions which may trigger corrective action and the general responses required by the Navy.

If the event triggering the review is a permit violation (e.g., noncompliance with an effluent limit), correcting it does not remove the original violation. However, failing to take corrective action in accordance with this section is an additional permit violation. EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.

7.1.1 Conditions Requiring SWPPP Review and Revision to Eliminate Problem

If any of the following conditions occur during an inspection, monitoring or other means, or EPA informs you that any of the following conditions have occurred you must review and revise, as appropriate, the SWPPP so that the permit's effluent limits are met and pollutant discharges are minimized:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit) occurs at your facility;
- The Navy or EPA determines that control measures are not stringent enough for the discharge to meet applicable water quality standards in the permit;
- A required control measure was never installed, was installed incorrectly, not in accordance with the 2021 MSGP, or is not being properly maintained;
- An inspection or evaluation by an EPA official, or local, state, or tribal entity, determines that modifications to the control measures are necessary to meet the non-numeric effluent limits in this permit; or
- A routine facility inspection or quarterly visual assessment determines that there is evidence of stormwater pollution or control measures are not being properly operated and maintained.

7.1.2 Conditions Requiring SWPPP Review to Determine If Modifications Are Necessary

If any of the following conditions occur; the selection, design, installation, and implementation of control measures must be reviewed to determine if modifications are necessary to meet the effluent limits in this permit:

- Construction or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharged; or

7.1.3 Additional Implementation Measures

Additional Implementation Measures (AIM) may be required based on benchmark monitoring results. The AIM triggering events, responses, and deadlines are all contained in Part 5.2 of the 2021 MSGP.

7.1.4 Substantially Identical Outfalls

If the event triggering corrective action is linked to an outfall that represents other substantially identical outfalls, the review must assess the need for corrective action at each outfall represented by the outfall that triggered the review. Any necessary changes to control measures that affect these other outfalls must also be made before the next storm event if possible, or as soon as practicable following that storm event.

7.2 Corrective Action Deadlines

The MSGP requires that permittees immediately take all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. Immediately is defined as the same work day.

If additional changes are necessary beyond those discussed above, the new or modified controls must be installed and made operational, or repairs completed, before the next storm event if possible, and within 14 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 14 calendar days, you must document why it is infeasible to complete the installation or repair within the 14-day timeframe. You must also identify your schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If the completion of corrective action will exceed the 45 day timeframe, you must notify the EPA Regional Office of your intention to exceed 45 days, provide the rationale for an extension, and a completion date

These time intervals are not grace periods, but are schedules considered reasonable by the EPA for documenting findings and for making repairs and improvements.

7.3 Corrective Action Documentation

Within 24 hours of discovery of any condition listed in SWPPP Section 7.1.1 and 7.1.2, the following information must be documented.

- Identification of the condition triggering the need for corrective action review;
- Date the problem was identified.
- A discussion of whether the triggering condition requires corrective action. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases.
- Description of immediate actions taken to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases (see 2021 MSGP Part 2.1.2.4); and
- A statement signed and certified in accordance with Appendix B of the 2021 MSGP, Subsection 11.

Within 14 days of discovery of any condition listed in SWPPP Section 7.1.1 and 7.1.2, the following additional information must be documented.

- Summary of corrective action taken or to be taken (or, for triggering events identified in Part 5 of the 2021 MSGP where you determine that corrective action is not necessary, the basis for this determination);
- Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;
- Date corrective action initiated; and
- Date corrective action completed or expected to be completed.
- If applicable, document why it was infeasible to complete necessary installations or repairs within the 14-day timeframe.
- If you notified EPA regarding an extension of the 45 day timeframe, you must document your rationale for an extension.

All corrective action documentation must be submitted as part of the Annual Report and a copy must also be retained on-site with the SWPPP. The Corrective Action Tracking Form provided in Appendix N will be used to document corrective actions.

7.4 Recordkeeping

Copies of these records noted below in Table 7-1 shall be inserted into the Appendices of this SWPPP. All records required by the permit must be maintained for at least three years after coverage under the permit expires.

Table 7-1: Summary of SWPPP Reporting and Recordkeeping Requirements

Reporting/Recording Requirement	Requirement Description	SWPPP Record Location
Stormwater Monitoring Reports: Visual Examination Report Discharge Monitoring Report	Full description, SWPPP Section 5	Appendix H
Spill Reports	SWPPP Section 1.6.2	Appendix J
Facility Visual Inspection Reports	SWPPP Sections 6.1 and 7	Appendix I
Maintenance Records: Stormwater Conveyance System Oil/Water Separators	SWPPP Section 4	Maximo
Employee Training Records	SWPPP Section 4	Appendix L
Corrective Actions	SWPPP Section 7	Appendix N

8 References

NUWC Division Keyport, Hazardous Materials Control and Management Plan.

NUWC Division Keyport, Spill Prevention Control and Countermeasure Plan, April 2021.

Naval Base Kitsap Oil/Hazardous Substance Integrated Contingency Plan, June 2016.

United States Environmental Protection Agency (EPA).

1992a, Stormwater Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92-006, September 1992.

1992b, NPDES Stormwater Sampling Guidance Document, EPA 833-B-92-001, July 1992.

2021, National Pollutant Discharge Elimination System Stormwater Multi-Sector General Permit for Industrial Activity Notice.

Washington Department of Ecology (WDOE),

2019, Stormwater Management Manual for Western Washington, July 2019.

2006, A Survey of Zinc Concentrations in Industrial Stormwater Runoff, Publication Number 06-03-009, January 2006

2020, Industrial Stormwater General Permit, January 2021.

Woodward Clyde 1993

APPENDIX A: FACILITY DRAWINGS

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Electronic Facility Drawings Available

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APPENDIX B: GLOSSARY OF TERMS

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Glossary of Terms

Berm: An earthen mound used to direct the flow of runoff around or through a structure.

Best Management Practice (BMP): Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Biochemical Oxygen Demand (BOD): The amount of oxygen in water required by bacteria while stabilizing decomposable organic matter under aerobic conditions.

Boiler Blow-Down: Waste water condensate from boiler operations.

Catch Basin: A stormwater inlet installed in a drainage system.

Chemical Oxygen Demand (COD): Measurement of the total quantity of oxygen required in water for the chemical oxidation of organic matter to carbon dioxide.

Conduit: Any channel or pipe for transporting the flow of water.

Conveyance: Any natural or manmade channel or pipe in which concentrated water flows.

Culvert: A covered channel or a large-diameter pipe that directs water flow below the ground level.

CWA: Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendment of 1972).

Detention Basin: A holding pond or reservoir used to store polluted runoff for a limited time and then release it.

Director: Regional administrator or an authorized representative of the EPA.

Discharge: A release of stormwater or other substance from a conveyance or storage container.

Drainage Basin: An extent or an area of land where surface water from rain and melting snow or ice converges to a single point.

Erosion: The wearing down of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-cleaning practices related to farming, residential or industrial development, road building, or timber-cutting.

Hazardous Substance: 1) Any material that poses a threat to human health and/or the environment. Hazardous substances can be toxic, corrosive, ignitable, explosive, or chemically reactive. 2) Any substance required by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if otherwise emitted into the environment.

Hazardous Waste: By-products of human activities that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on EPA lists.

Illicit Connection: Any connection to the stormwater system that would allow an illicit discharge.

Illicit Discharge: Any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater except discharges authorized by an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities.

Impervious Surface: A surface such as pavement or rooftops that prevents the infiltration of water into the soil.

Infiltration: 1) The penetration of water through the ground surface into sub-surface soil or the penetration of water from the soil into sewer or other pipes through defective joints, connections, or manhole walls. 2) A land application technique where large volumes of wastewater are applied to land and allowed to penetrate the surface and percolate through the underlying soil.

Inlet: An entrance into a ditch, storm sewer, or other waterway.

Landfill: An area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Non-Contact Cooling Water: Water used to cool machinery or other materials without directly contacting process chemicals or materials.

Non-Point Source: Any flow that moves across a surface that does not have a discernable, confined, or discrete conveyance.

Notice of Intent (NOI): An application to notify the permitting authority of a facility's intention to be covered by a general permit; exempts a facility from having to submit an individual or group application.

NPDES: EPA's program to control the discharge of pollutants to waters of the United States. See the definition of "National Pollutant Discharge Elimination System" in 40 CFR 122.2 for further guidance.

NPDES Permit: An authorization, license, or equivalent control document issued by EPA or an approved State agency to implement the requirements of the NPDES program.

Oil and Grease Traps: Devices that collect oil and grease, removing them from water flows.

Oil Sheen: A thin, glistening layer of oil that is visible on water.

Oil/Water Separator: A device installed, usually at the entrance of a drain, which removes oil and grease from water flows entering the drain.

Outfall: The point, location, or structure where wastewater or drainage discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

Point Source: Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. The term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant: Any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage sewage sludge, munitions, chemical wastes, biological materials, radioactive materials [except those regulated under the Atomic Energy Act of 1954, as amended (42 United States Code 2011 et seq.)], agricultural waste discharged into water.

Precipitation: Any form of rain or snow.

Recycle: The process of minimizing waste generation by recovering usable products that might otherwise become waste. Examples are the recycling of aluminum cans, wastepaper, and bottles.

Retention Basin: A pond or reservoir that holds runoff without release except by means of evaporation, infiltration, or emergency bypass.

Run-on: Stormwater surface flow or other surface flow that enters property other than that where it originated.

Runoff: The part of precipitation, snowmelt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from air and land into the receiving waters.

Sanitary Sewer: A system of underground pipes that carries sanitary waste or process wastewater to a treatment plant.

Sanitary Waste: Domestic sewage.

Secondary Containment: Structures, usually dikes or berms, surrounding tanks or other storage containers, designed to catch spilled material from the storage containers.

Sheet Flow: Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel. For purposes of this SWPPP, sheet flow areas are areas of industrial concern that do not drain to a point discharge, but drain by sheet flow directly to a receiving water body.

Significant Materials: Include, but are not limited to raw materials; fuels; materials such as solvents, detergents and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have a potential to be released with stormwater discharges [122.26(b)(12)].

Significant Spills: Includes, but is not limited to releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (CWA) (see 40 CFR 110.10 and 40 CFR 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).

Source Control: A practice of structural measure to prevent pollutants from entering stormwater runoff or other environmental media.

Storm Drain: A slotted opening leading to an underground pipe or an open ditch used for carrying surface runoff.

Stormwater: Runoff from a storm event, snowmelt runoff, and surface runoff and drainage.

Stormwater Discharge Associated with Industrial Activity: The discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

Sump: A pit or tank that catches liquid runoff for drainage or disposal.

Surface Water: All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, wetlands impoundments, seas, estuaries, etc.); also refers to springs, wells, or other collectors that are directly influenced by surface water.

Swale: An elongated depression in the land surface that is at least seasonally wet, is usually heavily vegetated, and is normally without flowing water. Swales direct stormwater flows into primary drainage channels and allow some of the stormwater to infiltrate into the ground surface.

Topography: The physical features of a surface area including relative elevations and the position of natural and human-made features.

Trench Drain: An elongated catch basin, typically in front of a bay door or across a roadway.

Waters of the United States:

See definition at 40 CFR 122.2.

Wetlands: An area that is regularly saturated by surface or groundwater and subsequently is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include: swamps, bogs, fens, marshes, and estuaries.

APPENDIX C: ENDANGERED SPECIES AND HISTORIC PLACES PROTECTION

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Appendix C: Endangered Species and Historic Places Protection

The March of 2021 re-issuance of the MSGP required operators to certify that their stormwater discharges, allowable non-stormwater discharges and BMPs are not likely to jeopardize any species listed as endangered or threatened under the Endangered Species Act. The requirement for protection of Endangered and Threatened Species and Critical Habitat Protection is described in part 1.1.4 of the 2021 MSGP. Appendix E of the 2021 MSGP provides guidance that will be used in the following paragraphs to document NAVBASE Kitsap Keyport's permit eligibility with respect to endangered species.

For the 2015 MSGP Notice of Intent NAVBASE Kitsap Keyport applied as endangered species Criterion C (Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near you facility's "action area," and your industrial activity's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat). The Navy ensures that the USFWS or NMFS are consulted regarding activities that may adversely affect federally listed species, marine mammals, or critical habitat.

For the 2021 MSGP Notice of Intent the endangered species Criterion C1 (Facility eligible for Criterion C in the 2015 MSGP with NO CHANGE to listed species, critical habitat, or action area) has been determined for NAVBASE Kitsap Keyport.

The facility's action area has not changed and no species nor critical habitat has been listed by the USFWS and /or NMFS. The only change has been that the Canary Rockfish has been removed from the listings. Additionally, USFWS, NMFS, and WDFW have participated in an annual Integrated Natural Resources Management Plan evaluation, which is documented through the DoD Natural Resources Conservation metrics. The INRMP is updated annually through this regulatory agency review.

There is no reason to believe that NAVBASE Kitsap Keyport stormwater discharges, allowable non-stormwater discharges, and discharge related activities would cause adverse impacts to federally listed species or critical habitat.

Historic Properties Preservation

Section 1.1.5 of the 2021 MSGP specifies that coverage under this permit is available only if stormwater discharges, allowable non-stormwater discharges, and stormwater discharge related activities meet one or more of the eligibility criteria in the 2021 MSGP. Appendix F of the 2021 MSGP provides the procedures to follow to determine which criteria are met.

Based on observations and research completed during update of the SWPPP and historic stormwater drainage patterns, existing stormwater conveyances do not have the potential to adversely affect the characteristics that would make a property eligible for inclusion in the National Registry of Historical Places since existing patterns would potentially be part of those characteristics.

Additionally, should any individual construction projects be planned that include impacts from stormwater discharge, new construction, or updates to existing stormwater utility lines,

consultation would be done separately, and outside of this permit, with the State Historic Preservation Office (SHPO) and Tribes (THPO).

Therefore Criterion A (Your stormwater discharges and allowable non-stormwater discharges do not have the potential to have an effect on historic properties and you are not constructing or installing new stormwater control measures on your site that cause subsurface disturbance), apply (2021 MSGP, Appendix F).

APPENDIX D: 2021 MSGP, NOTICE OF INTENT (NOI)

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Electronic Files Available

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APPENDIX E: STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES

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Appendix E: Stormwater Management for Construction Activities

This appendix provides a basic guide to assist SWPPP team members and others in knowledgeably planning and observing construction sites at their commands. In doing so, the appendix provides:

The information presented in this appendix is based on the requirements of 40 CFR 122 and information provided in the EPA's *Stormwater Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices (1992)* and Washington State Department of Ecology's *Stormwater Management Manual for Western Washington (WDOE 2019).*

E. 1 Permit Application Options for Construction Activity

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APPENDIX F: BMP INDEX

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Appendix F: BMP Index

Appendix F presents general descriptions of existing, alternative, and recommended BMPs for Naval Base Kitsap Keyport. Site-specific BMPs for other Navy activities in the Northwest (e.g., Naval Air Station Whidbey Island, Manchester Fuel Depot) are also included.

BMPs are measures or procedures that are used to prevent or reduce the potential for pollution of stormwater. There are numerous BMPs to choose from, but some are more appropriate for an individual site than others based on the site's characteristics and other factors. Some BMPs are readily implemented at all sites.

The United States Environmental Protection Agency (EPA 1992) identifies baseline BMPs (good housekeeping and preventive maintenance practices; inspections, employee training and testing; spill prevention and response; sediment and erosion control; management of runoff; and recordkeeping and reporting) that are required of all facilities and advanced BMPs that address particular pollutant sources on a site-specific or activity-specific basis.

BMPs identified in EPA 1992 and additional industry-specific BMPs identified in EPA's Draft Multi-Sector General Permit for Stormwater Associated with Industrial Activity (Federal Register, November 19, 1993) were added to an index of BMPs developed for Southwest Division, Naval Facilities Engineering Command (Woodward-Clyde Federal Services, 1993). Each BMP in this expanded BMP Index of 202 BMPs has been assigned an identifying number or letter and grouped into one of 14 categories expanded from the BMP classifications cited above. A subset of the overall BMP list was determined to be potentially applicable to Naval Base Kitsap Keyport. These BMPs are summarized in the following three tables:

Table F-1, BMP Categories

Table F-2, BMP List (Alphanumeric)

Table F-3, BMP List (By Category)

Table F-1: BMP Categories

BMP Category No.	BMP Description
1	Good Housekeeping/Preventive Maintenance
2	Inspections
3	Training
4	Spill Prevention and Response
5	Structural Runoff and Sediment Controls
6	Non-Structural Runoff and Sediment Controls
7	General Structural Source Controls
8	Loading/Unloading Practices
9	Reduce/Reuse/Recycle and Disposal
10	Procedures and Practices for Significant Materials Storage and Handling
11	Non-Structural Storage Containment
12	Vehicle/Equipment Maintenance and Storage
13	Illicit Discharges/Connections
14	Activity Specific/Site Specific
14.1	Pesticide/Herbicide/Fertilizer Application
14.2	Deicing
14.3	Painting/Sanding/Sandblasting/Pressure Washing
14.4	Coal Handling Activities
14.5	Ship/Boat Building, Maintenance, and Repair
14.6	Railroad
14.7	Treatment Works

Table F-2: BMP List (Alphanumeric)

BMP Category	BMP Number	BMP Description
10	001	Label All Drums, Cans, Containers, Tanks, and Valves
10	002	Restrict Access to Area and Equipment
1	003	Perform Regular Pavement Cleaning to Remove Oil and Grease
1	004	Avoid Hosing Down the Site
1	005	Perform Regular Pavement Sweeping
4	006	Control Spills
4	006A	Keep Records of All Spills or Leaks of Toxic or Hazardous Pollutants
1	007	Place Trash Receptacles at Appropriate Locations
13	009	Do Not Pour Liquid Wastes into Storm Drain
6	009B	All Floor Drains Must Be Properly Identified as Storm or Sanitary Drains
4	010	Keep Absorbent Material On Hand
7	012	Construct Berm or Dike Around Critical Area
7	013	Pave Bermed Areas
7	014	Provide Valve for Outlet Pipe in Containment Area
4	014A	Inspect Water Accumulated in Containment Area for Oil Sheen Prior to Release
9	015	Recycle
10	016	Store Waste and Recycling Materials in Proper Containers
2	016C	Regularly Inspect Storage Areas for Leaking Materials
10	017	Limit Significant Materials Inventory
10	017A	Keep Inventory of Significant Materials

BMP Category	BMP Number	BMP Description
10	017B	Post Inventory List on Flam Locker or Other Storage Locker Door
7	018	Provide Roof to Cover Source Area
5	019	Control Roof Downspout Discharge
5	020	Minimize Stormwater Run-On from Adjacent Facilities and Properties
9	021	Reduce Waste
7	021A	Repair Leaky Roofs
5	022	Permanently Seal Drains within Critical Areas that Discharge to the Storm Drain
4	023	Place Portable Rubber Mats over Storm Drain Inlets
5	024	Insert Filter in Catch Basin
5	025	Place Absorbent Blankets in Catch Basin
5	026	Routinely Clean Catch Basins
6	027	Stencil Signs on Storm Drain Inlets
12	028	Keep Equipment and Vehicles Clean
12	029	Maintain Equipment in Good Condition
3	030	Implement Qualifying Tests for Equipment and Vehicle Operators
3	031	Conduct Refresher Courses in Operating and Safety Procedures
9	032	Dispose of Obsolete Equipment, Inoperable Vehicles, and Surplus Materials
12	033	Check Vehicles and Equipment for Leaks
12	036	Park Vehicles Indoors or Under a Roof
12	037	Park Vehicles on an Impervious Surface

BMP Category	BMP Number	BMP Description
12	037A	Park Vehicles Away from Stormwater Conveyance Systems
12	038	Designate Special Areas for Draining or Replacing Fluids
12	039	Drain All Fluids from Stored or Salvaged Vehicles or Equipment
9	039A	Recycle or Properly Dispose of All Used Vehicle Fluids
12	040	Completely Drain Oil Filters Before Disposal
12	040A	Drain Oil Filters While the Oil Is Warm
12	040B	Store Drained Filters in a Suitable Container or Drum, and Dispose of Properly
12	041	Wash Equipment and Vehicles in Designated Areas
5	041B	Construct Wash Facility Plumbed to Sanitary
13	042	Discharge Wash Water to a Sanitary Sewer
13	042A	Do Not Discharge Accumulated Laundry Wash Water to Storm or Ground Water
9	043	Recycle Pressure Wash Solvents
12	044	Use Drip Pans Under Leaking Equipment
12	045	Perform Equipment Maintenance in Designated Areas
12	046	Designate Areas for Washing Non-Vehicular Air Filters and Other Greasy Equipment
12	047	Conduct Maintenance within a Building or Covered Area
9	048	Reduce the Amount of Liquid Cleaning Agents Used
10	050	Substitute Non-Toxic or Less-Toxic Cleaning Solvents
9	051	Use Solvents Efficiently
10	052	Use Outside Contractor for Handling Used Solvents and Other Significant Materials

BMP Category	BMP Number	BMP Description
7	053	Protect Storage Containers from Being Damaged by Vehicles
10	054	Properly Store Containers
11	055	Use Overpack Containers or Containment Pallets to Store 55-Gallon Drums Outside of Storage Areas
7	056	Use Doghouse Design for Outdoor Storage of Small Liquid Containers
10	057	Do Not Store Use Parts or Containers Directly on Ground
9	057A	Properly Dispose of Any Significant Materials or Contaminated Wastes
11	058	Store Batteries in Secondary Containment
10	059	Do Not Allow Open Flames Near Flammable Material
7	060	Use Door Skirt or Seal
10	061B	Store Liquids and Significant Materials within a Building or Covered Area
4	062	Provide Overfill Protection
4	064	Monitor Major Fueling Operations
4	065	Provide Absorbent Booms in Unbermed Fueling Areas
4	066	Eliminate Topping Off Tanks
4	067	Install Leak Detection System
4	068	Designate Areas for Fueling from Mobile Fuel Tankers
4	069	Restrict Access to Tanks
4	070	Lock Fuel Tanks when Not in Use or on Standby
4	071	Keep Tanks, Piping, and Valves in Good Condition
4	073	Protect Fill Pipe from Being Damaged by Vehicles

BMP Category	BMP Number	BMP Description
4	075	Provide Secondary Containment for ASTs
4	075A	Provide Secondary Containment for Other POL Containing Structures/Facilities
4	075B	Use Absorbent Material or Containment Boom for Secondary Containment
4	075C	Provide Impervious Liner for AST Containment Berm
14.3	076	Enclose Outdoor Sanding and Painting Operations and Use Tarps to Contain and Collect Solid Wastes
14.3	077	Vacuum Particulate Wastes from Sanding or Painting Operations
14.3	079	Conduct Indoor Sanding and Painting in an Enclosed Area
14.3	081	Avoid Sanding or Painting in Windy Conditions
14.3	082	Use Efficient Painting Equipment
4	087	Use Oil Containment Booms
14.1	094	Establish Integrated Pest Control
13	096	Divert Drainage to Treatment Facility/Sanitary Sewer
13	096A	Install Overflow Alarm at Cross Connection
13	096B	Install Auxiliary Pump at Existing Sanitary Sewer Pump Station
5	097	Divert Drainage to a Low-Flow Sump
4	097A	Construct Dead-End Sump to Collect Small Spills
5	098	Construct Oil/Water Separator
5	098A	Clean Oil/Water Separator Regularly
5	098B	Maintain Oil/Water Separator in Good Operating Condition
5	098D	Upgrade Existing Oil/Water Separator

BMP Category	BMP Number	BMP Description
5	099	Construct Water Quality Inlet-Catch Basin
5	099A	Construct Catch Basins with Sedimentation Chambers
5	099B	Maintain Special Catch Basin Inlets
5	100	Use Grassed Swales
5	101	Provide Vegetative Filter Strips
5	110	Regularly Inspect and Maintain Stormwater Conveyance Systems
5	110A	Upgrade Stormwater Conveyance System
2	111	Regularly Inspect and Test Equipment
4	112	Prepare a Spill Prevention and Response Plan
3	113	Conduct Personnel Training Regarding the SWPPP
11	115	Store Containers inside Secondary Containment
6	116	Control Dust and Particulates
9	117	Use Excess Parts in Future Construction/Public Works Projects
14.2	118	Minimize Amount of Deicing Chemicals Used on Roads and Sidewalks
13	130	Treat and Recycle Water Back to Boilers
14.8	131	Provide Remedial Investigation and Remove Source
13	132	Recycle Water to Vehicle Wash Rack and Other Non-potable Water Users Nearby
1	135	Provide Good Housekeeping Practices to Minimize Pollutants Exposure to Stormwater
8	136	Confine Loading/Unloading Activities to a Designated Area
8	137	Consider Performing Loading/Unloading Activities Indoors or in a Covered Area

BMP Category	BMP Number	BMP Description
8	138	Consider Covering Loading/Unloading Area with Permanent Cover (e.g., Roofs) or Temporary Cover (e.g., Tarps)
8	139	Close Storm Drains During Loading/Unloading Activities in Surrounding Areas
2	141	Inspect the Unloading/Loading Areas to Detect Problems Before They Occur
8	142	Inspect All Containers Prior to Loading/Unloading of any Raw or Spent Materials
7	143	Consider Berming, Curbing, or Diking Loading/Unloading Areas
1	151	Keep Dumpster Lids Closed at All Times
10	153	Residue Hauling Vehicles Should Have Proper Coverings and Overall Integrity of Body or Container
14.3	171	Prevent All Blasting and Painting Residuals from Reaching Stormwater
14.3	175	Perform Pressure Washing in Designated Areas
14.3	176	Use No Detergents or Additives in Pressure Wash Water
5	179	Where Feasible, Cover Drains, Trenches, and Drainage Channels to Prevent Entry of Blasting Debris
10	182	Mix Paints and Solvents in Designated Areas Away from Stormwater Inlets
10	184	Keep Paint and Paint Thinner Away from Traffic Areas to Avoid Spills
9	185	Recycle Paint, Paint Thinner, and Solvents
9	192	Label and Track the Recycling of Waste Material (e.g., Used Oil, Spent Solvents, Batteries)
13	194	Do Not Pour Liquid Waste Down Floor Drains, Sinks, or Outdoor Storm Drain Inlets

BMP Category	BMP Number	BMP Description
13	195	Plug Floor Drains Connected to the Storm or Sanitary Sewer
10	199	Store Reactive, Ignitable, or Flammable Liquids in Compliance with the Local Fire Code
4	204	Use Spill Troughs for Drums with Taps
4	207	Inspect Connecting Hoses for Leaks
4	209	Use Appropriate Material Transfer Procedures, Including Spill Prevention and Containment Activities
1	216	Keep Records of Required Inspections, Maintenance Activities, Employee Training Sessions, Chemical Application Rates for Deicing and Herbicide/Pesticide Application Amounts and Locations

Table F-3: BMP List (By Category)

BMP Category	BMP Number	BMP Description
1	003	Perform Regular Pavement Cleaning to Remove Oil and Grease
1	004	Avoid Hosing Down the Site
1	005	Perform Regular Pavement Sweeping
1	007	Place Trash Receptacles at Appropriate Locations
1	135	Provide Good Housekeeping Practices to Minimize Pollutants Exposure to Stormwater
1	151	Keep Dumpster Lids Closed at All Times
1	216	Keep Records of Required Inspections, Maintenance Activities, Employee Training Sessions, Chemical Application Rates for Deicing and Herbicide/Pesticide Application Amounts and Locations
2	016C	Regularly Inspect Storage Areas for Leaking Materials
2	111	Regularly Inspect and Test Equipment
2	141	Inspect the Unloading/Loading Areas to Detect Problems Before They Occur
3	030	Implement Qualifying Tests for Equipment and Vehicle Operators
3	031	Conduct Refresher Courses in Operating and Safety Procedures
3	113	Conduct Personnel Training Regarding the SWPPP
4	006	Control Spills
4	006A	Keep Records of All Spills or Leaks of Toxic or Hazardous Pollutants
4	010	Keep Absorbent Material On Hand
4	014A	Inspect Water Accumulated in Containment Area for Oil Sheen Prior to Release
4	023	Place Portable Rubber Mats over Storm Drain Inlets

BMP Category	BMP Number	BMP Description
4	062	Provide Overfill Protection
4	064	Monitor Major Fueling Operations
4	065	Provide Absorbent Booms in Unbermed Fueling Areas
4	066	Eliminate Topping Off Tanks
4	067	Install Leak Detection System
4	068	Designate Areas for Fueling from Mobile Fuel Tankers
4	069	Restrict Access to Tanks
4	070	Lock Fuel Tanks when Not in Use or on Standby
4	071	Keep Tanks, Piping, and Valves in Good Condition
4	073	Protect Fill Pipe from Being Damaged by Vehicles
4	075	Provide Secondary Containment for ASTs
4	075A	Provide Secondary Containment for Other POL Containing Structures/Facilities
4	075B	Use Absorbent Material or Containment Boom for Secondary Containment
4	075C	Provide Impervious Liner for AST Containment Berm
4	087	Use Oil Containment Booms
4	097A	Construct Dead-End Sump to Collect Small Spills
4	112	Prepare a Spill Prevention and Response Plan
4	204	Use Spill Troughs for Drums with Taps
4	207	Inspect Connecting Hoses for Leaks
4	209	Use Appropriate Material Transfer Procedures, Including Spill Prevention and Containment Activities

BMP Category	BMP Number	BMP Description
5	019	Control Roof Downspout Discharge
5	020	Minimize Stormwater Run-On from Adjacent Facilities and Properties
5	022	Permanently Seal Drains within Critical Areas that Discharge to the Storm Drain
5	024	Insert Filter in Catch Basin
5	025	Place Absorbent Blankets in Catch Basin
5	026	Routinely Clean Catch Basins
5	041B	Construct Wash Facility Plumbed to Sanitary
5	097	Divert Drainage to a Low-Flow Sump
5	098	Construct Oil/Water Separator
5	098A	Clean Oil/Water Separator Regularly
5	098B	Maintain Oil/Water Separator in Good Operating Condition
5	098D	Upgrade Existing Oil/Water Separator
5	099	Construct Water Quality Inlet-Catch Basin
5	099A	Construct Catch Basins with Sedimentation Chambers
5	099B	Maintain Special Catch Basin Inlets
5	100	Use Grassed Swales
5	101	Provide Vegetative Filter Strips
5	110	Regularly Inspect and Maintain Stormwater Conveyance Systems
5	110A	Upgrade Stormwater Conveyance System
5	179	Where Feasible, Cover Drains, Trenches, and Drainage Channels to Prevent Entry of Blasting Debris

BMP Category	BMP Number	BMP Description
6	009B	All Floor Drains Must Be Properly Identified as Storm or Sanitary Drains
6	027	Stencil Signs on Storm Drain Inlets
6	116	Control Dust and Particulates
7	012	Construct Berm or Dike Around Critical Area
7	013	Pave Bermed Areas
7	014	Provide Valve for Outlet Pipe in Containment Area
7	018	Provide Roof to Cover Source Area
7	021A	Repair Leaky Roofs
7	053	Protect Storage Containers from Being Damaged by Vehicles
7	056	Use Doghouse Design for Outdoor Storage of Small Liquid Containers
7	060	Use Door Skirt or Seal
7	143	Consider Berming, Curbing, or Diking Loading/Unloading Areas
8	136	Confine Loading/Unloading Activities to a Designated Area
8	137	Consider Performing Loading/Unloading Activities Indoors or in a Covered Area
8	138	Consider Covering Loading/Unloading Area with Permanent Cover (e.g., Roofs) or Temporary Cover (e.g., Tarps)
8	139	Close Storm Drains During Loading/Unloading Activities in Surrounding Areas
8	142	Inspect All Containers Prior to Loading/Unloading of any Raw or Spent Materials
9	015	Recycle
9	021	Reduce Waste

BMP Category	BMP Number	BMP Description
9	032	Dispose of Obsolete Equipment, Inoperable Vehicles, and Surplus Materials
9	039A	Recycle or Properly Dispose of All Used Vehicle Fluids
9	043	Recycle Pressure Wash Solvents
9	048	Reduce the Amount of Liquid Cleaning Agents Used
9	051	Use Solvents Efficiently
9	057A	Properly Dispose of Any Significant Materials or Contaminated Wastes
9	117	Use Excess Parts in Future Construction/Public Works Projects
9	185	Recycle Paint, Paint Thinner, and Solvents
9	192	Label and Track the Recycling of Waste Material (e.g., Used Oil, Spent Solvents, Batteries)
10	001	Label All Drums, Cans, Containers, Tanks, and Valves
10	002	Restrict Access to Area and Equipment
10	016	Store Waste and Recycling Materials in Proper Containers
10	017	Limit Significant Materials Inventory
10	017A	Keep Inventory of Significant Materials
10	017B	Post Inventory List on Flam Locker or Other Storage Locker Door
10	050	Substitute Non-Toxic or Less-Toxic Cleaning Solvents
10	052	Use Outside Contractor for Handling Used Solvents and Other Significant Materials
10	054	Properly Store Containers
10	057	Do Not Store Use Parts or Containers Directly on Ground
10	059	Do Not Allow Open Flames Near Flammable Material

BMP Category	BMP Number	BMP Description
10	061B	Store Liquids and Significant Materials within a Building or Covered Area
10	153	Residue Hauling Vehicles Should Have Proper Coverings and Overall Integrity of Body or Container
10	182	Mix Paints and Solvents in Designated Areas Away from Stormwater Inlets
10	184	Keep Paint and Paint Thinner Away from Traffic Areas to Avoid Spills
10	199	Store Reactive, Ignitable, or Flammable Liquids in Compliance with the Local Fire Code
11	055	Use Overpack Containers or Containment Pallets to Store 55-Gallon Drums Outside of Storage Areas
11	058	Store Batteries in Secondary Containment
11	115	Store Containers inside Secondary Containment
12	028	Keep Equipment and Vehicles Clean
12	029	Maintain Equipment in Good Condition
12	033	Check Vehicles and Equipment for Leaks
12	036	Park Vehicles Indoors or Under a Roof
12	037	Park Vehicles on an Impervious Surface
12	037A	Park Vehicles Away from Stormwater Conveyance Systems
12	038	Designate Special Areas for Draining or Replacing Fluids
12	039	Drain All Fluids from Stored or Salvaged Vehicles or Equipment
12	040	Completely Drain Oil Filters Before Disposal
12	040A	Drain Oil Filters While the Oil Is Warm
12	040B	Store Drained Filters in a Suitable Container or Drum, and Dispose of Properly

BMP Category	BMP Number	BMP Description
12	041	Wash Equipment and Vehicles in Designated Areas
12	044	Use Drip Pans Under Leaking Equipment
12	045	Perform Equipment Maintenance in Designated Areas
12	046	Designate Areas for Washing Non-Vehicular Air Filters and Other Greasy Equipment
12	047	Conduct Maintenance within a Building or Covered Area
13	009	Do Not Pour Liquid Wastes into Storm Drain
13	042	Discharge Wash Water to a Sanitary Sewer
13	042A	Do Not Discharge Accumulated Laundry Wash Water to Storm or Ground Water
13	096	Divert Drainage to Treatment Facility/Sanitary Sewer
13	096A	Install Overflow Alarm at Cross Connection
13	096B	Install Auxiliary Pump at Existing Sanitary Sewer Pump Station
13	130	Treat and Recycle Water Back to Boilers
13	132	Recycle Water to Vehicle Wash Rack and Other Non-potable Water Users Nearby
13	194	Do Not Pour Liquid Waste Down Floor Drains, Sinks, or Outdoor Storm Drain Inlets
13	195	Plug Floor Drains Connected to the Storm or Sanitary Sewer
14.1	094	Establish Integrated Pest Control
14.2	118	Minimize Amount of Deicing Chemicals Used on Roads and Sidewalks
14.3	076	Enclose Outdoor Sanding and Painting Operations and Use Tarps to Contain and Collect Solid Wastes
14.3	077	Vacuum Particulate Wastes from Sanding or Painting Operations

BMP Category	BMP Number	BMP Description
14.3	079	Conduct Indoor Sanding and Painting in an Enclosed Area
14.3	081	Avoid Sanding or Painting in Windy Conditions
14.3	082	Use Efficient Painting Equipment
14.3	171	Prevent All Blasting and Painting Residuals from Reaching Stormwater
14.3	175	Perform Pressure Washing in Designated Areas
14.3	176	Use No Detergents or Additives in Pressure Wash Water
14.8	131	Provide Remedial Investigation and Remove Source

APPENDIX G: STORMWATER MONITORING DATA

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Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
1	NA	[redacted]	Unacceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed. Building is being refurbished for office space.
6	P	[redacted]	Unacceptable, Good housekeeping	No	No	No	No	No	No	No	No issues observed. Has been repainted.
15	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
33	R	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed. It has been Repainted
38	AA	[redacted]	Acceptable Fairly good housekeeping	No	No	No	No	No	No	No	No issues observed.
40	P	[redacted]	Unacceptable, Fairly good housekeeping	No	No	No	No	No	No	No	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
48/236	Q	[redacted]	Unacceptable. Good housekeeping	No	No	No	No	No	No	No	No issued observed.
51	NA	[redacted]	Acceptable. Fair housekeeping	No	No	No	No	No	No	No	No issues observed.
73	AA	[redacted]	Unacceptable. Fair housekeeping	No	No	No	No	No	No	Yes	SWPPP BMP C-1 has been updated to allow short-term staging (two weeks) of new metal stock. Lid on metal recycling bin open. 9/15 GSA contract awarded to purchase recycle bins.
76	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
81	AA	[redacted]	Acceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	No issues observed.
82	Q	[redacted]	Acceptable Good housekeeping	No	Yes	No	No	No	No	Yes	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
84	R	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
85	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
91	P	[redacted]	Acceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	The doors had peeling paint, but were repainted in Sept 2014.
92	P	[redacted]	Unacceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	Peeling paint and paint chips visible on the ground 9/15/2015. A contract to repaint was awarded late in FY15. Painting will occur when weather allows for application that will meet mfr. warrantee requirements.
93	P	[redacted]	Unacceptable. Fair housekeeping	No	Yes	No	No	No	No	Yes	There is peeling paint on the building. A new oil/water separator has been installed to treat runoff from fueling area. There is a 625 gal tank with level sensors.
98	AA	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	SWPPP BMP C-1 has been updated to allow short-term staging (two weeks) of new metal stock.
105	P	[redacted]	Improved, Fair housekeeping	No	No	No	No	No	No	Yes	There is one open metal recycle bin noted on 9/15/2015. A GSA contract has been awarded to purchase recycle bins.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
108	AA	[redacted]	Acceptable. Good housekeeping	No	No	Yes	No	No	No	No	No issues observed.
137	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	Yes	No issues observed.
144	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
186	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
205	N/A	[redacted]	Acceptable Good housekeeping	No	No	No	No	No	No	No	This area has been cleaned up, housekeeping greatly improved. Will continue to monitor to ensure other equipment is not stored outside.
206	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
207	AA	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	Between bldgs. 952 and 207, there are two non-operational tanks which are heavily corroded with peeling foam insulation and rust.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
208/ 209/ 1049 /106 0	P	[redacted]	Unacceptable. Good housekeeping	No	No	No	No	Yes	No	No	Renovation of the area is in process. Possible construction in 2016. 5/2014 Design not completed and due to personnel reassignment no possibility of design being completed. May be able to have the [redacted] agency fund to complete project. 9/15 90% design sent for review.
221	Q	[redacted]	Acceptable. Fair housekeeping	No	No	No	No	No	No	No	There is one spill kit at the north end of the pier, and one spill kit in the boathouse.
233	R	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	SWPPP BMP C-1 has been updated to allow short-term staging (two weeks) of new metal stock.
234	O	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
478	R	[redacted]	Unacceptable. Fair housekeeping	No	Yes	No	No	No	No	Yes	Open metal recycling bin. 9/15 GSA contract awarded to purchase recycle bins.
489	AA, K	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
514	AA	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
791	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	Yes	No issues observed.
820	K	[redacted]	Acceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	No issues observed.
824	AA	[redacted]	Acceptable, Good housekeeping	No	No	No	No	No	No	No	No issues observed.
825	K	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
880	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
893	P	[redacted]	Acceptable. Fairly good housekeeping	No	No	No	No	No	No	Yes	One open scrap metals bin. 9/15 GSA contract awarded to purchase recycle bins.
894	AA	[redacted]	Unacceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	Big metal recycling bin has no cover. 9/15 GSA contract awarded to purchase recycle bins.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
940	AA, K	[redacted]	Acceptable, Good housekeeping	No	No	No	No	No	No	Yes	No issues observed.
950/ 951	AA	[redacted]	Acceptable, Fair housekeeping	No	No	No	No	No	No	No	No issues observed.
952	O	[redacted]	Unacceptable, Poor housekeeping	No	Yes	No	No	No	No	Yes	Between bldgs. 952 and 207, there are two non-operational tanks which are heavily corroded with peeling foam insulation and rust.
957/ 1017 / 1078 (DR MO)	N	[redacted]	Unacceptable. Fair housekeeping	No	No	No	No	No	No	Yes	No lids on metal recycling bins. 9/15 GSA contract awarded to purchase recycle bins.
1002	AA	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
1006	P	[redacted]	Acceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
1032	N/A	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
1044	AA	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
1050	AA	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	No issues observed.
1051	K	[redacted]	Acceptable. Good housekeeping	No	No	Yes	No	No	No	Yes	No issues observed.
1055	P	[redacted]	Acceptable. Good housekeeping	No	No	No	No	No	No	No	This building is not in use at this time.
1058	AA	[redacted]	Acceptable. Good housekeeping	No	Yes	No	No	No	No	Yes	No issues observed.
Outfall 02-704		Drains DB KDB01, Northwestern Support Area, sub-basin 01-3, into Liberty Bay/Marshland.	Low flow, clear	No	No	No	No	No	No	No	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
Outfall 02-714		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-2, into Liberty Bay.	Outlet buried	No	No	No	No	No	No	No	No issues observed.
Outfall 02-724		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-3, into Liberty Bay.	Low flow, clear	No	No	No	No	No	No	No	No issues observed.
Outfall 02-726		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-4, into Liberty Bay.	Greenish brown color	No	No	No	No	No	No	No	No issues observed.
Outfall 02-727		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-5, into Liberty Bay.	Flowing clear	No	No	No	No	No	No	No	No issues observed.
Outfall 02-733		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-6, into Liberty Bay.	No flow	No	No	No	No	No	No	No	No issues observed.
Outfall 02-734		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-7, into Liberty Bay.	No flow	No	No	No	No	No	No	No	No issues observed.
Outfall 02-741		Drains DB KDB02, Northeastern Industrial Area, sub-basin 02-38 into Liberty Bay.	Flowing clear	No	No	No	No	No	No	No	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
Outfall 03-703		Drains DB KDB03, Southeastern Industrial Area, sub-basin 03-1, into Liberty Bay.	Dripping water, clear	No	No	No	No	No	No	No	No issues observed.
Outfall 03-709 Outfall 03-713		Drains DB KDB03, Southeastern Industrial Area, sub-basin 03-3, into Liberty Bay.	Flowing clear	No	No	No	No	No	No	No	No issues observed.
Outfall 03-716		Drains DB KDB03, Southeastern Industrial Area, sub-basin 03-4, into Liberty Bay.	Light tan, foam at outfall	No	No	No	No	No	No	No	No issues observed.
Outfall 03-717		Drains DB KDB03, Southeastern Industrial Area, sub-basin 03-5, into Liberty Bay.	Low flow, clear; strong odor.	Yes	No	No	No	No	No	No	The Health District conducted fecal coliform sampling at this outfall. The results showed fecal coliform above the acceptable level. A problem was traced to Quarters V and was corrected in 2013. Plan to submit a bullet to clean the storm drainage system and see if that might clear it up. If not, dye testing further upstream will be performed.
Outfall 03-718		Drains DB KDB03, Southeastern Industrial Area, sub-basin 03-6, into Liberty Bay.	Low flow, water foamy	No	No	No	No	No	No	No	Cause of foam unknown. Observation on day after intense storm.
Outfall 03-719		Drains DB KDB03, Southeastern Industrial Area, sub-basin 03-7, into Liberty Bay.	High flow, clear	No	No	No	No	No	No	No	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
Outfall 03-720		Drains DB KDB03, Southeastern Industrial Area sub-basin 04-1, into Liberty Bay.	Unable to observe	No	No	No	No	No	No	No	No issues observed.
Outfall 04-702		Drains DB KDB04, South Central Industrial Area, sub-basin 04-1, into Shallow Lagoon.	Low flow, clear	No	No	No	No	No	No	No	No issues observed.
Outfall 04-704		Drains DB KDB04, South Central Industrial Area, sub-basin 04-2, into Shallow Lagoon.	Dripping water, clear	No	No	No	No	No	No	No	No issues observed.
Outfall 04-728		Drains DB KDB04, South Central Industrial Area, sub-basin 04-5, into Shallow Lagoon.	Very light tan color	No	No	No	No	No	No	No	No issues observed.
Outfall 08-705		Drains DB KDB08, West Central Salt March, into the salt marsh.	No flow	No	No	No	No	No	No	No	No issues observed.
Several unmarked outfalls observed.		Numerous pipes of different sizes and composition.	Either no flow or clear flow	No	No	No	No	No	No	No	No issues observed.

Bldg, Area, or Outfall #	Sector	Brief Description	Condition Around Outfall or Building	Previously Unidentified Discharges of Pollutants from Stormwater or Non-	Evidence or Potential for Pollutants Entering the Drainage System or	Control Measures in Need of Maintenance or Repair	Control Measures Failed and Need Replacement	Additional Control Measures Needed	SWPPP Revision Required?	Incidents of Non-Compliance with Control Measures	Describe Observations and Any Problems
		(C.1.)	**(B.5.)**	**(B.3.)**	**(B.5.)**	**(C.2.)**	**(C.3.)**	**(C.4.)**			
Various Locations		Storm Drains – approximately 12 inspected	No issues observed.	No	No	No	No	No	No	No	No sediment to a couple inches sediment found in catch basins. No trash or leaves, etc.

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APPENDIX H: STORMWATER MONITORING REPORTS

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Form H-1: Stormwater Quality Visual Examination Record

STORMWATER QUALITY VISUAL EXAMINATION RECORD			
Outfall Number:			
Observer Name:			
Observation Date:		Time:	
Quarter (Check)	January through March		☐
	April through June		☐
	July through September		☐
	October through December		☐
Estimated Time Runoff Discharge Began:			
Visual Observations:			
Color	Yes☐	No☐	Describe if Yes:
Odor	Yes☐	No☐	Describe if No:
Clear	Yes☐	No☐	Describe if No:
Floating Solids	Yes☐	No☐	Describe if Yes:
Settled Solids	Yes☐	No☐	Describe if Yes:
Suspended Solids	Yes☐	No☐	Describe if Yes:
Foam	Yes☐	No☐	Describe if Yes:
Oil Sheen	Yes☐	No☐	Describe if Yes:
Other Observations: _____ _____ _____ _____			
Suspected Sources of Pollutants by Visual Examination			
List Sources: _____ _____ _____ _____			

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APPENDIX I: FACILITY ROUTINE INSPECTION REPORTS

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Table I-1: Visual Monitoring Form

Observation Date:	Observer Name:		Observer's Signature:
			Things to consider for each outfall:
Days Since Last Discharge:		Quarter sample taken during:	1) Description of sample observations.
Storm Event Duration:		Jan-Mar ☐	2) Probable sources of observed stormwater contamination
Rainfall Amount:		Apr-Jun ☐	3) If applicable, why it was not possible to take sample within the first 30 minutes.
Runoff or Snowmelt:		Jul-Sep ☐	4) If applicable, why it was not possible to take a sample.
Estimated Time Discharge Began:		Oct-Dec ☐	5) If a 72 hour interval is not possible, provide documentation to show that the repsentative local interval is <72 hours.

Check in Box if present

Outfall No.	Outfall Location	Time	Color	Odor	Clear	Floating Solids	Settled Solids	Suspended Solids	Foam	Oil Sheen	Observations
DB02-704	Float Plane Pier										

DB02-726	Near B1050											
DB03-716	Near B1058											
DB03-718	Near B80											
DB04-728	Near B1060					Fi						
DRMO	Curb cut in north perimeter											

APPENDIX J: RECORD OF SPILLS

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Table J-1: Spills and Releases

Date	Location	Substance	Quantity	Reportable or Non-Reportable
No reportable spills in the past three years				

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APPENDIX K: SIGNIFICANT MATERIALS

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Table K-1: Significant Materials (Authorized Use List)

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APPENDIX L: EMPLOYEE STORMWATER TRAINING RECORDS

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Electronic Files Available

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APPENDIX M: 2021 MSGP

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Electronic Files Available

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APPENDIX N: CORRECTIVE ACTION REPORTS

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Form N-1: Corrective Action Tracking for Annual Report
Reporting Period: _____

Note: The numbers indicated below the column titles refer to numbers in the MSGP 2008, Appendix I Annual Reporting Form Corrective Actions.

Corrective Action # (1)	New or Update (2)	Bldg #	Condition Triggering Corrective Action Review/Problem to Be Corrected (3) & (4)	Date Identified (5)	How the Problem was Identified (6)	Description of Corrective Action (7)	SWPPP Mod Required (8)	Responsible Party	Date Initiated (9)	Expected Date of Completion (10)	Date Completed (10)	Status, Remaining Steps (11)

Corrective Action # (1)	**New or Update** (2)	**Bldg #**	**Condition Triggering Corrective Action Review/Problem to Be Corrected** (3) & (4)	**Date Identified** (5)	**How the Problem was Identified** (6)	**Description of Corrective Action** (7)	**SWPPP Mod Required** (8)	**Responsible Party**	**Date Initiated** (9)	**Expected Date of Completion** (10)	**Date Completed** (10)	**Status, Remaining Steps** (11)

APPENDIX O: STORMWATER MONITORING STANDARD OPERATING PROCEDURES

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Analytical Monitoring Plan

Background:
This NAVBASE Kitsap Keyport Analytical Monitoring Plan is a component of the Stormwater Pollution Prevention Plan.

The purpose of the SWPPP is to identify and minimize potential sources of stormwater pollution. Stormwater monitoring can help evaluate the effectiveness of implemented stormwater pollution control measures/BMPs and also help recognize otherwise unidentified pollution sources.

This analytical monitoring plan is written to assist personnel who will monitor stormwater at NAVBASE Kitsap Keyport, under the requirements of the SWPPP.

Read this plan to its entirety before proceeding with monitoring.

Introduction and Purpose:
The MSGP 2021 requires the following analytical monitoring be performed at NAVBASE Kitsap Keyport:

- Benchmark and Indicator monitoring is the collection of stormwater samples for laboratory analysis (except for pH which is done at the time of collection). The samples will be analyzed for the constituents indicated in SWPPP Table O-1. Results of the sampling will be compared to 2021 MSGP "benchmark" values discussed in section 5 of the SWPPP. Results with levels above the benchmark values will require further evaluation per the Additional Implementation Measures (AIM) guidance in Part 5.2 of the 2021 MSGP. Each monitoring will take place during a distinct storm event, which is defined to occur by 72-hour separation from the previous storm event. This 72-hour rule can be waived if the local climate calls for a different interval, and the newly proposed interval can be supported in writing. A storm event is defined as a measurable rainfall. Samples should be collected within the first 30 minutes of the beginning of discharge from the outfall. If no measurable storm occurs within a monitoring quarter, monitoring can be excused upon documentation that no runoff occurred. Such documentation should be signed and certified.
- The EPA approved 303(d) list indicates impairment for fecal coliform in Liberty Bay. However, sampling supporting the TMDL is complete. The TMDL does however still require annual dry weather inspections of outfalls and investigation of any dry weather flows.
- Impaired monitoring for Total Suspended Solids at outfalls discharging to Puget Sound Sediment Cleanup Sites is required. Sampling and analysis methods are identical to those used for benchmark monitoring.

Benchmark Monitoring
Part 4.2 of the 2021 MSGP gives the detailed requirements for benchmark, indicator, and impaired monitoring. Additional benchmark monitoring requirements are given in the Sector-Specific Requirements, Part 8 of the 2021 MSGP.

Sampling Frequency and Recordkeeping:
Benchmark monitoring shall be conducted every quarter during the monitoring years.

When and Where to Collect Samples:
- Collect a grab sample at each outfall location listed in Table O-1.
- Collect samples during daylight hours.

- Collect samples from storm events, on discharges that occur at least 72 hours (3 days) from the previous discharge. The 72-hour (3-day) storm interval does not apply if you document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. Document this on Form O-1 (provided at the end of this Appendix), and if conducting visual monitoring at the same time, Form H-1 (provided in Appendix H).
- Collect samples within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge from your site.

Table O-1: Monitoring Requirements for NAVBASE Kitsap Keyport

Analytical Parameter	Method	Outfall						
		02-704	02-726	02-732	03-716	03-718	04-728	08-705
Applicable Industrial Sectors		**Q, P, AA**	**Q, AA**	**AA**	**AA**	**P, AA**	**AA, K, P**	**K, AA**
Aluminum	200.8	Q	Q	Q	Q	Q	Q	Q
Lead	200.8	Q	Q				Q	Q
Zinc	200.8	Q	Q	Q	Q	Q	Q	Q
Arsenic	200.8						Q	Q
Cadmium	200.8						Q	Q
Cyanide	335.3						Q	Q
Mercury	245.7						Q	Q
Selenium	270.2						Q	Q
Silver	200.8						Q	Q
COD	410.4	Q[d]				Q[d]	Q[b]	Q
Nitrate-Nitrite	353.2	Q	Q	Q	Q	Q	Q	Q
Ammonia	350.1						Q	Q
TSS[a]	160.2	Q[c]	Q	Q	Q	Q[c]	Q[c]	Q
pH		Q[d]				Q[d]	Q[d]	

All analytical sampling to be conducted on a quarterly basis except where otherwise intended.
Metal analyses are Total Recoverable.

a. TSS sampling required due to discharge into Puget Sound Sediment Cleanup Site as defined in Section 9.10.7 of the 2021 MSGP. Benchmark value is 30mg/L.
b. Sampled for both Benchmark and Indicator sampling requirements.
c. Sampled for both Indicator and Impaired sampling requirements.
d. Sampled for Indicator sampling requirements.

Q: Quarterly samping during years defined in Section 5.3.

What Analyses are Required:

1) Analysis of outfall samples:

Sample collection, preservation, and holding times for stormwater sampling required at NAVBASE Kitsap Keyport are shown in Table O-2.

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Table O-2: Benchmark Monitoring Sample Collection and Preservation Requirements

Parameter	Analytical Group	40 CFR 136 EPA Method	Containers (size and type)	Preservation	Max Holding Time
Metals (total recoverable):					
Aluminum	Metals	200.8	500-ml High-Density Polyethylene (HDPE)	HNO3 to pH <2 Cool to ≤60ºC	6 months
Zinc	Metals	200.8			
Lead	Metals	200.8			
Arsenic	Metals	200.8			
Cadmium	Metals	200.8			
Selenium	Metals	200.8			
Silver	Metals	200.8			
Cyanide	Metals	335.2, 335.3, SM20 4500-CN C, E	1-liter polyethylene or glass bottle	NaOH to pH >12; 0.6 g ascorbic acid; Cool to ≤60ºC	14 days
Mercury	Metals	245.7, 245.2, 1631.E	300-ml polyethylene	HNO3 to pH <2 Cool ≤60ºC	6 months
COD	Conventional	410.4	500-ml High-Density Polyethylene (HDPE)	HNO3 to pH <2 Cool ≤60ºC	28 days
Nitrate plus Nitrite Nitrogen	Conventional	353.1, 353.2, 353.3, 300.0	100-ml polyethylene or glass	H2SO4 to pH <2 Cool to ≤60ºC	28 days
Total Ammonia as N	Conventional	350.1, 350.2, 350.3	1-liter plastic or glass	H2SO4 to pH <2 Cool to ≤60ºC	28 days
TSS (total suspended solids)	Conventional	160.2	100-ml polyethylene or glass bottle	Cool to ≤60ºC	7 days

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Analysis of receiving water sample:
The receiving water is sampled during the first quarter of Benchmark sampling. This is the only time this sample is collected for the entire permit term. This sample is analyzed for hardness in order to determine which benchmark cutoff concentration to use.

Records and Reporting:
All monitoring data collected pursuant to 2021 MSGP Part 4.2 must be submitted to EPA using EPA's online system (www.epa.gov/netdmr) no later than 30 days (email date or postmark date) after you have received your complete laboratory results for all monitored outfalls for the reporting period. If you cannot access netDMR, paper reporting forms must be submitted by the same deadline to the appropriate address identified in 2021 MSGP Part 7.3. If you are using paper reporting forms, EPA strongly recommends that you use the MSGP discharge monitoring report (MDMR) available at www.epa.gov/npdes/stormwater/msgp.

If you collect multiple samples in a single quarter (e.g., due to adverse weather conditions, climates with irregular stormwater runoff, or areas subject to snow), you are required to submit all sampling results to EPA within 30 days of receiving the laboratory results.

Corrective actions that arise from the analytical monitoring will be reported to EPA in the Annual Report. Any corrective action required must be performed consistent with the 2015 MSGP Part 4.

Use the Form O-1 included in this Appendix to record benchmark sampling events. Keep this record along with the analysis results in SWPPP Appendix H.

Safety:
- Personal Protective Equipment: Raincoat, rain pants, hat/hood, gloves, colored safety vest, hard hat, and sturdy shoes or steel toe boots (if you will be lifting storm drain covers).
- Traffic cones.
- All monitoring must be done during daylight hours and monitoring must not be done during severe/extreme storm events.
- Consider taking along a partner for sampling in some locations.
- For emergency communication purposes, a cell phone and/or radio.
- Wear safety/lab goggles if acids are used to preserve samples.
- In addition monitoring personnel should be aware of the cautionary measures appropriate for handling nitric acid (a preservative) that is typically placed in the sample container by the contract lab. When opening each of the sample bottles, be sure to have your face positioned away from the opening, as the moisture in the air will cause the nitric acid to fume.

Preparation:
- Good to go? 72-hour dry period
- Check safety gear (see list above)
- Check gear
- Sample bottles
- Notebook

- Manhole puller
- Pen/sharpie
- Chain-of-Custody forms
- Sample container labels
- Chain of Custody seals
- Dipper (inspect and clean if necessary)
- Cooler (s)
- Sampling plan
- Ice/blue ice
- Plastic sheeting
- Paper towels or lab towels
- Monitoring Log for Quarterly Benchmark Monitoring , Form O-1
- Stormwater Quality Visual Examination Record, Form H-1
- Extra clean sample container, (for use as a transfer container)
- Zip-lock bags

Paperwork:

- Fill out sample labels and chain-of-custody forms, as much as you can, prior to leaving the office.
- Fill out Form O-1, as much as you can, prior to leaving the office.

Sampling:

- Note when the rainfall started.
- Put on gloves and safety goggles.
- Place traffic cones if applicable.
- Take care when removing manhole cover/catch basin grates. Don't fully remove catch basin grates. Just move to the side but leave some in groove. Take care not to allow the grate to fall in catch basin.
- Note details of discharge. Estimate flow rate or depth of flow and other details.
- Use dipper. Rinse in effluent three times. Do not allow dipper to touch the sides or bottom of the pipe, manhole, or catch basin.
- Insert dipper into effluent flow to collect sample. Be careful not disturb sediment/debris in the outfall pipe. Stay safely back from any ledges, bluffs, or drops.
- Fill and rinse the sampler with stormwater first, and then fill again with the stormwater sample.

- Fill bottles to about the neck. Don't overfill as you will lose the preservative. Most bottles will be pre-preserved by the lab (contain a few ml of acid). Take care when removing cap as moisture in the air can react with the acid. This is especially true with nitric acid, which is used to preserve metals samples. Hold the bottle away from you when opening. Keep cap oriented down to prevent pollutants from settling in the cap.
- If necessary add nitric acid until the pH of the sample falls below 2. A pH indicator is useful but not required (and typically not used). It would be used to ensure the pH of the sample is at or below required levels for adequate preservation.
- For Oil & Grease sample pour directly into sample container from dipper. Do not use an interim container. For metals, an interim container is ok provided it is clean.
- Write down the time when sample was collected in notebook.
- Write down the weather conditions in your notebook.
- Fill out Form H-1 as applicable.
- Note: Multiple bottles can still be one sample.
- Fill out sample container label and apply to the container. Apply custody seal if provided by the laboratory.
- Store the container in the prepared cooler.
- Seal the completed chain-of-custody form in a zip lock bag, and store in the cooler with the sample bottles.
- Transport the cooler to contractor's laboratory within required holding time.
- Complete Form O-1.
- Proceed to next outfall.

Decontamination Procedures:

- Dipper-type sampler:
  - Examine for discoloration or residue prior to use.
  - If there are signs of contamination, clean using detergent and water. Make sure the last rinse is with de-ionized water.

Post Sampling:

- Complete paper work - chain-of-custody forms and sample container labels. Fill out chain-of-custody form provided by lab. Line out and initial any mistake. Make sure to note the required analytical method (200.7, Table I-1, or 200.8) and the digestion method (total metals). Sign and date form when sampling is complete.
- Make sure you ask for the analysis you want on the chain-of-custody form.
- Pack samples in cooler. Use cube ice if available but blue ice is ok. If using cube ice place it inside zip lock bags. May want to place each sample container inside a zip-lock bag. Place chain-of-custody in zip-lock bag and place inside cooler.

- Transport the cooler to contractor's laboratory within the required holding time. For the majority of metals it is six months so time is not a problem, but some parameters have a shorter holding time, so care must be used not to exceed those times.
- Sign off on chain-of-custody form and make sure the lab "takes" custody.

Outfall Locations
Perform benchmark monitoring on the samples collected at the outfalls listed in Table O-1. Form O-1 is a log that can be used to record monitoring events.

Impaired Waters Monitoring
Section 9.10.7.2 of the 2015 MSGP requires the Navy to conduct TSS sampling and analysis for the outfalls listed in Table O-1.

Form O-1: Monitoring Log for Quarterly Benchmark Monitoring

Facility Name: _____ Date: _____ Quarter: _____

Days since Last Discharge: _____ Estimated Time Runoff Discharge Began: _____

Weather Information and Discharges at the Time of Sample Collection: _____

_____

Name: _____ Signature: _____

Outfall Location	Sector	Sampling Requirements	Time	Notes and Observations
02-704	Q, P, AA	Required. Submit the results to EPA.		
02-726	Q, AA	Required. Submit the results to EPA.		
02-732	AA	Required. Submit the results to EPA.		
03-716	AA	Required. Submit the results to EPA.		
03-718	P, AA	Required. Submit the results to EPA.		
04-728	AA, K, P	Required. Submit the results to EPA.		
08-705	AA, K			

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APPENDIX P: 2008 ILLICIT DISCHARGE SURVEY

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