2012-13 PROJECT WORK PLAN ADDENDUM
for
Non-Dry Dock Stormwater Monitoring
Conducted at
Puget Sound Naval Shipyard
Bremerton, WA
Project ENVVEST Study Area

FINAL

November, 2012

Puget Sound Naval Shipyard and Surrounding Area

PNNL Contract No.: N4523A10MP00034 Amendment 2

TAYLOR ASSOCIATES, INC.

Cardno TEC
Shaping the Future

Pacific Northwest
NATIONAL LABORATORY

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United States Department of Defense
Department of Navy
Puget Sound Naval Shipyard
1400 Farragut Avenue
Bremerton, WA 98314

Prepared by:

CardnoTEC

and

Pacific Northwest National Laboratory

Marine Science Laboratory

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1.0 APPROVAL PAGES & FORWARD

Internal Review and Approval

Name/Title/Organization	Signature	Date
Navy Project Management Team		
1. Lesley Doyle, Project Manager – Navy-PSNS&IMF		
2. Dr. Robert Johnston, Technical Coordinator – Navy-MESO-NW/PSNS&IMF		
3. Christine Gebhart, NPDES Project Manager – Navy-PSNS&IMF		
Data Analysis and Collection Consultant Project Management Team		
4.Jill Brandenberger, Project Manager / Project Chemist / QC Manager – PNNL-MSL		
5. Dave Metallo, Project and Field Operations Manager / QC Manager – CardnoTEC		
6. Curtis Nickerson, Senior Technical Advisor – CardnoTEC		

Certification

I certify that this addendum document and all attachments, related to those sections as assigned to me for primary authorship, 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Name/Title/Organization	Signature	Date
Dave Metallo, Project and Field Operations Manager / QC – CardnoTEC		
Jill Brandenberger, Project Manager / Project Chemist / QC – PNNL-MSL		

FORWARD

This document is an addendum to the *2011-2012 PSNS Non-Dry Dock Stormwater Monitoring Project Work Plan* (Taylor/TEC, 2012). Its intended purpose is to provide additional guidance mainly related to field operation, sample collection and data management for the 2012-2013 project year – hereafter referred to as Phase III. This 2012-2013 Project Work Plan Addendum (PWPA) is an integral companion to the 2011-12 PWP. These two documents, conjoined, provide overall and comprehensive guidance for the Phase III portion of the project and related Phase III field, quality control and reporting tasks.

Specifically, there are two “new” sites included among the Phase III monitoring locations, PSNS053 and PSNSPB01. This PWPA provides appropriate and pertinent information regarding these “new” sites, as well as any necessary updates to field operations, sample collection methodology and/or data management from 2011-2012 (Phase II).

Sections and appendix designations included in this PWPA are per their original 2011-2012 PWP numbering and titling schemes. Any new sections and/or appendices included in this PWPA follow the same sequential numbering and titling scheme. Any such sections are assigned consecutive designations per the 2011-2012 PWP. All of the original 2011-2012 PWP text section, table and figure headers are remain in this 2012-2013 PWPA for numbering consistency and as a reference between these two documents.

Please note that **only** those sections, including figures, tables and appendices, from the 2011-2012 PWP requiring additions and/or changes, modifications, corrections, etc. appear in their entirety. Omission of a particular section or appendix from this PWPA is implied and understood to mean that there are no substantive changes or additions and these Work Plan segments stand unchanged from the 2011-2012 PWP.

Be aware that for Phase II there were six stations sampled during at least four qualifying events (SW08 - SW11). A fifth Phase II event (SW12) was conducted at PSNS015. During Phase III, samples will be collected from six stations during at least three qualifying events (SW13-SW15).

Sediment samples will continue to be collected during the course of the Phase III portion of the project. However, there is no set number of samples targeted, nor will there be any sediment-specific collection events. Sediment collection will be

conducted on an “opportunistic” basis. Analysis will be performed under a separate contract and scope of work.

Lastly, the name of the Data Collection Consultant changed from Taylor – TEC to CardnoTEC. By inference, this global name change applies to the 2011-2012 PWP in its entirety. This re-naming convention is reflected throughout the 2012-2013 PWPA. Where there are no substantive changes other than this naming convention in sections of the 2011-2012 PWP, those sections are not otherwise included as revisions in this 2012-2013 PWPA.

2.0 TABLE OF CONTENTS

LIST OF APPENDICES

****NOTE:** The 2011-12 PWP contained Appendices A-J. Omitted Appendices indicate that there are no substantive changes in this 2012-13 Project Work Plan Addendum.

LIST OF TABLES

LIST OF FIGURES

DISTRIBUTION LIST

The following members of the Navy and Consultant management teams will receive copies of the Project Work Plan (PWP):

Name/Affiliation	Title	Telephone No.	No. of copies[1]
Lesley Doyle, PSNS & IMF	Project Manager	(360) 476-9678	1 Hard and Electronic copies
Dr. Robert Johnston, MESO-NW/ PSNS & IMF	Technical Coordinator	(360) 782-0113	Electronic Only
Larry Hsu PSNS & IMF	NPDES Program Manager	(360) 476-4738	Electronic Only
Christine Gebhart, PSNS & IMF	Stormwater Program Support	(360) 476-9679	Electronic Only
Eric Mollerstuen, PSNS & IMF	Stormwater Program Support	(360) 476-4594	Electronic Only
Jill Brandenberger, PNNL-MSL	Project Chemist and Manager / Quality Control Manager	(360) 681-4564	Electronic Only
Dave Metallo, Cardno TEC	Project and Field Operations Manager / QC Manager	(206) 267-1400	[2]2 Hard and Electronic copies
Curtis Nickerson, Cardno TEC	Senior Technical Advisor	(206) 267-1400	Electronic Only

(1) Specify if electronic copy or hardcopy.

(2) One of these copies will be maintained as the Navy "Field" copy of the PWP.

ACRONYMS

%D	percent difference
%D_f	percent drift
%R	percent recovery
%RSD	percent relative standard deviation
ARI	Analytical Resources, Inc.
BMP	Best Management Practice
BNC	Bremerton Naval Complex
CIA	Controlled Industrial Area
CFR	Codes of Federal Registration
CLP	U.S. EPA Contract Laboratory Program
COC	chain-of-custody (form)
CSI	Campbell Scientific, Inc.
C-TEC	Cardno TEC
CVAAS	cold vapor atomic absorption spectrometry
DI	Deionized Water
DMR	Discharge Monitoring Report
DoD	Department of Defense
DQOs	data quality objectives
Ecology	Washington State Department of Ecology
ES&H	Field Environmental Health and Safety Plan
EPA	U.S. Environmental Protection Agency
GC/MS	gas chromatograph/mass spectrometer
HPLC	high performance liquid chromatographer
ICP/MS	inductively coupled plasma/ mass spectrometer
IMF	Intermediate Maintenance Facility
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
MHxxxx	Man Hole with number (xxxx)
ML	minimum limit
MQI	measurement quality indicator
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate

MSL	Marine Science Laboratory
Navy	United States Navy
NELAP	National Environmental Laboratory Accreditation Program
NPDES	National Pollutant Discharge Elimination System
NWTPH-Dx	Northwest Total Petroleum Hydrocarbons – Diesel fraction
OWTS	oil water treatment system
PNNL	Pacific Northwest National Laboratories
PP	Polypropylene
PQL	practical quantification limit
PSNS&IMF	Puget Sound Naval Shipyard & Intermediate Maintenance Facility
PWP	Project Work Plan
PWPA	Project Work Plan Addendum
QAP	quality assurance plan
QA	quality assurance
QC	quality control
QSM	quality systems manual
RCM	runoff coefficient method
RMTS	recycle material transfer station (area)
RPD	relative percent difference
SDG	sample delivery group
SOP	standard operating procedure
SRM	standard reference material
TAL	Twiss Analytical Laboratories
TDSR	Telemetry Data Summary Report
TPH	total petroleum hydrocarbon
TPH-Dx	total petroleum hydrocarbon diesel fraction
TSS	total suspended solids
USEPA	United States Department of Environmental Protection
YSI	YSI, Inc.

3.0 INTRODUCTION AND BACKGROUND

3.1 INTRODUCTION

3.1.1 Project Work Plan Overview

This Project Work Plan (PWP) details the project background, description, organization, field and data collection methodologies and quality objectives. Quality assurance and quality control (QA/QC) procedures for conducting field activities and laboratory analyses associated with non-dry dock stormwater monitoring, as well as sampling, and other related activities to be conducted at the non-dry dock properties within the Shipyard, in support of potential NPDES requirements, are presented in this PWP. Actions detailed in this PWP will be conducted by the team of Cardno TEC (C-TEC) and Pacific Northwest National Laboratory – Marine Science Laboratory (PNNL-MSL) with support from the PSNS&IMF Environmental Office (Code 106.32). As a companion to the PWP, a Field Environmental Health & Safety Plan (ES&H) (updated for the 2012-13Field season) is included as Appendix A. Together the PWP and ES&H serve as the Phase III 2012-13 wet season project guidance documents. The 2011-12PWP and this 2012-13 PWPA are companions to the original 2010-11 PWP (detailing the Phase I sampling locations). Phase I and II sampling activities targeted outfalls in both the CIA and NBK that represented the primary work activities occurring within Shipyard. Phase III targets six storm drains representing a similar combination of highly industrial areas within the Shipyard (CIA) and other base operations within the NBK.

3.2 BACKGROUND

Previously, during a Project ENVVEST effort, Total Maximum Daily Loads (TMDLs) were developed for fecal coliform (FC) and other contaminants for the Sinclair/Dyes Inlet watershed (Figure 3) (ENVVEST 2002a, b, 2006). As part of Project ENVVEST, thirteen storm water drainage basins within the watershed, including three basins within the Shipyard, were monitored for flow and sampled during storm events (Johnston et al. 2005, TEC 2003a, b, c). This work resulted in a calibrated and verified Hydrological Simulation Program Fortan (HSPF) model for drainage basins within the watershed including the shipyard (Skahill and LaHatte 2007) and estimates of stream and storm event runoff quality as a function of upstream land use and cover and storm intensity (Brandenberger et

al. 2007a, b, Cullinan et al. 2007). The ENVVEST Studies also provided data that were used to develop a contaminant mass balance for heavy metals, poly aromatic hydrocarbon (PAH)s, polychlorinated biphenyl (PCB)s, and nutrients (Brandenberger et al. 2008).

Recently, an evaluation of existing storm water monitoring data for the Shipyard and a review of technical and regulatory requirements were conducted. In addition, a Quality Assurance Plan for Non-Dry Dock Stormwater Monitoring Conducted Under the National Pollutant Discharge Elimination System by Puget Sound Naval Shipyard & Intermediate Maintenance Facility was prepared that documents the technical strategy and procedures needed for monitoring non-Dry Dock stormwater basins within the Shipyard (Taylor Associates Inc. 2009). This stormwater monitoring plan recommended monitoring seven representative storm drains within the Shipyard. This was completed during project Phase I which occurred during the 2010/2011 wet season. During the second phase (Phase II) of this project (2011-12 wet season) monitoring sites were changed (from the Phase I sites) to include four newly added storm drainage systems, plus two existing phase I sites that represent highly industrial areas within the Shipyard and the largest NBK drainage basin. During this third project phase (Phase III) (2012-13 wet season), three of the previous CIA and one NBK monitoring locations have been retained for use. Two additional NBK sites added to the Phase III monitoring sites list have either not been previously sampled or not sampled since the 1994-96 NPDES permit phase.

3.3 PSNS&IMF NPDES PERMIT OVERVIEW

3.3.1 Draft NPDES Stormwater Permit

3.3.2 Permit Overview and Monitoring Requirements

3.3.3 Stormwater Monitoring from Non-dry Dock Areas

In accordance with the NDPES permit, during Phase I of the project (completed in the 2010/2011 wet season) PSNS&IMF monitored non-dry dock stormwater from stormwater outfalls or conveyances that represented the primary activities performed within the non-dry dock areas. The primary activities represented the main industrial tasks and processes at the PSNS&IMF, as well as, support functions in the surrounding NBK-Bremerton areas. The activities included:

(1) Materials storage

(2) Vessel, equipment and materials recycling

(3) Vessel maintenance

(4) Non-aircraft carrier vessel support services

(5) Aircraft carrier support services

(6) Parking/steam plant (stormwater discharges only)/truck traffic

(7) Municipal/commercial/residential services

For Phase II of the project in 2011/2012 wet season, the PSNS&IMF selected six stormwater outfalls to monitor – two that had previously been monitored in 2010/2011 and four that were new for 2011/2012. These six selected outfalls represent the more industrial areas of the shipyard. The data from these outfalls will provide the PSNS&IMF with a better understanding of the condition and pollutant potential discharging from these industrial areas.

PSNS & IMF selected the Phase III (2012/13 wet season) sites based on data collected during the previous two wet seasons and a review of the sampling that occurred during the 1994-96 NPDES permit cycle. One prior NBK (PSNS015) and three controlled industrial area (PSNS084.1, 115.1 and 126) sites selected are locations of continued interest, representing a variety of primary activities. Two additional NBK sites represent a previously sampled basin draining areas beneath several major NBK support tasks (PSNS053), while the other newly created, previously un-sampled outfall represents aircraft carrier support services (PSNSPB01). This outfall is unique in that it discharges from a water quality treatment system emanating from a large vessel support pier (Pier B).

This updated PWP / PWPA details the monitoring of the six selected Phase III outfalls. Consistent with the requirements specified in the NPDES permit, collection includes grab and automated, tidally compensated, time-paced composite samples from each of the selected outfalls. Methodologies used to collect the type and number of representative samples from select storm events and the types of parameters analyzed are consistent with the permit. Sections 9 through 11 of this PWP provide details of these items.

In addition to the stormwater samples collected during Phase III, samples of accumulated sediment will be collected at each outfall in an opportunistic manner. The methodology used to collect these sediment samples and their intended analytical parameters are discussed in Sections 9 through 11.

3.3.4 Controlling Stormwater Discharges

Figure 1. Bremerton Naval Base Regional and Vicinity Map (see the 2011-12 PWP for map)

Figure 2. Bremerton Naval Complex, Showing the NBK and PSNS&IMF/CIA Boundaries (see the 2011-12 PWP for map)

Figure 3. Location of PSNS&IMF within the Sinclair/Dyes Inlet Watershed (see the 2011-12 PWP for map)

Figure 4. Sampling Locations of Six Phase III Stormwater Outfalls Selected for Monitoring in 2012/2013

4.0 PROJECT DESCRIPTION

This section presents the purpose, goals and objectives of the project, describes the boundaries, target populations, and practical constraints of the study, and specifies the information and data required to meet study objectives.

4.1 PROJECT AND PWP PURPOSE

The purpose of this project is to collect and characterize non-dry dock stormwater and associated data from selected locations. The Phase III monitoring locations represents a shift back towards the sites as previously represented during Phase I; providing coverage for a broader variety of the seven main industrial activities and processes at the PSNS&IMF as well as support functions in the surrounding NBK-Bremerton and areas not previously sampled at the BNC (Figure 4). Data collected at these Phase III locations will aid in meeting the requirements anticipated in the PSNS&IMF (Working Draft) NPDES Permit (EPA 2000a).

For the purpose of consistency with past efforts and potential future requirements, concerning project data generation; monitoring tasks, as detailed in this PWPA, will be performed following many of the procedures initially developed in the 2009 SWMP-QAP (Taylor Associates Inc. 2009). Monitoring will include:

(1) the collection of automated, tidally-compensated, time-paced composite and grab stormwater samples for chemical analysis, and

(2) manual opportunistic collection of accumulated sediment samples for chemical analysis.

Phase I, stormwater monitoring tasks were performed during three qualifying storm events at each of seven monitoring stations (SW1 - SW7). Phase II, stormwater monitoring tasks were performed during four qualifying storm events (SW8 - SW11) at each of six monitoring stations (and a fifth event (SW12) at one location), as well as sediment sample collection at several stations, where material and opportunity presented itself.

During Phase III stormwater monitoring tasks will be performed during at least three qualifying storm events (SW13 - SW15) between November 2012 through May 2013. Accumulated sediment (from within monitoring location vault interiors) will be collected on an opportunistic basis. As many sediment samples as

possible will be collected. Sediment samples will be collected per methodologies contained in the Phase II PWP and Phase III PWPA. Sediment samples will be analyzed under a separate contract and scope of work.

The purpose of this PWP/A is to document the technical strategy and procedures needed for monitoring stormwater basins within the CIA (the area of PSNS&IMF inside the security perimeter where ship maintenance, refueling and dismantling tasks are conducted; See Figure 2) and NBK. It also describes the sampling process and procedures (including the collection of stormwater outfall samples and sample compositing), measurement procedures, QA/QC, data management, assessment/oversight, storm event and project reporting, data review/ verification/validation and corrective action tasks. The design and content of this PWP/A are based heavily on recommendations detailed in the 2009 QAPP (Taylor Associates Inc. 2009) and the 2010-2011 Phase I PWP. As a companion to this PWP/A, a Field Environmental Health and Safety Plan (EH&S) (PNNL 2010, revised 10/2012) has been attached as Appendix A. The EH&S presents pertinent site health and safety information and protocols (e.g. confined space entry procedures, emergency planning information, etc.). Copies of both the PWP and EH&S will be present in the field, with the lead crew member, during all sampling and support activities.

4.2 PROJECT GOALS

The goal of this project is to collect and characterize non-dry dock stormwater, accumulated in-pipe sediment and associated data from the selected Phase III locations within the Shipyard to inform reissuance of the Shipyard's (Working Draft) NPDES Permit Number WA-00206-2 (US EPA 2008a,b).

4.3 PROJECT OBJECTIVES

The objectives for the Phase II of the project include:

(1) Prepare an updated 2012-13 Project Work Plan Addendum (PWPA). The 2012-13 PWPA will document revisions, additions, and deletions to the 2011-12 Phase II stormwater sampling procedures and QA/QC criteria. New and/or updated site specific information pertaining to the six Phase III sampling locations will be included in the 2012-13 PWPA.

(2) Collect grab and automated, tidally-compensated, time-paced composite water samples for at least three qualifying storm flow events following the

procedures identified in the 2012-13 PWP/A, at each of the six Phase III stormwater sampling locations.

(3) Provide samples to PNNL, or a designated subcontractor, for analytical analysis of the parameters specified in Tables 10 and 11 and per the 2012-13 PWPA. The sample count includes three storm events x six sites + two field duplicates + six equipment blanks for a total of 26 samples plus appropriate quality control samples.

(4) Collect representative samples from accumulated sediment within the stormwater vault at each of the six monitored outfalls. Sediment samples may be collected during equipment deployment and recovery, maintenance events or other events of opportunity.

(5) Prepare Storm Event (SW) Reports documenting the particulars for each sampling location and storm details during all project-qualifying sampling events.

(6) Provide technical contribution, recommendations for improvements, and review of the annual report prepared by PNNL. This annual report will summarize the results of chemical analyses, document progress, and provide the status of non-dry dock stormwater monitoring at the Shipyard relative to the working draft NPDES permit (USEPA 2008a). The report may include technical contribution, recommendations for improvements and incorporate any new stormwater information into the modeling component conducted by ENVVEST (Brandenberger et al. 2007a, b, Cullian et al. 2007).

(7) Manage all field activities required to achieve the project goals. This includes acquiring all access approvals (to the extent possible regarding security concerns and PSNS approvals), field teaming arrangements, and overall project management of the tasks in this SOW. Conduct all field and analytical activities required to achieve the project goals. This includes setting up monitoring stations, maintaining sampling and data collection equipment, acquiring all access approvals (to the extent possible regarding security concerns and PSNS&IMF approvals), scheduling of project staff, arranging field teaming, and telemetry equipment use permission. Ensure that sample collection and sample management be conducted in accordance with the 2011-12PWP and 2012-13 PWPA, which serve as the Quality Assurance Project Plan (QAPP).

4.4 INFORMATION REQUIREMENTS

4.5 DATA COLLECTION

Per the 2011-12 PWP and this PWPA, during Phase III of the project, automated, tidally-compensated, time-proportionate and grab sampling techniques (as defined in Section 7.7.2) will be used to collect non-dry dock stormwater samples from qualifying storm events (as defined in Section 7.3). Sampling will be conducted at each of the six select outfall monitoring locations during at least three distinct storm events over the course of the sampling period of performance (November 2011 through May 2012). In addition, samples of accumulated sediment will be collected from within the stormwater vaults during events of opportunity (e.g. equipment deployment, maintenance, etc.) at each of the six locations. The selected outfalls include PSNS015, PSNS053, PSNS84.1, PSNS115.1, PSNS126 and PSNSPB01 (the water quality vault north of Pier B along the Quay Wall). These locations are shown on Figure 4 and discussed in more detail in Section 7.1.

Rainfall, conductivity/salinity, temperature, and in-pipe water level data will be collected at each of the selected basin's monitoring station during all storm events. In-pipe water level data will be collected to assess runoff response and to compare the measured effect of tidal fluctuations on water level at a station against predicted tidal elevations. Rainfall data will be used to estimate the total volume of discharge sampled as described in Section 7.4. Water conductivity/salinity and temperature data will also be collected at monitoring stations during all storm events to discern when the increase in water level in the pipe is from storm flow and when it is from tidal backwater conditions.

4.6 TARGET POPULATION

4.7 STUDY BOUNDARY

4.8 PRACTICAL CONSTRAINTS

4.9 DECISION MAKING

5.0 ORGANIZATION AND SCHEDULE

The following section identifies the project team, provides an overview of the project schedule, identifies special training required for project implementation, and describes the process for future revision of this document.

5.1 ROLES AND RESPONSIBILITIES

Table 1, below, contains a list of the participants in the major aspects of the project and their associated responsibilities. The full project personnel contact list, which identifies other technical leads, field staff and alternate storm control personnel, is included as Appendix B.

Table 1: Project Participant Roles and Responsibilities

[1]Position	[1]Roles and Responsibilities
Project Manager/PSNS&IMF **Lesley Doyle** Water & Special Projects Supervisor ph: 360-476-9678 pager: 360-781-2045 Lesley.doyle@navy.mil	Ms. Doyle's role will be to support the project in an administrative and managerial capacity. She will provide necessary support to the Navy Team, be available for project issue resolution and will help to determine the "go-no-go" decision regarding storm targeting.
NPDES Project Manager/PSNS&IMF **Christine Gebhart** ph: 360-476-4738 cell: 360-535-2898 larry.hsu@navy.mil	Mr. Hsu's role will be to provide overall management of the NPDES Permit compliance activities. Monitors and assesses the quality of work. Responsible for verifying that the PWP/A (including the /ES&H) is being followed and that the project is producing data of known and acceptable quality. Ensures adequate training and supervision of all monitoring and data collection activities. Complies with corrective action requirements. Participate in the "go-no-go" decision regarding storm targeting.
Technical Coordinator **Dr. Robert Johnston** MESO-NW/PSNS&IMF ph: 360-782-0113 cell: 360-961-9072 johnston@spawar.navy.mil	Dr. Johnston will be responsible for technical coordination with Navy and other team members, conduct document and report review and will provide project QC. Dr. Johnston will also participate in the process to determine the "go-no-go" decision regarding storm targeting.
Data Collection Consultant Project Manager – Lead Storm Controller/Cardno TEC **Dave Metallo** ph: 206-267-1400 cell: 206-794-0095 David.Metallo@cardnotec.com	Mr. Metallo will ensure appropriate consultant project management and coordination with project team members and consultant staff. Develops project design, facilitates field operations and data collection, and conducts monitoring system audits and project QC. Mr. Metallo is also the lead storm event controller and lead field activities manager. He will also be involved in the determination of the "go-no-go" decision.

[1]Position	[1]Roles and Responsibilities
Data Collection Consultant Senior Technical Advisor/Cardno TEC **Curtis Nickerson** ph: 206-267-1400 cell: 206-755-9956 Curtis.Nickerson@cardnotec.com	Mr. Nickerson oversees monitoring activities and data management conducted pursuant to the PWP by the Consultant team. Mr. Nickerson also provides review of project documents, field / monitoring design and provides technical input for issues as they arise. He will also be involved in the determination of the "go-no-go" decision.
Data Collection Sample Event Lead/Cardno TEC **Brian Rupert** 206-267-1400 cell: 360-620-7254 BWRupert@tecinc.com	Mr. Rupert will manage and oversee monitoring activities, sampling decisions for a specific targeted sample event and routine maintenance of the monitoring systems. Mr. Rupert may also serve as an alternate storm controller for certain sampling events.
Data Collection Consultant Telemetry Systems Manager/Cardno TEC **Bryan Berkompas** ph: 206-267-1400 cell: 206-718-7446 Bryan.Berkompas@cardnotec.com	Mr. Berkompas designs, tests and manages the operation of the telemetry and data collection system/s deployed in the field. He will assist, as requested by the Project Manager, with field installation of the telemetry system/s. He periodically reviews the data collected on the system loggers, provides technical assistance and conducts troubleshooting services. Mr. Berkompas may also serve as an alternate storm controller for certain sampling events.
Data Analysis Consultant Project Manager – Chemist /PNNL **Jill Brandenberger** ph: 360-681-4564 cell: 360-670-3241 Jill.Brandenberger@pnnl.gov	Ms. Brandenberger supervises laboratory personnel involved in generating analytical data for this project. Oversees all operations, ensuring that all quality assurance/quality control (QA/QC) requirements are met, and documentation related to the analysis is complete and accurately reported. Enforces corrective action, as required. Ms. Brandenberger will also conduct field audit tasks to assure proper collection techniques are being employed. She may also participate in sample collection during certain events.
Data Analysis Consultant Laboratory Quality Assurance Manager/PNNL **Jill Brandenberger** ph: 360-681-4564 cell: 360-670-3241 Jill.Brandenberger@pnnl.gov	Monitors the implementation of the Quality Assurance Plan (QAP) sections of the PWP within the analytical laboratory to ensure complete compliance with QA objectives as defined by the contract and in the QAP. Performs validation and verification of data before the report is transmitted to the BNC.
Data Analysis Consultant Quality Control Officer Manager/PNNL **Julie Snelling-Young** ph: 360-681-3631 Julie.Snelling-Young@pnnl.gov	Provides independent review of analytical results and laboratory analysis tasks. Identifies items related to testing results and/or laboratory methodologies that are out of compliance with the associated project (field and lab) QAPs.

[1]See Appendix B for full Project Personnel List

5.2 SCHEDULE

The following table illustrates the approximate implementation schedule for project-related activities.

Table 2: Anticipated Project Schedule

Project Year: 2012-2013(Phase III)				
Activity	**Anticipated Date of Initiation**	**Anticipated Date of Completion**	**Deliverable**	**Deliverable Due Date**
Project startup activities	10/1/12	9/30/2013	Monitoring equipment installation and testing; staff training	Field reports and meeting minutes, per event
Stormwater monitoring	11/15/2012	5/1/2013	Stormwater quality data, water level data, conductivity data, precipitation data	Storm event report following each data collection event.
Data validation	12/1/2012	5/31/2013	Data validation /usability report	Prior to annual report
[1]Reporting	12/15/2012	8/31/2013	Progress Status Reports	Quarterly, starting Sep, 2010
			Storm Event Reports	Within 30 days after a storm event
			Electronic Data Reports	Within 30 days after a storm event
			Annual Report Sections	Within 60 days of completion of last sampling event

[1]Cardno TEC is not responsible for schedule overages as a result of Navy and/or stakeholder document reviews that exceed the anticipated period.

5.3 SPECIAL TRAINING NEEDS/CERTIFICATION

5.4 REVISIONS

6.0 DATA QUALITY OBJECTIVES

6.1 DATA QUALITY OBJECTIVES

Table 3. Data Quality Objectives for Non-Dry Dock Stormwater Sampling at PSNS&IMF&IMF.

Storm Event Sampling Data Quality Objectives
STEP 1: State the Problem Sinclair and Dyes Inlets in Puget Sound, WA may be impacted by pollution from a variety of sources including shipyard operations, marina and vessel traffic, storm event runoff, discharges from waste water treatment plants, industrial outfalls, and surface streams and legacy sources. Additional data to better understand the relative importance of the storm event runoff to the overall load of contaminants to the Inlet is required to provide a baseline to measure processes improvement within the Shipyard and assess trends through time and the effectiveness of BMPs and other pollution control measures to determine if discharges from stormwater outfalls are protective of beneficial uses including aquatic life.
STEP 2: Identify the Decision 1. Are discharges from shipyard industrial outfalls and storm drains protective of beneficial uses of Sinclair Inlet? 2. How does the water quality of storm water runoff compare between various drainage basins in the Shipyard that support different types of activities (e.g. CIA versus NBK)? 3. What is the status and trend of stormwater quality relative to previous Shipyard stormwater sampling in 2003-2005 and/or other Puget Sound industrial areas?
STEP 3: Identify Inputs to the Decision 1. Select outfalls to monitor that represent the primary range of activities within the Shipyard including both the CIA and NBK areas (Project Phase I) and which emphasize the industrial core of the Shipyard (Project Phase II). 2. Conduct storm event monitoring that is comparable to previous ENVVEST sampling and will satisfy anticipated NPDES requirements to establish trends associated with environmental quality within the Inlets. 3. Evaluate stormwater and sediment quality data compared to various water quality benchmarks to identify drainage basins that may require further source identification, process improvement, or more effective BMPs.

Storm Event Sampling Data Quality Objectives
STEP 4: Define the Study Boundaries Spatial boundary is the PSNS&IMF property boundaries and stormwater drainage basin boundaries.
STEP 5: Develop a Decision Rule The data collected will be used to determine compliance with the draft NPDES stormwater outfall permit, identify stormwater drainage basins that require additional source identification studies, and determine the effectiveness of cleanup and pollution control measures conducted since the previous ENVVEST sampling.
STEP 6: Evaluate Decision Errors Data will be evaluated to assure accuracy, precision, completeness, comparability, and representativeness.
STEP 7: Optimize the Design for Obtaining Data Stormwater outfall and sediment samples will be collected following protocol developed by ENVVEST and modified to meet anticipated NPDES requirements to provide directly comparable results to previous monitoring data and inform the permitting process. Storm event samples will be collected as time-paced, tidally corrected composites to represent the event mean concentration. The sampling locations were selected to represent the various activities occurring within the Shipyard and provide a basis for ongoing stormwater monitoring efforts. The data will be integrated into the network of ambient monitoring stations and regional biota monitoring stations to assess the impact of contaminants discharged into Sinclair and Dyes Inlets, characterize the status and trend of ecological resources and determine if discharges from all sources are protective of beneficial uses including aquatic life. The data will provide a basis for determining the need for improvement, assess the effectiveness of corrective actions, and inform adaptive management actions needed to improve environmental quality and protect aquatic resources.

6.2 MEASUREMENT QUALITY INDICATORS

Table 4: Measurement Quality Objectives For Chemical Analysis Of Stormwater and Sediment Samples

Measurement Quality Indicator	QC Parameters
Precision	RPD values of at least one of the following: (1) LCS/LCSD (2) MS/MSD (or Laboratory Duplicate) (3) Field Duplicates
Accuracy	%RPD, %R, %D, or $\%D_f$ values of: (1) Initial Calibration and Calibration Verification (2) Surrogate Spikes (3) Internal Standards (4) Labeled Compounds (5) LCS (6) MS Results of: (1) Instrument and Calibration Blank (2) Method (Preparation) Blank (3) Trip Blank (4) Field Blank (5) Equipment Rinsate Blank
Representativeness	(1) Results of All Blanks (2) Sample Integrity (3) Holding Times
Comparability	(1) Sample-specific MRLs (2) Sample Collection Methods (3) Laboratory Analytical Methods
Completeness	(1) Data Qualifiers (2) Laboratory Deliverables (3) Requested/Reported Valid Results
Sensitivity	MDLs and MRLs

6.2.1 Precision

6.2.2 Accuracy

6.2.3 Sensitivity

6.2.4 Representativeness

6.2.5 Completeness

6.2.6 Comparability

7.0 SAMPLING PROCESS DESIGN

This section describes the monitoring sites, and describes the approach for targeting storm events, collecting grab and composite stormwater samples, and collecting sediment samples.

7.1 MONITORING BASIN DESCRIPTIONS

Phase III monitoring will occur at six drainage basins. Three of these drainage basins are within the Controlled Industrial Area (CIA) (PSNS126, PSNS115.1 and PSNS084.1) and three within the NBK-Bremerton support areas (PSNS053, PSNS015 and PSNSPB01). Stations PSNS053 and PSNSPB01 are “new” project locations not previously sampled under Project ENVVEST. The other stations listed above have been previously sampled during Phases I and/or II.

These six outfalls were selected to represent a variety of major work activities across the entire Bremerton Naval Complex. Figure 5 shows the locations of the Phase III monitoring stations.

Figure 6 shows the immediate proximity of the monitoring locations and other pertinent features of the BNC. Table 5 lists the drainage basins selected for monitoring by their associated stormwater outfall number and primary work activities.

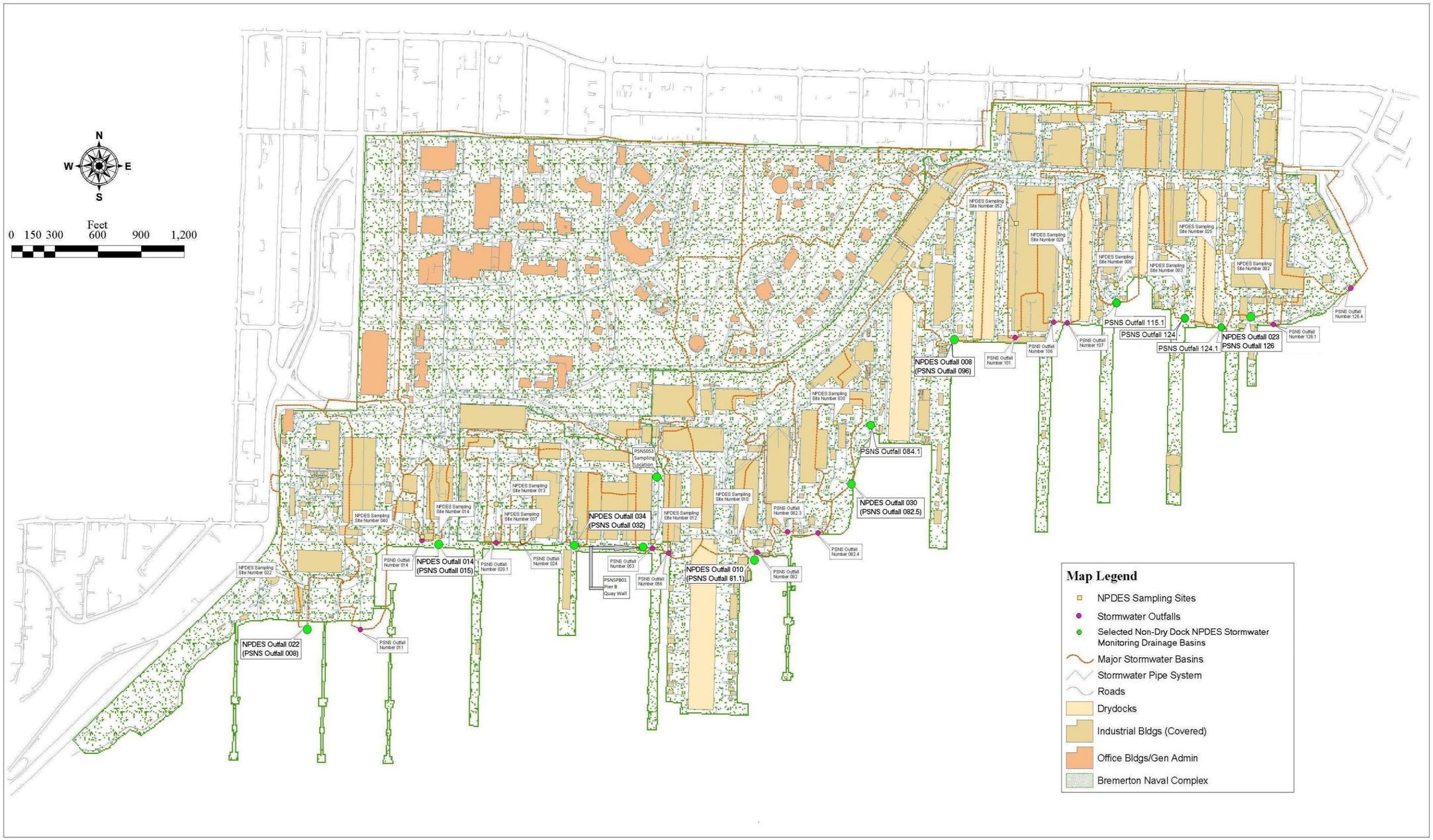

Figure 5. Selected Drainage Basin and Outfall Monitoring Location for Non-Dry Dock Stormwater Monitoring at the Bremerton Naval Complex

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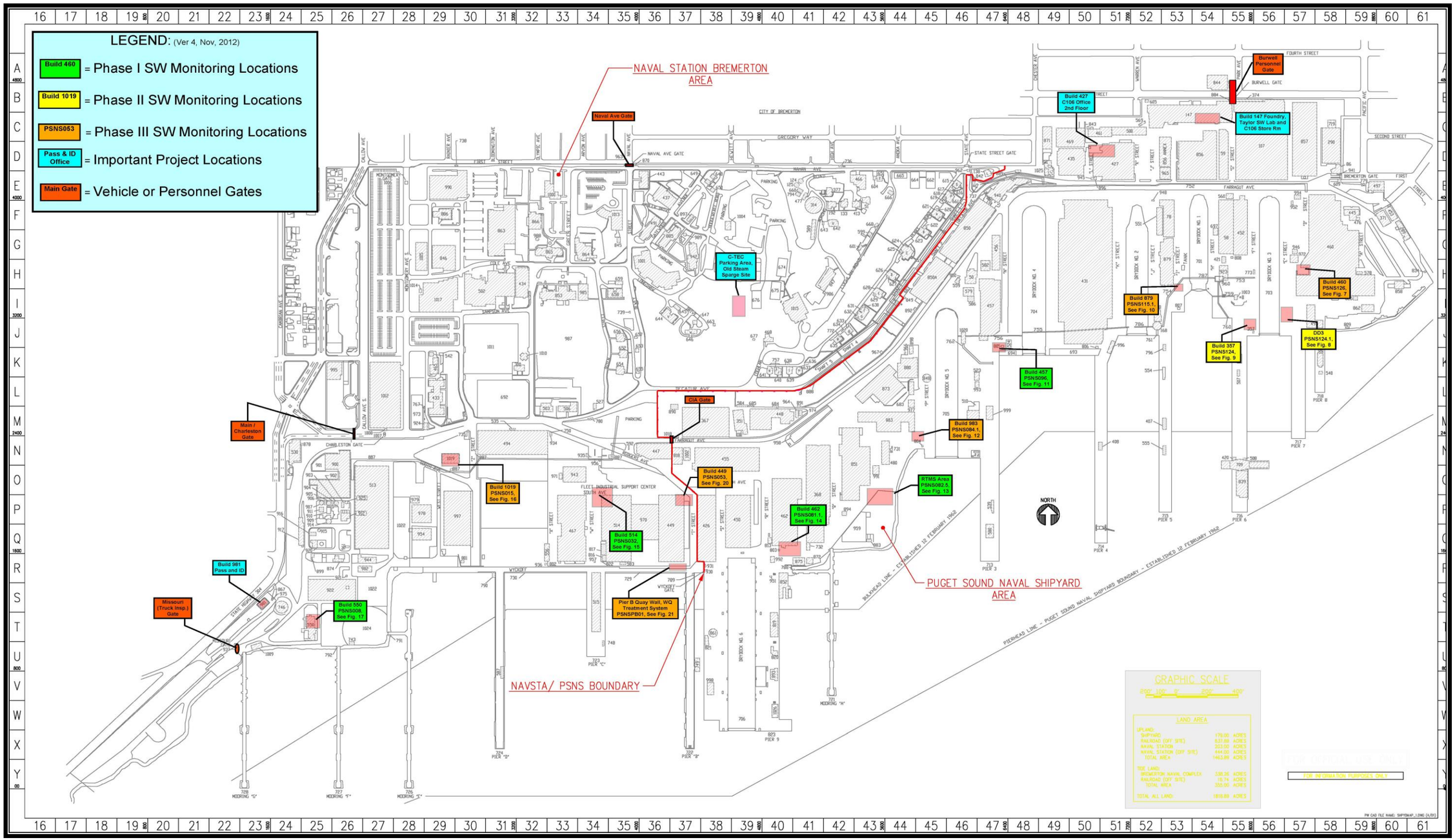

Figure 6. BNC Station Map with Phase III Monitoring Locations and Pertinent Features

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Table 5: Drainage Basins Selected For Phase III Monitoring And Associated Primary Activity.

PSNS& IMF Outfall #	Monitoring Phase	Geographical Area	Primary Work Activity
126	I, II and III	East CIA, Southwest B460 along "C" Street, east of DD3	Materials storage (outdoors)
115.1	II and III	East-central CIA, South-southeast of Bldg 879, west of DD1 (between DDs 1 and 2)	Materials storage (outdoors), various shops and training center, water front support activities
084.1	II and III	West CIA, Southeast section of Bldg 983, west of DD5	Vehicle and equip. traffic, rad. work builds, outside equip. storage, paint shop, recycling and industrial waste pretreatment
053	III	East NBK, Northeast corner of Build 449, inside of perimeter fence, along T-street	Vehicle and equipment movement and parking, material storage, Air Comp. facility, Mixed Waste Storage facility and general warehousing
015	I, II and III	Mid NBK, south side of McDonalds rest., east side of drive-through lane	Municipal / commercial / residential services
PB01	III	East NBK, South-southeast of Building 449, south side of Wyckoff Ave, Northwest of Moring Pier B, along quay wall (treatment vault)	Aircraft carrier / vessel support services

Table 6. Selected Drainage Basin Attributes – Phase III Sites

PSNS Outfall No.	Outfall Location	[1]Monitoring Location	Total Basin Area (acres)[a]	Basin Impervious Surface Area (acres)[a]	Basin Pervious Surface Area (acres)[a]	Monitoring Location Manhole ID	[2]Manhole Rim Elevation (FT)	[2]Approx. Elev. of Sampling Intake (FT)	[3]Effective Tide Height (FT)
126	47°33'37"N, 122°37'36"W	47°33'42"N, 122°37'42"W	15.22	15.00	0.22	5110	18.22	8.38	8.5
115.1	47°33'39"N, 122°37'54"W	47°33'40.4"N, 122°37'55"W	9.50	9.22	0.28	4860	17.72	1.27	1.25
84.1	47°33'30"N, 122°38'20"W	47°33'31.3"N, 122°38'20"W	0.55	0.55	0.0	551	17.69	5.22	5.50
053	Relocated, ~same location as PBO1	47°33' 27.3"N, 122°38'41.4"W	4.91	4.83	0.08	2749	17.90	9.51	10.5+[4]
015	47°33'21"N, 122°39'02"W	47°33'29"N, 122°39'03"W	92.26	46.13	46.13	A42	17.21	1.96	+2.5
PB01	No data available (~30' west of mon. station	, 47°33'22.2"N 122°38'41.9"W	3.00	3.00	0	SDMH1D	17.54	11.02	[4]Not Effected

[1]Monitoring location information was obtained using a hand held GPS device. This data is not contained in the Basin Description Table.

[2]As referenced to MLLW. All survey data obtained from previous measurements reported in historical PSNS&IMF documents (1994-2008).

[3]Effective Tide Height, based on NOAA tide predications, which would cause tidewater, under non-storm conditions, to be detected at the monitoring intake elevation for a certain monitoring location.

[4]Basin outfall has been retrofit with a Tideflex flapper valve. Its exact operation and subsequent effect on tidal height relation is unknown at this time. In the case of PB01, the Tideflex value and adjacent pump vault effectively keep out seawater.

[a]Basin areas supplied by PSNS C106, these data were revised December 2011 from their previous listing in the Basin Description Table.

7.1.12 Outfall PSNS053 (Phase III)

Basin PSNS053 is 4.91 acres located within the southeastern of the NBK, along the eastern flank of the Fleet Industrial Support Center. The drainage basin is bounded to the north by Farragut Avenue (adjacent to the CIA gate), to the northwest by Rogers Avenue (Building 447), heading south along T-Street (centered on Building 449), with various surface and roof drain inputs along it course. The basin is bound to the south by the Wyckoff Avenue quay wall / bulkhead, just to the west of Pier B. The stormwater monitoring station at MH2749 is located near the northeast corner of Building 449, along T-Street. The southerly portion of PSNS053 main drainage truck line (approximately 75 feet), including the outfall itself, has recently (2012) been redirected, and now terminates in a westerly facing direction through an offset in the quay wall. The outfall is fitted with a Tideflex® valve. This is in an attempt to prevent tidewater from entering the drainage system. A vault much closer to the outfall (MH2723) was originally assessed for monitoring, but was later discovered to be impacted by the new piping configuration and the Tideflex® valve.

The predominant work activities in this drainage basin include vehicle and equipment movement and parking, material storage, air comp. facility, Mixed Waste Storage facility and general warehousing. A diagram of the PSNS053 drainage basin is included in Figure 18.

7.1.13 Outfall PSNSPB01 (Phase III)

PSNSPB01 is a newly created (2012) outfall as part of the redevelopment of Pier B. PSNSPB01 drains approximately 3 acres from a combination of areas, including the western half of Pier B and a portion of the southern end of T-Street at its intersection with Wyckoff Avenue and the associated drainage collection along that portion of the quay wall. The stormwater monitoring station at SDMH01D is located near the northwest corner of Pier B, outside of the security fence, and to the southeast across T-Street from Building 449. SDMH01 accesses the eastern portion of a media-filter treatment vault that is between (north of) an oil water separator unit and a discharge pump station vault (to the west). Together these components, along with a flow splitter vault (to the east), combined to form the Quay Wall 729 Water Quality system.

The predominant work activities in this drainage basin include Aircraft carrier / vessel support services. A diagram of the PSNSPB01 drainage basin is included in Figure 19.

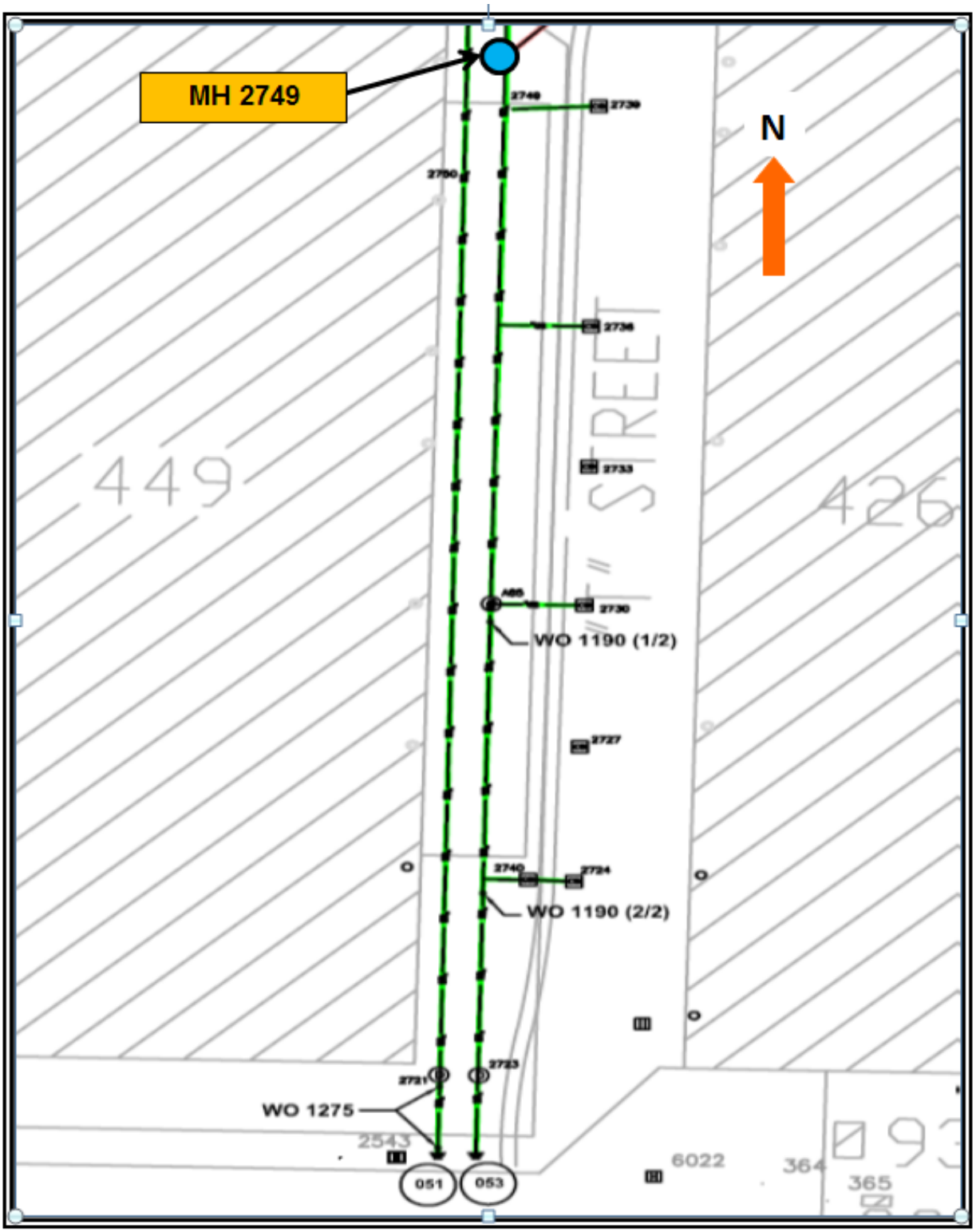

Figure 18. PSNS053 Monitoring Location at MH-2749

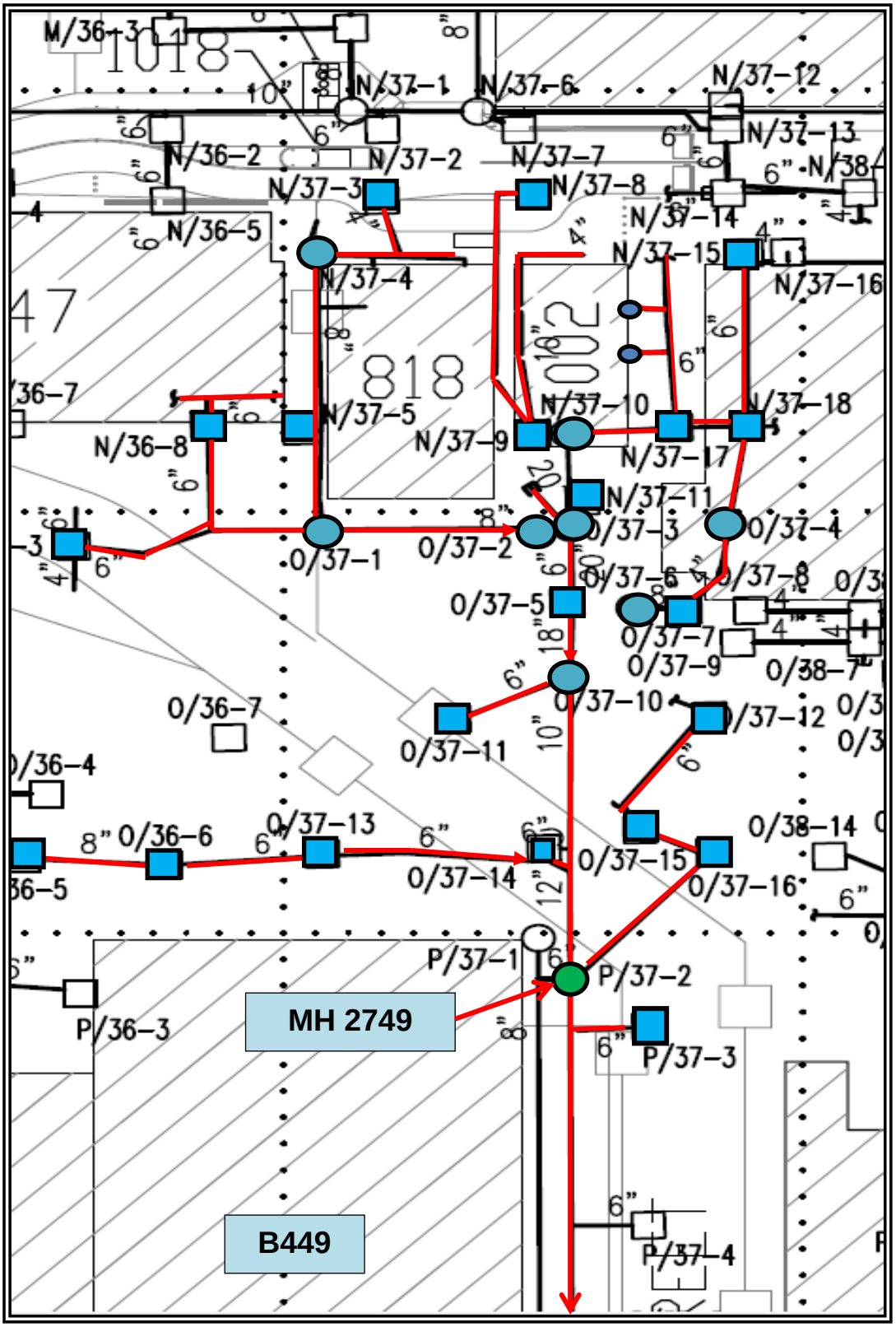

Figure 19. PSNS053, Northern Portion of Drainage Basin

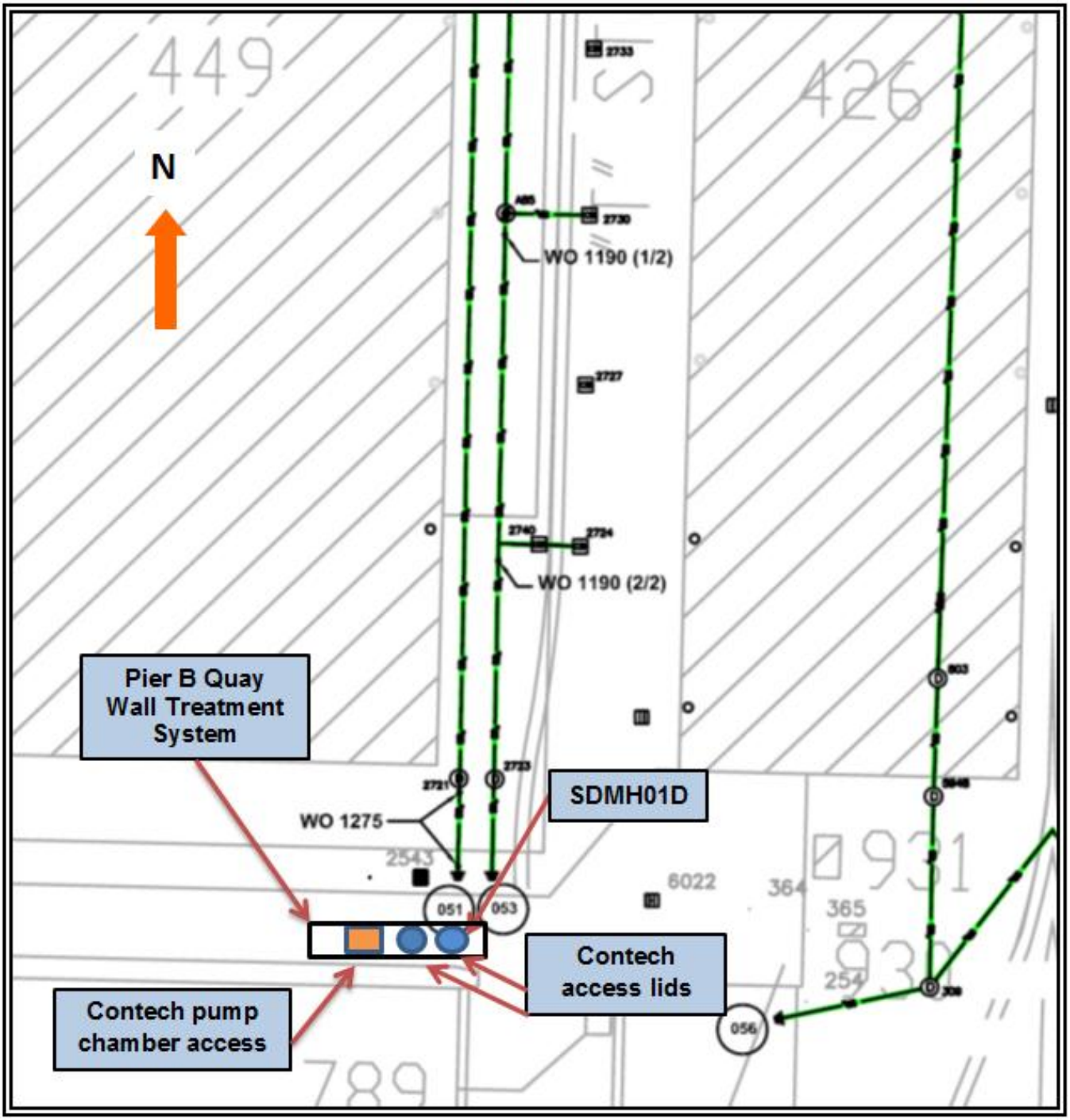

Figure 20. PSNSPB01 Monitoring Location at SDMH01D

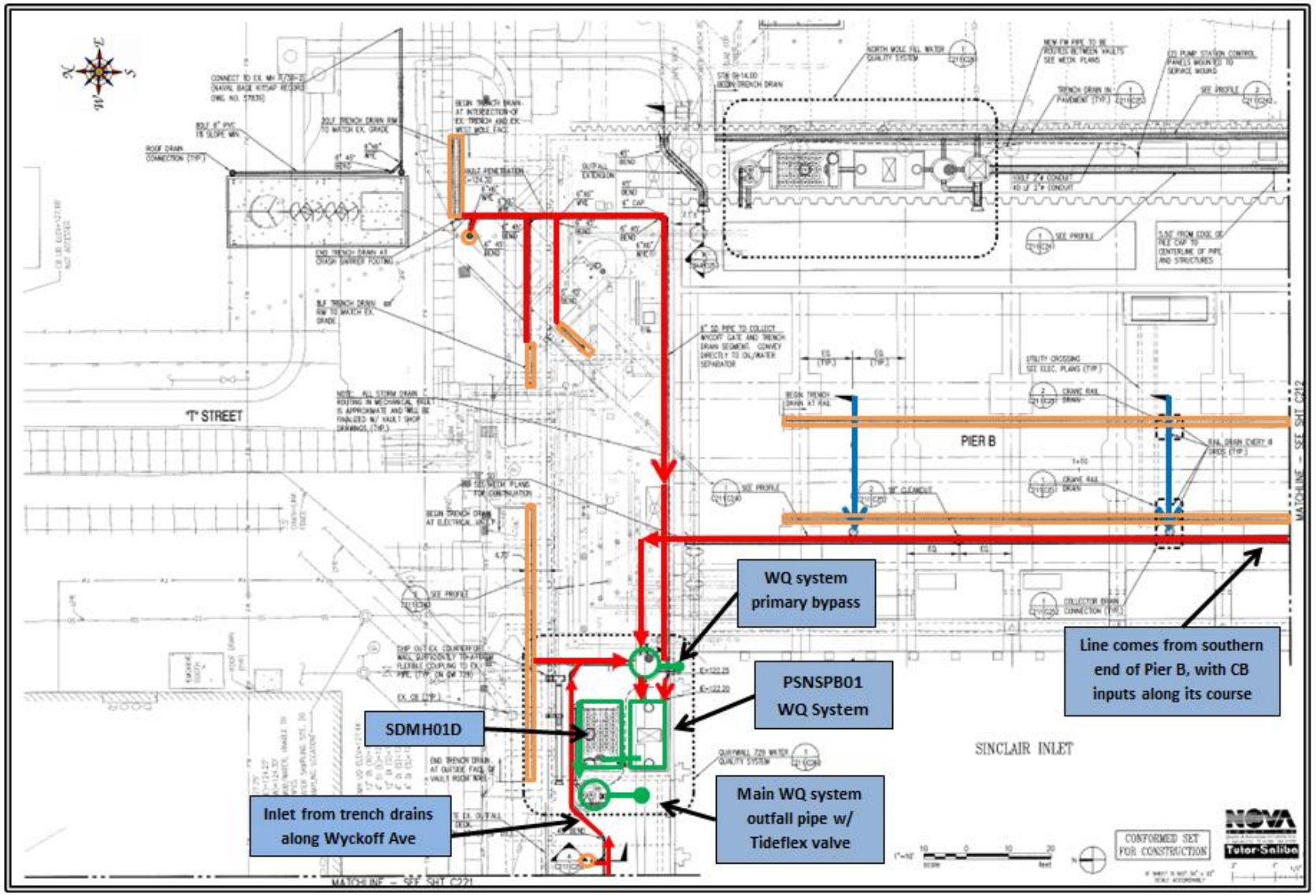

Figure 21. PSNSPB01 System Drainage Detail

7.2 MONITORING SITE SELECTION

7.3 QUALIFYING STORM EVENT

Phase III site stormwater samples will be collected and reported for three qualifying events at each station, ideally 18 total events (6 stations x 3 events). These stormwater events may be targeted from November, 2012 through May, 2013. Table 7 includes storm event criteria that will be used to determine qualifying storm events for the collection of grab and composite samples for chemical analysis for both the "wet season" and "dry season" portions of the water year. Table 8 provides information regarding qualifying antecedent dry periods for storm validation purposes.

Table 7: Qualifying Storm Event Criteria.

Criteria	Wet Season	Dry Season
Seasonal Period	October 1 – April 30	May 1 – September 30
Targeted Storm Size and Probability	≥0.20" in 24-hours ≥70% forecasted probability of occurrence 24-hours prior	≥0.10" in 24-hours ≥50% forecasted probability of occurrence 24-hours prior
Qualifying Storm Size	≥0.10", or a sufficient amount for sampling to have occurred for at least 2 hours during stormwater runoff	≥0.10", or a sufficient amount for sampling to have occurred for at least 2 hours during stormwater runoff

Table 8: Qualifying Antecedent Precipitation Conditions

Criteria	Wet Season	Dry Season
Standard	Less than or equal to 0.1" rain in previous 24-hours No rain in previous 6 hours	Less than or equal to 0.02" rain previous 72-hours No rain in previous 6 hours
Conditional(1)	"Conditional Antecedent Qualification" The 24-hr antecedent overage should not be greater than 20% of the overall storm event rainfall total	
Inter-event Dry Period(2)	6 hours minimum, 12 hours maximum	6 hours minimum, 12 hours maximum

(1) Qualifying conditions will be evaluated by the project team based on the latest forecast information. The antecedent dry period requirement may be relaxed in order to sample a significant storm event. In general, the antecedent dry period should consist of a discernible dry period with zero to no greater than 20% of the rainfall captured during the storm event.

(2) A storm event can be considered completed once there has been a 6-hour period with no precipitation. However water sampling could continue, as long as runoff is occurring or the station hydrograph is elevated above pre-storm conditions, for up to a 12-hour period with no precipitation, at which time the storm would be considered complete.

7.4 PRECIPITATION MONITORING

Table 9: Stormwater Outfall Total Discharge Volume Estimation Equations

PSNS Drainage Basin	Total Basin Area (ft^2)	Type of Surface	Percentage of Drainage Basin Surface Type	Area of Basin Surface Type (ft^2)	[1]Runoff Coefficient	Area of Basin Surface Type with Maximum Coefficient Value Applied (ft^2)	[2]Total Discharge Volume (ft^3)
126	662,986	Impervious	98.55	653,373	0.9	588,036	R(591,881)
		Pervious	1.45	9,613	0.4	3,845	
115.1	463,042	Impervious	97	449,151	0.9	404,236	R(409,792)
		Pervious	3	13,891	0.4	5,556	
084.1	23,958	Impervious	100	23,958	0.9	21,562	R(21,562)
053	214,000	Impervious	98	209720	0.9	188,748	R(190,460)
		Pervious	2	4,280	0.4	1,712	
015	4,018,862	Impervious	50	2,009,431	0.8	1,607,549	R(2,411,321)
		Pervious	50	2,009,431	0.4	803,772	
PB01	130,681	Impervious	100	130,681	0.9	117,613	R(117,613)

Notes: [1]These values are derived from various published sources regarding the RCM. [2]R = Amount of rainfall in feet.

7.5 WATER LEVEL MONITORING

7.6 CONDUCTIVITY MONITORING

7.7 STORMWATER SAMPLE COLLECTION

7.7.1 Grab Sampling

Table 10: Stormwater Grab Sample Analytes and Required Volumes

7.7.2 Automatic Time-Proportionate Composite Sampling

7.7.2.1. Composite Sample Analytical Parameters and Volume Needs

Table 11: Analytical Parameters and Required Sample Volumes for Routine Stormwater Composite Samples

7.7.2.2. Composite Sample Collection Method

7.8 STORMWATER SAMPLE COLLECTION MATERIALS

7.9 STORMWATER SAMPLE CONTAINER AND EQUIPMENT PREPARATION

7.10 SEDIMENT SAMPLE COLLECTION

As part of Phase III, sediment samples will be collected from within the stormwater vault at each of the six monitoring location (PSNS015, 053, 084.1, 115.1, 126 and PB01). Sediment samples will be collected during events of opportunity, such as deployments of equipment or maintenance tasks. During Phase II each sediment sample was analyzed for the parameters listed below (provided as reference only). Analysis of Phase III sediment samples will be conducted under a separate contract and scope of work. Actual analytes and methods may vary under this separate contract depending on project specific requirements.

- Total Organic Carbon
- Grain size
- Metals (Al, Ag, As, Cd, Cr, Cu, Ni, Pb, Zn)
- Mercury
- PAH
- PCB

Table 12. Analytical Parameters, Number and Analytical Methods for Sediment Sampling

Parameter/Specific Analyte	Sample Numbers	Analytical Method[1]
Total Organic Carbon	TBD	ASTM D4129-82 M
Grain Size	TBD	ASTM D422 MIPSEP
Metals	TBD	EPA 1638/1640m[2]
Hg	TBD	DMA[2]
PAH	TBD	GC-MS[2]
PCB	TBD	GC-ECD[2]

[1]Sediment Methods, detection limits, and reporting limits are provided in Johnston et al. (2011) *Sediment Verification Study Sampling and Analysis Plan.*

[2]Sediment analyzed for metals, Hg, PAH, and PCB will follow methods detailed in Johnston et al. (2011) and will remain consistent with the ENVVEST protocol to ensure comparability across projects.

7.11 STORMWATER MONITORING EQUIPMENT INSTALLATION AND SETUP

7.11.1 Stormwater Monitoring System

7.11.2 Precipitation Monitoring

7.11.3 Level and Conductivity Monitoring

7.11.4 Water Sampling Equipment

Figure 22. Generalized Diagram of Monitoring Site Equipment Layout

****This figure was labeled as Figure 18 in the 2011-12 PWP**

Figure 23. Generalized Schematic of Monitoring Station Components

****This figure was labeled as Figure 19 in the 2011-12 PWP**

7.11.5 Monitoring Equipment Preparation and Testing

8.0 SAMPLING PROCEDURES

8.1 PRECIPITATION, WATER LEVEL AND CONDUCTIVITY MONITORING

8.2 STORMWATER SAMPLE COLLECTION

8.2.1 Procedures for Storm Targeting

8.2.2 Pre-storm Site Setup

8.2.3 Storm Event Grab Sample Collection

8.2.4 Composite Sample Retrieval

8.2.5 Composite Sample Formulation Procedure

8.2.6 Field Sample Validation

8.2.7 Preventative Maintenance

8.3 SEDIMENT SAMPLE COLLECTION

Sediment samples will be collected at each stormwater monitoring location, as listed in Section 7.10. Sediment will be collected using pre-cleaned plastic spatulas to scoop available sediment from 3-5 locations from within the vault. Due to the potential for high concentrations of contaminants, the sample collection team will wear disposable boot covers and use a new set of equipment at each outfall location. This will ensure no cross contamination between outfalls and no tracking of sediment outside of the vault area. See Section 9.2.3 and 9.3.3 for further information on sediment sample processing; sample amounts, containers, preservation, and analytical holding times; and sample labeling and chain-of-custody procedures.

8.4 DATA ACQUISITION REQUIREMENTS (NON-DIRECT MEASUREMENTS)

9.0 MEASUREMENT PROCEDURES

9.1 LABORATORY SELECTION

9.2 POST STORM EVENT SAMPLE PROCESSING

9.2.1 Stormwater Sample Handling and Custody Requirements

9.2.2 Stormwater Sample Containers, Preservation, and Holding Times

9.2.3 Sediment Sample Handling and Custody Requirements

Sediment samples will be collected into a single 8 ounce pre-cleaned glass jar, labeled and placed in a cooler for transport to the analytical laboratory. If the sample is not to be delivered to the laboratory within the event or work shift it needs to be placed into a plastic baggie, sealed and stored in the SW Lab freezer. A chain-of-custody form will be completed and the laboratory (PNNL) notified. Upon arrival at the analytical laboratory, the sediment samples will be formally transferred following established chain-of-custody procedures from the field crew to the analytical laboratory for further processing and analysis. The laboratory will homogenize the samples prior to splitting them off for the requested parameters. Sediment sample holding conditions and recommended holding times limits (HTLs) are defined in Table 14. HTLs will be calculated from the time of sample collection unless samples are archived at -18˚C. If samples are archived at -18˚C then the HTL will be calculated from first thaw. The HTLs specified in this table are routine, generally accepted HTLs and laboratories will endeavor to meet these HTLs.

Table 13. Typical Sample Container Types, Preservatives, Recommended Handling, and Holding Times for Routine Non-Dry Dock Stormwater Samples.

Table 14. Typical Sample Container Types, Sample Size, Preservative Requirements and Holding Times for Sediment Samples.

9.2.4 Sample Labels and Chain of Custody

Samples will be uniquely labeled with information corresponding to the COC. The laboratory will provide waterproof labels for all sample containers and the field team will use waterproof ink to write the information on the sample label. The COC will include the following information:

- Project name and number
- Sample ID with the following convention (for grab and composite stormwater samples):
    - Storm event number (e.g. for first event is SW01- and subsequent events SW02-, etc.), followed by,
    - Sample label unique to each parameter (for grab components) or container (for composite samples) (e.g. -0001, 0002, and so on)
    - Complete ID would be SW01-0001, etc.

      (for Stormwater equipment blanks and other QC samples)
    - Sample label unique to each blank or QC sample (e.g. SW0001, SW0002, and so on)

      (Sediment samples)
    - SQV07-0001, -0002, -0003, and so on. **Use the next <u>two</u> available codes for each sediment sample.** One of the code #s will be assigned to the metals fraction and the other to the organics fraction.
- Station code (PSNS126, PSNS124.1, PSNS124, PSNS115.1, PSNS096, PSNS084.1, PSNS082.5, PSNS081.1, PSNS032, PSNS015 or PSNS008)
- Date and time of sample collection (24-hour clock using Pacific Time)
- Matrix (freshwater, saltwater, or sediment)
- Sample type (grab or composite)
- Quality control type (equipment blank, etc.)
- Check parameters
- Overall individual composite sample conductivity readings
- Storm identification number (e.g. SW01, SW02, …)

The COC procedures will be strictly followed to provide an accurate written record of the possession of each sample from the time it is collected in the field through laboratory analysis. The laboratory will provide sufficient copies of blank COC forms. Example COC forms are included in Appendix I. All sample information (i.e., sample date/time, sample matrix, number of containers, etc.),

including all required analyses, will be logged onto a COC form after sample processing in the field laboratory and prior to formal transfer of sample containers to the analytical laboratory. Any time possession of the samples is transferred, the individual(s) relinquishing and receiving the samples will respectively sign, date, and note the time of transfer on the COC form. This record documents the transfer of custody of samples from the samplers to the laboratory. The person responsible for transfer/transport of the samples to the analytical laboratory will sign the COC form and retain the record in a Ziploc bag in one of the sampler coolers. The completed COC forms will remain on file with PNNL for the project record.

Coolers will contain ice to maintain a proper temperature ($4\pm2^{o}C$) during transfer. Coolers will be packaged accordingly to guard against damage or breakage. If it is necessary to ship any of the coolers via courier or through express delivery services, each will be sealed with custody tape prior to transfer/transport and the custody seal will be signed and dated by the person transferring/transporting the samples, secured across the lid and body of the cooler, and covered with clear shipping tape.

Upon receipt of the samples, the laboratory will assume responsibility for maintaining sample chain of custody. The composite samples will be split into parameter specific containers at MSL and will follow all applicable internal procedures for sample log-in, storage and holding times, tracking, and control.

Immediately upon receipt by a laboratory, the condition of samples must be assessed and documented. The contents of the shipping container must be checked against the information on the COC form for anomalies. If any discrepancies are noted, or if laboratory acceptance criteria or project-specific criteria are not met, the laboratory must contact the Data Collection Consultant Project Manager and the Sample Event Lead for resolution of the problem. The discrepancy, its resolution, and the identity of the person/s contacted must be documented in the project file. The following conditions may cause sample data to be unusable and must be communicated to the laboratory team leader:

- The integrity of the samples is compromised (e.g., leaks, cracks, grossly contaminated container exteriors or shipping cooler interiors, obvious odors, etc.);
- The identity of the container cannot be verified;
- The proper preservation of the container cannot be established;

- Incomplete sample custody forms (e.g., the sample collector is not documented or the custody forms are not signed and dated by the person who relinquished the samples);
- The sample collector did not relinquish the samples; and,
- Required sample temperatures were not maintained during transport (4°C ± 2).

The custodian must verify that sample conditions, amounts, and containers meet the requirements for the sample and matrix. A unique sample identifier must be assigned to each sample container received at the laboratory, including multiple containers of the same sample. Each laboratory maintains a quality control program that will be followed during the project.

9.3 CHEMICAL ANALYSIS PROCEDURES

9.3.1 Analytical Instruments

9.3.2 Analytical Methods and Reporting Limits for Stormwater Samples

Table 15. Target Constituents, Analytical Methods and Method Reporting Limits (RL) For Routine Stormwater Samples

9.3.3 Analytical Methods and Reporting Limits for Sediment Samples

During Phase II each sediment sample was analyzed for the parameters listed in Section 7.10 (provided as guidance only). Analysis of Phase III sediment samples are to be conducted under a separate contract and scope of work. Actual analytes and methods may vary under this separate contract depending on project specific requirements. Section 9.3.3 of the PWP should be considered as reference source only.

10.0 QUALITY CONTROL

10.1 FIELD QUALITY CONTROL

10.1.1 Field Quality Control Procedures

10.1.2 Field Control Samples

10.1.2.1. Field Duplicates

10.1.2.2. Field Blanks

10.1.2.3. Equipment Blanks

10.1.2.4. Field Control Sample Corrective Action

Table 16.Summary of project field quality control requirements

10.2 LABORATORY QUALITY CONTROL

10.2.1 Laboratory Control Samples

10.2.2 Data Quality Control Criteria

Table 17. Precision, Accuracy, Sensitivity, And Completeness Control

10.3 INSTRUMENT TESTING, INSPECTION, AND MAINTENANCE

10.4 INSTRUMENT CALIBRATION AND FREQUENCY

10.5 INSPECTION/ACCEPTANCE OF SUPPLIES AND CONSUMABLES

11.0 DATA MANAGEMENT PROCEDURES

11.1 FIELD ACTIVITY DATA

11.2 FIELD MONITORING DATA

11.3 LABORATORY DATA

12.0 ASSESSMENT/OVERSIGHT

12.1 ASSESSMENTS AND RESPONSE ACTIONS

12.1.1 Laboratory Performance and Systems Audits

12.1.2 Field Team Performance and System Audits

13.0 REPORTING

There are three types of reports generated in relation to the non-dry dock stormwater monitoring activities covered in this PWP/A. These report types are:

(1) Sample Event Reports

(2) Project Status Reports, and

(3) Annual Report of Progress

13.1 SAMPLE EVENT REPORT

Two types of sample event reports are generated. The first is the storm report, which summaries each qualified (successfully collected and storm-validated event, where properly prepared, representative samples are submitted to the laboratory) or non-qualified (false start events, where field efforts do not culminate in qualifying samples being submitted to the laboratory) storm sampling event or effort. Sample event reports will provide specific details of each stormwater sampling event, expect for analytical testing results. Upon approval from the Navy Project Team, details from multiple storm events may be combined into a single sample event report if the sampling frequency or other considerations warrant this compilation. The assemblage of sample event reports will be used to efficiently and accurately develop certain components of the Annual Report, as described in Section 13.3.

A typical sample event file may include, but not limited to, the following information and components:

- Sample event hydrographs, showing rainfall and when samples were collected
- An estimate of the total storm runoff volume as described in Section 7.4
- Copies of pertinent sampling field sheets (includes bench top conductivity testing results)
- Validation summary sheet indicating how the sample event and samples collected have met the criteria listed in Section 7.0
- Copies of sample chain-of-custody forms
- Documentation of weather tracking and forecasts

- Any other supporting documents or calculations (e.g. sampler reports, runoff calculation worksheets, enabling information table, etc.)
- Rainfall total information for monitoring stations and the PSNS&IMF gauge
- Narrative discussion of storm event details, encountered anomalies or issues that will be needed for later data analysis and reporting
- Descriptive statistics of rainfall, vault and other data generated during the storm event and/or periods since the last storm event
- Monitoring station map
- Telemetry Data Summary Report (TDSR)s, which provide a quality assessment (data gap identification, sensor drift, anomalies, etc.) for a specified segment of rainfall and vault parameter data. The TDSRs will be submitted along with each corresponding event report. TDSRs cover the field data review and verification requirements specified in Section 14.1 (see 2011-12 PWP).
- Telemetry Metadata Report; a complete data download package (submitted on CD-ROM) with accompanying monitoring station descriptive information and complete project year data assessment summary (per station) of storm period and non-targeted period data, along with the accompanying TDSRs. The Telemetry Metadata Report will be compiled and submitted once per project year.

Sample event reports will be prepared shortly after each qualified or false-start sampling event. Reports for false-start events will contain only those reporting elements, as listed above, pertinent to those events. Sample event reports will completed in a technical memorandum style document in a single, electronic iteration. Hard copies of these reports will be included in the Annual Report.

The second type of sample event report will be the storm chemistry data report. The chemistry data report for each storm event will be submitted as a PDF document that includes the following:

- Summary table of the field results,
- Summary table of the associated QC data,
- Data qualifiers,

- QC narrative that summarizes preparation and analytical methods, QC samples analyzed with each parameter, and any QC issues encountered during the analyses,
- Laboratory login and sample receipt information document the condition of the samples upon arrival,
- Chain of Custody

13.2 PROJECT STATUS REPORTS

13.3 ANNUAL REPORT OF PROGRESS

14.0 DATA REVIEW VERIFICATION AND VALIDATION

14.1 FIELD DATA REVIEW AND VERIFICATION

14.2 LABORATORY INTERNAL REVIEW

14.3 LABORATORY DATA DELIVERIES

14.4 LABORATORY DATA REVIEW AND VALIDATION

14.5 DATA QUALITY AND USABILITY ASSESSMENT

15.0 CORRECTIVE ACTIONS

15.1 FIELD CORRECTION ACTION

15.2 LABORATORY CORRECTIVE ACTION

15.3 CORRECTIVE ACTIONS FOLLOWING DATA REVIEW

16.0 REFERENCES

APPENDIX A:

FIELD ENVIRONMENTAL HEALTH & SAFETY PLAN

FINAL

Field Environmental Health and Safety Plan

For

NON-DRY DOCK STORMWATER MONITORING FOR PUGET SOUND NAVAL SHIPYARD, BREMERTON, WA

PSNS Project ENVVEST Study Area

September 2010
Annual Review October 2011
Annual Review October 2012

Prepared By:
Pacific Northwest National Laboratory
Marine Science Laboratory, Sequim, WA
And
Taylor Associates, Inc.

Contract No.: N4523A12MP00086

Pacific Northwest NATIONAL LABORATORY

TAYLOR ASSOCIATES, INC.

ENVVEST COMMUNITY GOVERNMENT TRIBES

Annual Review October 2012

This document was reviewed by the field team in October 2012. Minor revisions to the original field safety plan were identified. The revisions include the additional of two new sites during the 2012-13 Phase III study. Additional sampling locations fall within either the Confined Industrial Area (CIA) or Naval Base Kitsap (NBK) and do not add additional hazards to those already addressed in the Field Environmental Health and Safety Plan.

The Phase III 2012-13 sites include two new sites and four sites previously sampled. The list of sites and potential new sites are:

a. New Sites – Two will be selected from this list
    i. PSNS053
    ii. PSNS107
    iii. PSNSWQ1 - quay wall WQ Treatment System at Pier B
b. Previously Sampled Sites Remaining in Phase III
    i. PSNS084.1
    ii. PSNS015
    iii. PSNS115.1
    iv. PSNS126

Table of Contents

Introduction

The Pacific Northwest National Laboratory (PNNL) is committed to a safe and healthful workplace for all employees. The PNNL integrates Environment, Safety, and Health (ES&H) requirements into the processes for planning and conducting work at PNNL in accordance with PNNL's Operating Contract (DE-AC05-76RL01830) Clause I-87 that implements DOE Acquisition Regulation (DEAR) Clause 970.5223-1, Integration of Environment, Safety, and Health Into Work Planning and Execution (DEC 2000). The PNNL standard operating procedures (SOPs) include descriptions of processes for accomplishing work safely and the road map of the systems and processes that make up the PNNL Integrated Environment, Safety, and Health (IESH) Program. (Note: The IESH Program is PNNL's implementation of the U.S. Department of Energy [DOE] Integrated Safety Management System [ISMS]. The terms IESH and ISMS are interchangeable within the context of the PNNL IESH Program.).

The IESH Program is accomplished by employing an integrated set of management systems that deploy the requirements defined in the DOE ISMS Manual. Within the context of DOE's ISMS language, the ISMS Core Functions include defining work scope, identifying and analyzing hazards and risks associated with the work, developing and implementing controls to mitigate hazards and risks, performing work within the controls, and providing feedback for continuous improvement. These processes are implemented down at the project level and include the development of a Field Environmental Health and Safety Plan (EHS).

The EHS will be kept on-hand during all project field activities and will be reviewed as necessary. This plan will be amended or revised as project activities or conditions change. This EHS will serve as the overall project safety guidance document for field tasks described in the Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAP). This EHS will be attached to the combined project guidance documents (the FSP and the QAP). The field coordinator (FC) is to be familiar with all of the documents listed above and the contents of this plan and ensure all field team members and subcontractors read and acknowledge their understanding of and commitment to abide by the provisions herein by signing the Employee Signoff form in this plan.

Objectives

The goal of the project and the associated field tasks is to collect and characterize non-dry dock stormwater and associated data from seven selected outfall locations within the Puget Sound Naval Shipyard & Intermediate Maintenance Facility (herein after referred to as the Shipyard) located in Bremerton, WA (Figure 1). This work fulfills the requirements of the (Working Draft) National Pollution Discharge Elimination System (NPDES) Permit Number WA-00206-2 (US EPA 2008a, b). In addition, this data will support the continual development of the ENVVEST land-use and land cover (LULC) stormwater loading model as part of the contaminant mass balance for Sinclair and Dyes Inlet (Brandenberger et al. 2008).

Specific field tasks to be performed include site evaluations, establishment of seven monitoring locations in 2010 and six in 2011 (Figure 1), placement and relocation of sampling equipment at each location, collection of composite samples during three storm events at each location, and removal of sampling equipment as necessary following completion of the project. Detailed descriptions of the field task activities are provided in the statement of work (SOW), QAP for Non-Dry Dock

Stormwater Monitoring Conducted under the NPDES by the Shipyard (Taylor Associates Inc. 2009), and the FSP. The FSP amends the QAP with changes to logistics and site information for all seven stations selected for monitoring in the QAP and document revisions, additions, and deletions to the stormwater sampling procedures and quality assurance/quality control (QA/QC) criteria. These documents collectively serve as guidance for field and associated laboratory procedures conducted during the project. Procedures supporting the overall project objectives described in these guidance documents include:

2010 Objectives

1. Conducting up to three days worth of sites visits to gain setup and associated information regarding the seven monitoring stations listed in the QAP and FSP.
2. Preparing seven sampling locations identified in the QAP and FSP for the collection of time composited samples during a storm event.
3. Preparing an FSP to serve as an addendum to the QAP (Taylor Associates Inc. 2009) to document site locations and access logistics.
4. Collecting grab and composite water samples for three qualifying storm events at each of the seven stormwater sampling locations according to the procedures identified in the QAP and the FSP.
5. Conducting chemical analyses per the QAP and as amended in the FSP on stormwater composite samples. The sample count includes three storm events x seven sites + three field duplicates + seven equipment blanks for a total of 31 samples plus appropriate quality control samples.
6. Preparing field-sampling reports documenting the results of the sampling for each sampling location and storm event and prepare an annual report summarizing the results of chemical analysis and documenting progress and provide the status of non-dry dock stormwater monitoring at the Shipyard relative to the working draft NPDES permit (USEPA 2008a).
7. Attending at least two meetings with stakeholders and/or resource agencies and provide integration with the ENVVEST stakeholder working group. The integration will include compiling the new stormwater data with the database of stormwater concentrations from previous ENVVEST studies.

2011 Objectives

1. Update 2010 sampling plan and quality assurance project plan with new site specific information pertaining to the six Phase II sampling locations, as well as sediment sampling methodology and analysis information.
2. Following the procedures identified in the Non Dry Dock Stormwater Project Work Plan (Taylor/TEC and PNNL 2011) and addenda, collect composite stormwater samples for at least four qualifying storm flow events at each of the six Phase II stormwater sampling locations.
3. Analyze the sediment and water samples for the parameters listed in Table 3 of the 2011 statement of work.
4. Provide technical data evaluation and recommendations for improvements; a summary of the chemical analyses, descriptive statistics, and document progress relative to other regional stormwater sampling in an annual report.

Project Information and Description

PROJECT NO: PNNL 54220 Modification 3 MIPR # N4523A10MP00034

CLIENT: U.S. Navy, Puget Sound Naval Shipyard

PROJECT/SITE NAME: Non-Dry Dock Stormwater Monitoring for PSNS&IMF, Bremerton, WA

SITE LOCATION: Puget Sound Naval Shipyard, Bremerton, WA

Roles and Responsibilities

NAVY PROJECT MANAGER: Bruce Beckwith, PSNS Code 106, 360 476-9678 (new manager will be named in November 2011)

NAVY TECHNICAL COORDINATOR: Robert Johnston, SPAWAR, 360-782-0113

PNNL PROJECT MANAGER: Jill Brandenberger, 1529 West Sequim Bay Road, Sequim, WA, Office: 360-681-4564, Cell: 360-670-3241

SUBCONTRACT MANAGER AND FIELD COORDINATOR: Dave Metallo, Taylor Associates, Inc., Division of TEC Inc., 2825 Eastlake Avenue East, Suite 300, Seattle, WA 98102 Office: 206-267-1400, Cell: 206-794-0095

DATE HEALTH AND SAFETY PLAN PREPARED: 19 August 2010; revised October 2011

DATE(S) OF SITE WORK: September 2010 – June 2011; Revised to October 1, 2011 through September 30, 2012.

SITE ACCESS: The project site will be controlled by others. All sampling sites are located on the military installation of PSNS&IMF Shipyard. The Pacific Northwest National Laboratory (PNNL) and Taylor Associates, Inc. (TAI) staff will be subject to their controls and procedures. Therefore, site access will require coordination with the base Pass and ID Office to ensure all policies and procedures for access are maintained through the study period. In addition, several sites are located within the Controlled Industrial Area (CIA) of the base and will require additional access and badge protocol. All field team members will obtain unescorted access to the Shipyard and comply with all rules stated by the Shipyard.

PREVAILING WEATHER: Mild, wet in winter and dry in summer.

SITE DESCRIPTION AND HISTORY: The study area for this task is located entirely within jurisdiction of the U.S. Department of the Navy at the Shipyard. It is a portion of the Project ENVVEST Watershed-Scale Study Area and is located on Sinclair and Dyes Inlets. These Inlets are inter-connected sub-basins of the Puget Sound and have been the focus of the stormwater loading task of ENVVEST since 2005. The collection of stormwater from outfalls within the Shipyard will support the continual development of an empirical stormwater loading model and refine the calculations on the estimated mass of contaminants entering these Inlets during storm events. In addition, the study will support the draft NPDES permit for the Shipyard.

Description of Tasks

This project documents the technical strategy, procedures, and performs the first year of data collection needed for monitoring stormwater basins within the Shipyard to support development of a NPDES permit for non-dry dock stormwater sampling. To address anticipated future permit monitoring requirements, non-dry dock stormwater monitoring will be conducted at seven select outfalls located within the Shipyard. Specific field tasks to be performed by the PNNL and the sub-contractor of TAI include the following:

Task 1: Conduct site surveys to determine the locations and logistics required for citing of the seven monitoring stations. Proposed locations were documented in the QAP (Taylor Associates Inc. 2009). Surveys will be conducted by PNNL, TAI, and Shipyard Code 106 stormwater management personnel to ensure locations and logistical requirements will not interfere with current Shipyard practices. The anticipated seven sampling locations have been approved by the Shipyard. The approved final sampling locations will be detailed in the FSP.
2011 Update to six new sampling locations (Figure 1 green).

Task 2: Equipment necessary for the collection of time-paced sample collection will be deployed at each site in cooperation with the Naval Facility Engineering Command (NAVFAC) Public Works Department located at the Shipyard. The field equipment tasks will include mobilization-demobilization of all field equipment unless the Shipyard requests permanent monitoring installations. These tasks will also include routine and non-routine maintenance of the equipment while installed at each sampling location.

Task 3: Three qualifying storm events will be sampled at each of the seven storm water monitoring locations (see Table 1 and 2 of the SOW). For logistical purposes, the stations will be divided into two groups and equipment will be moved from Group 1 locations to Group 2 locations after three qualifying storms are sampled or at the discretion of the Shipyard.
2011 Update to collect four storms at each of the six locations.

A health and safety hazards analysis has been performed for each task and is incorporated in this plan through task-specific hazard controls and requirements for monitoring and protection. This project does not involve tasks regulated by the Occupational Safety and Health Administration (OSHA) under 29 Code of Federal Regulations (CFR) 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER).

Field Locations

Figure 1. a) The location of Puget Sound Naval Shipyard & Intermediate Maintenance Facility (Shipyard) within Sinclair and Dyes Inlets in the central Puget Sound. b) 2010 seven sampling locations in red and 2011 sampling locations in green.

Personnel and Contact Information

The field team will have a single point of contact serving as the FC (Dave Metallo or delegate) and will report to the PNNL Project Manager (PM Jill Brandenberger or delegate) prior to commencement of field work and after the completion of each day's field sampling.

Field Team Members from Navy, PNNL, and TEC *(October 2011 Updated List)*

Navy	
Bruce Beckwith, Navy Project Manager Puget Sound Naval Shipyard & IMF c/106.32 Water, Special Projects Supv. (acting) Office: 360 476-9678 Email: bruce.beckwith@navy.mil	Dr. Robert K. Johnston, Technical Coordinator Marine Environmental Support Office – NW Space and Naval Warfare Systems Center, c/o Code 106.32, Puget Sound Naval Shipyard Office: 360-782-0113, Cell: 360-961-9072 Email: johnston@spawar.navy.mil
Jacquelyn Young, Navy NPDES Program Manager Office: (360) 476-4738 Email: jacquelyn.young@navy.mil	Christina Gebhart, Navy Stormwater Program Support C/106.32 Office: 360-476-9676 christine.gebhart@navy.mil
Chelsea Grace, Navy Pollution Prevention Office: (360) 476-2630, Pager: 360-476-5295 Email: chelsea.grace@navy.mil	Eric Mollerstuen, Navy NEPA Office: 360-476-4594, Cell: 360-440-3524 Pager: 360-476-8550 Email: eric.mollerstuen@navy.mil
Duy Pham, Navy Water, Sanitary Sewer Office: 360-476-0122, Cell: 360-781-1284 Pager: 360-476-8550 Email: duy.t.pham@navy.mil	C106.32 Branch – Stormwater Cell Phone 360-340-5279; **PSNS Emergency 911 (ONLY on Shipyard phone) (360) 476-3333**
PNNL	
Jill M Brandenberger, PNNL Project Manager Office: 360-681-4564, Cell: 360-670-3241 Email: Jill.Brandenberger@pnnl.gov	Li-Jung Kuo, PNNL Office: 360-681-4589, Cell: 979-739-3025 Email: Li-Jung.Kuo@pnnl.gov
Taylor/TEC	
Dave Metallo, TEC/TAI Project, Field Manager and Lead Storm Controller Office: (206) 267-1400 x8210, Cell: (206) 794-0095 DCMetallo@tecinc.com	Brian Rupert, TEC/Taylor Field / Task Manager Office (206) 267-1400 x8213 Cell (360) 620-7254 BWRupert@tecinc.com
Curtis Nickerson, TEC/Taylor Senior Technical Advisor Office (206) 267-1400 x8235 Cell (206) 755-9956 CMNickerson@tecinc.com	Carla Milesi TEC/Taylor Alt. Storm Controller Office (206) 267-1400 x8219 Cell (206) 579-7163 CBMilesi@tecinc.com
Bryan Berkompas, TEC/Taylor Telemetry Systems, Alt. Storm Controller Office (206) 267-1400 x8217 Cell (206) 718-7446 BEBerkompas@tecinc.com	

Safety Plan and Hazard Mitigation

The field team will be working together collecting non-dry dock stormwater from seven outfalls located within the Puget Sound Naval Shipyard, Bremerton, WA (Shipyard). All field crew members have a basic understanding of first aid and are cognizant of the hazards involved with field work. This section identifies hazards associated with the project and provides safe work practices and control measures used to reduce or eliminate these known and potential hazards. These practices and controls are to be implemented by the PNNL field team members and their subcontractor, Taylor Associate, Inc. They must maintain awareness of the hazards affecting them regardless of who is responsible for controlling the hazards (e.g. Shipyard activities).

Date: August 19, 2010	**Author: Jill Brandenberger (360-681-4564)**
Project #: 54220	**Project Title**: Non-Dry Dock Stormwater Monitoring for PSNS&IMF, Bremerton, WA

Detailed description of activities provided above.

1. Shipyard Operations: Working within the Puget Sound Naval Shipyard (PSNS) is cognizant of all activities and regulations required by those with access to the PSNS.
2. Traffic (Driving): Staff will drive between their respective locations (e.g., Seattle for TAI and Sequim for PNNL) to Bremerton, WA and driving within the PSNS boundaries. In addition, sites may be located in high traffic areas.
3. Heavy and awkward equipment: Staff may have to carry heavy equipment to and from the site.
4. Fatigue/Physical Stress: The field work will involve long hours collecting stormwater, which can be physically challenging.
5. Environmental Extremes (Exposure to the Elements): Exposure to the elements (heat, cold, rain) is a concern. Freezing conditions may occur during periods of field work.
6. Confined Space: Select field team members may need to access manholes, which are confined space hazards.

Work Location: Puget Sound Naval Shipyard, Bremerton, WA

ES&H Hazards:			
☐ Chemical	■ Electrical hazards	■ Traffic	■ Fatigue/physical stress
■ Biological	■ Powered equipment	☐ Off-road vehicles	☐ Hazardous flora/fauna
☐ Radiological	■ Manual lifting	☐ Boats/water hazards	■ Hazardous activities nearby (vehicles)
☐ NIR: Lasers/RF/ magnetic field	☐ Working alone	☐ U/W diving	■ Other dangerous environment
☐ Waste generation/ treatment/disposal	■ Work at heights	☐ Aviation	
	☐ Foreign travel	■ Environmental/ temp. extremes	
	■ Industrial site		

■ Other ES&H risks: Confined Space Entry

Risk Analysis: The level of risk is higher than normal, but can be mitigated to acceptable levels. All Supervisory or Lead field team members have extensive experience with this type of field work and will read this field plan and attend a documented kick-off field briefing at which safety precautions will be described and questions will be answered. Primary personal protective equipment (other than the confined space specific equipment, see below for details) for this field work consists of rain gear, work gloves, and warm clothes. Staff will always work at minimum in teams of two and be aware of weather. Staff will maintain awareness of themselves and others to avoid contact while hand tools or powered equipment are in use. Staff will monitor themselves and each other for signs of and take appropriate steps to ensure thermal regulation of the body through the use of layers of clothing and raingear. Sub-contractors will follow WAC 296-155 Part C-1 for fall protection http://www.lni.wa.gov/wisha/rules/construction/HTML/296-155c1.htm

Hazard Mitigation - Each activity lists specific hazards and mitigation methods

Activity	Hazard(s)	Hazard Control/Mitigation
Work within CIA at Shipyard	Noise	Given that some of the sites are located within the CIA, where heavy machinery is often in operation; ear plugs will be available for use. In the event that any of the site tasks occur within the vicinity of any noise producing operations, ear plugs will be used. There are three general classes of noise that are typically associated with construction activities: continuous noise, intermittent noise, and impact-type noise. Continuous noise is heard when a truck or saw is running; intermittent noise occurs when compressors or other equipment are in use; and an impact-type noise is produced by equipment such as percussion hammers and driving tools. Noise varies in intensity and is measured in decibels (dB). Prolonged exposure to noise above 85 dB from heavy equipment can cause hearing loss characterized by the inability to hear certain sounds. Ear plugs will be issued and must be worn when personnel are required to work NEAR saws, impact tools, and/or heavy machinery. As a general rule, ear plugs will be worn when it is difficult to hold a conversation at standard volume at a distance of 3 feet. Ear protection shall comply with OSHA 29 CFR 1910.95.
Work within CIA at Shipyard	Flying Debris/Objects	All personnel shall don American National Standards Institute (ANSI) compliant hardhats and safety glasses to protect the head and eyes from potential airborne debris/objects during work within the CIA, as required by the U.S. Navy.
Site setup and sampling	Electrical Hazards	During the site setup phase, a 110-volt generator will be used to power certain power tools. Additionally, during the storm sampling activities the auto-samplers will be powered by a 12-volt battery. The following precautions shall be observed when operating the generator and the samplers: • Only properly trained and qualified personnel will be permitted to work on unprotected energized electrical systems. • Workers shall not tamper with electrical wiring and equipment unless qualified to do so. All electrical wiring and equipment must be considered energized until lock-out/tag-out testing procedures are implemented. • Workers shall inspect electrical equipment, power tools, and extension cords for damage prior to use. Defective electrical equipment will not be used and will immediately be removed from service. • All temporary wiring, including extension cords and electrical power tools, must have ground fault circuit interrupters (GFCIs) installed. • Extension cords must be: ➢ equipped with third-wire grounding; ➢ covered, elevated, or protected from damage when passing through work areas; ➢ protected from pinching if routed through doorways; ➢ not fastened with staples, hung from nails, or suspended with wire. • Electrical power tools and equipment must be effectively grounded or double-insulated and Underwriters Laboratory (UL) approved. • Workers shall operate and maintain electric power tools and equipment according to manufacturers' instructions. • Maintain safe clearance distances between overhead power lines and any

Hazard Mitigation - Each activity lists specific hazards and mitigation methods		
Activity	**Hazard(s)**	**Hazard Control/Mitigation**
		electrical conducting material unless the power lines have been de-energized and grounded, or where insulating barriers have been installed to prevent physical contact. Maintain at least 10 feet from overhead power lines for voltages of 50 kV or less, and 10 feet plus 1-inch for every 1 kV over 50 kV. • Temporary lights shall not be suspended by their electric cord unless designed for suspension. Lights shall be protected from accidental contact or breakage. • Protect all electrical equipment, tools, switches, and outlets from environmental elements.
Site setup and sampling	Slip, Trip, and Fall Hazards	Falls as a result of slipping or tripping are generally the most common form of injury on project sites. These injuries typically are a result of poor housekeeping, lack of attention to detail, or simple carelessness. Personnel shall take precautions when working in areas where slip, trip, and fall hazards exist by watching their footing and being aware of their surroundings at all times. Work areas shall be kept clear of trash, debris, and hand tools that are not in use in the immediate work area. Such hazards shall be marked as necessary with a traffic cone, CAUTION tape, or similar warning to avoid slips, trips, and falls.
Heavy Lifting	Back Injury	The field team will plan the storage and staging of equipment and materials to minimize lifting and carrying distances. They should use their best personal judgment in determining loads that they can safely lift. In general, individuals should not attempt to lift loads of 50 pounds or more without the assistance or appropriate lifting equipment. When possible, loads should be lifted with two hands, without rotation of the trunk, using the leg muscles (not back muscles) for elevation. Loads should also be lifted so that the center of mass is stable during the initiation and throughout the duration of the lift. Floor or ground surfaces should be in good condition (i.e., clear of obstacles, level, dry). During times of heavy or prolonged lifting, personnel and supervisors should increase rest duration and frequency as necessary to reduce injury potential. Ambient temperature should also be considered if lifting requires repetitive motion. The Applications Manual For The Revised Lifting Equation (National Institute for Occupational Safety and Health [NIOSH]), contains more detailed information regarding repetitive lifting and required recovery periods. If frequent repetitive lifting is anticipated, it is recommended that the referenced NIOSH manual be consulted to estimate the hazard to workers in order to reduce potential injuries. The following recommendations should be considered when lifting or preparing to lift a heavy load: • Split heavy loads into smaller loads, and reduce the size of individual loads. • Bring the load close to the body. • Remove any horizontal barriers. • Avoid lifts near the floor or ground surface. • If loads near the floor or ground surface cannot be avoided, the load should fit easily between the legs. • Raise/lower the origin/destination of the lift. • Reduce trunk rotation by rotating the feet. • Reduce the lifting frequency and duration.

Hazard Mitigation - Each activity lists specific hazards and mitigation methods		
Activity	**Hazard(s)**	**Hazard Control/Mitigation**
		• Provide longer recovery periods. • Provide new containers with adequate handles. • Eliminate the need for lifting by redesigning or modifying the container characteristics. • Use mechanical lifting aids whenever possible. • Have someone assist with the lift, especially for heavy or awkward loads. • Make sure the path of travel is clear prior to the lift.
Sample Collection	Visible Lighting	Storm event sampling may occur before dawn or after dusk, particularly in the winter when hours of daylight are reduced. Sufficient lighting (i.e., enough to read field documents, labels, placards, and warning signs) will be provided for periods of low light by vehicle headlights and/or personal head lamps.
Outfall sample collection	Elevated Work Areas / Falls	Storm event samples will be collected from storm water outfalls located down manholes, which constitute a fall hazard while open. All manholes will be constantly attended by a field team member or protected by standard railings while the cover is off of the opening.
Driving	Mechanical or Electrical Breakdown	Be sure field manager and project manager are informed of all trips and field activities before driving to the site. Perform operator check before driving (to include; brakes, tires, horn, lights, wipers, defrost, turn signals, mirrors, etc.). Correct any items that are not operating properly.
Driving	Auto Accident	• Drivers must have valid drivers' license • Inspect vehicle prior to departures • Drive defensively • Obey all posted speed limit and directional signs • Obey Oregon/Washington Vehicle Operating Rules and Regulations • Smoking is not allowed in Government vehicles • Walk around vehicle or use ground guide when backing in unfamiliar surroundings • Do not drive if tired • No cell phone use while driving • Reduce speed to accommodate road and traffic conditions. • All vehicles entering the Shipyard must have proper identification issued by the U.S. Navy.
Site setup and sample collection	Vehicle Traffic	Several sampling sites are located in the vicinity of active roads and Shipyard activities that are considered to be areas where vehicular traffic could pose a potential hazard. Some of the sampling sites are located in roadways. The field team manager will work with the Shipyard Public Works to ensure the areas are properly marked. Orange Department of Transportation (DOT) approved traffic cones, barriers, and signage will be placed around the perimeter of the working area in order to direct traffic around the work area as required. All personnel shall don orange safety vests to increase visibility to passing traffic when working in these areas. Personnel shall also use caution and be aware of their surroundings at all times.
Site setup and use of	Physical Injury	In order to prepare at some of the storm flow sampling sites, enclosures must be built and/or customized to house the samplers. This construction will

Hazard Mitigation - Each activity lists specific hazards and mitigation methods		
Activity	**Hazard(s)**	**Hazard Control/Mitigation**
power tools		involve the use of various powered hand tools. During the use of hand tools personnel will wear appropriate work wear, ANSI compliant hard hat and safety goggles. Safe work practices will be used when hand tools are in operation.
Site setup and sample collection	Spider Bite	Spiders are common inhabitants of storm water manholes. The only spiders common in Washington that pose any threat to humans are the black widow spiders and the funnel web spiders. Black widow spiders are not common in Bremerton, WA. The adult female, which is the most dangerous, is usually identified by the famous reddish hourglass-shaped marking on the underside. Generally speaking, these are shy, retiring spiders which bite only reluctantly. Females may be more aggressive when protecting an egg sac. They may be found in areas such as woodpiles, dry crawl spaces, abandoned buildings, rock piles, or bales of hay. When working in such areas or other similar habitats, it is wise to look where you place your hands and to wear gloves and a long-sleeved shirt. Bites should be treated by a physician. The other dangerous spider is the aggressive house spider, one of the funnel web spiders, which have become established across most of the Pacific Northwest. These spiders make a sheet web with a funnel-tube at one end, usually in damp protected spaces such as corners of basements. They wait inside the tube and dash out to bite any prey that becomes entangled in the web. These are large spiders, ranging up to 1-3/4 inches in diameter. They prowl basement or ground floor living spaces at night and may bite intruders with little provocation. If bitten by a spider, wash and disinfect the wound, cover it, and apply ice. Watch for allergic reaction or infection; seek medical attention if a reaction or infection develops.
Site setup and sample collection	Heat or Cold Stress	• Be aware of your own and our co-workers' physical/emotional state, especially in hot or cold conditions. • Know symptoms of thermal stress. If hypothermia is suspected, warm subject up. Recommendations for preventing hypothermia: Wear several layers of loose clothing. Layering provides better insulation and tight clothing reduces blood circulation. Warm blood needs to be circulated to the extremities. When choosing clothing, be aware that some clothing may restrict movement resulting in a hazardous situation. Make sure to protect the ears, face, hands and feet in extremely cold weather. Wear a hat: it will keep your whole body warmer because hats reduce the amount of body heat that escapes from your head). Move into warm locations during work breaks; limit the amount of time spent outside on extremely cold days. Carry cold weather gear, such as extra socks, gloves, hats, jackets, blankets, and a change of clothes in a dry bag. Also bring along a thermos of hot liquid. Include a thermometer in the first aid kit. Avoid touching cold metal surfaces with bare skin. Monitor your own and your co-workers' physical condition. • During warm months if heat stroke becomes an issue remove subject from sun and provide plenty of water for hydration. • Discuss questionable situations with supervisor and/or co-workers.

Hazard Mitigation - Each activity lists specific hazards and mitigation methods		
Activity	**Hazard(s)**	**Hazard Control/Mitigation**
Site Setup	Confined Space Entry	• Remove yourself or others from hazardous areas as appropriate. See following section for entry requirements.

Confined Space Entry

Confined space is defined as a space that is large enough and configured such that an employee can enter and perform assigned work, and:

- has limited or restricted means for entry or exit (e.g., tanks, vessels, silos, storage bins, hoppers, vaults, pipes, and pits are spaces that may have limited means of entry); and
- is not designed for continuous occupancy.

A confined space is considered dangerous for the following reasons:

- Existing ventilation may be insufficient to prevent the accumulation of toxic or volatile gases and vapors that may create an oxygen deficiency or a poisonous or explosive atmosphere. High temperatures and humidity may aggravate conditions.
- Access or egress in case of emergency (e.g., injured or suddenly disabled employee) may be difficult due to the location and/or size of the opening(s).

Field team members consisting of employees from TAI will be operating under their Confined Space Entry Program revision date 04/08/2008 (Appendix A). This confined space entry (CSE) program:

- Identifies all permit-required confined spaces in TAI workplaces and
- Describes TAI procedures for worker safety and health in permit-required confined spaces.

The TAI Confined Space Entry (CSE) program requires the following:

1. Complete 4 hours of OSHA compliant Confined Space Entry Training upon employment and prior to CSE (renewed every 3 years as a matter of company policy and continued safety training).
2. Participate in monthly Safety Refresher coursework or project updates as either is applicable.
3. Review Taylor Associates Confined Space Safety Program Plan upon employment and at a minimum biannually thereafter.
4. Commit to minimizing safety and health hazards by adhering to this CSE program plan.

In addition, Taylor Associates, Inc. will treat all confined spaces as permit-required spaces until they have been evaluated and are documented to be non-permit.

Pre-emergency Planning

This section details the roles and responsibilities for following pre-emergency planning activities.

- The FC performs the applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with the PNNL PM, Navy PM, facility, and Shipyard emergency-service providers as appropriate.
- Review the facility emergency and contingency plans where applicable. The Shipyard maintains a fire department and emergency response unit, but they are not responsible for responding to contractor emergencies. In the event of an emergency, dial 911 and notify the Shipyard that the responding unit will need access to the Shipyard and be able to direct the responders to the accident site.
- Determine what onsite communication equipment is available (e.g., two-way radio, air horn).
- Determine what offsite communication equipment is needed (e.g., nearest telephone, cell phone).
- Confirm emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel. All emergency information for this project, including directions to the nearest hospitals in the project area is included below.
- Review changed site conditions, onsite operations, and personnel availability in relation to emergency response procedures.
- Designate one vehicle as the emergency vehicle; place hospital directions and map inside; keep keys in ignition during field activities.
- Inventory and check site emergency equipment, first aid supplies, and potable water.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, and releases.
- Rehearse the emergency response plan before site activities begin, including driving route to hospital.
- Brief new workers on the emergency response plan.
- The FC will evaluate emergency response actions and initiate appropriate follow-up actions.
- Conduct daily H&S Tailgate Briefing with all field personnel. Discuss updates to EHS, review emergency procedures and contact information, and other pertinent issues.
- All field team members will have quick, reliable access to cell phones.

Emergency Medical Treatment

The procedures listed below may also be applied to non-emergency incidents. Injuries and illnesses must be reported to PNNL PM Jill Brandenberger at 360-670-3241 (mobile). The PM or delegate will then contact the PNNL Single Point of Contact at 509-375-2400. If there is doubt about whether medical treatment is necessary, or if the injured person is reluctant to accept medical treatment, contact the PNNL PM. Follow these general procedures as appropriate:

1. Minor and non-life threatening emergencies will be treated at Harrison Memorial Hospital in Bremerton, WA (Figure 2).
2. Dial 911 for ALL life threatening (or if you are unsure) emergencies. Do not transport the victim!
3. Notify the Shipyard Emergency Point of Contact at **360-476-3333.** They will need to coordinate access and an escort for the responder.
4. The SSC will assume charge during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room.

5. The SSC will contact PNNL PM 360-670-3241 and PNNL PM will report the accident to the PNNL Single Point of Contact at 509-375-2400.
6. The SSC will prevent further injury, initiate first aid, and/or CPR where feasible.
7. Get medical attention immediately.
8. Make certain that the injured person is accompanied to the hospital emergency room.
9. When contacting the medical consultant, state that the situation is a PNNL matter and you are located within the Puget Sound Naval Shipyard. The Shipyard will provide an escort and coordinate access for the responding unit. Give your name and telephone number, the name of the injured person, the extent of the injury or exposure, and the name and location of the medical facility where the injured person was taken.

Contact Information

Name	**Phone Number**
For all EMERGENCIES provide your location as Puget Sound Naval Shipyard, Bremerton, WA	**911 (from Shipyard phone)** **Otherwise: 360-476-3333**
PSNS Emergency Line (call after 911)	**360-476-3333**
TAI SSC	206-794-0095
PNNL PM	360-670-3241
PNNL Single Point of Contact	509-375-2400
PSNS Single Point of Contact	360-476-3333
PSNS Watch Office (advise for sampling)	360-476-7617 (day) 360-476-7601 (off hours) 360-476-3393 (base police)
Bremerton Police (non-emergency)	360-473-5220
PSNS Base Emergency Information	1-866-291-1160 for the latest status.

Maps

The Shipyard maintains a site specific fire department and emergency medical response team and may provide assistance to the contractor during an emergency. However, the Shipyard response units are specifically for their work activities and city/country response units should be contacted in case of emergency. The closest hospital is the Harrison Medical Center, Bremerton, WA. Figure 2 provides a map with point A representing the exit from the Shipyard and Point 2 the Harrison Medical Center. The driving directions from the Shipyard to the hospital are as follows (approximately 10 minutes):

Puget Sound Naval Shipyard 1400 Farragut Avenue Bremerton, WA 98314-6001

1. Head southwest on Farragut Ave 472 ft
2. Take the 1st left to stay on Farragut Ave 0.1 mi
3. Turn left at Barclay St/West St Continue to follow Barclay St 0.4 mi
4. Take the 3rd left to stay on Barclay St 217 ft
5. Turn right at Mahan Ave 0.2 mi
6. Take the 1st left onto Naval Ave 0.1 mi

7. Turn right at Burwell St 0.6 mi
8. Turn left at Warren Ave 1.1 mi
9. Continue onto Warren Ave Bridge 0.5 mi
10. Turn right at Sheridan Rd 0.2 mi
11. Take the 2nd right onto Cherry Ave Destination will be on the left 0.4 mi

Harrison Medical Center 2520 Cherry Avenue Bremerton, WA 98310

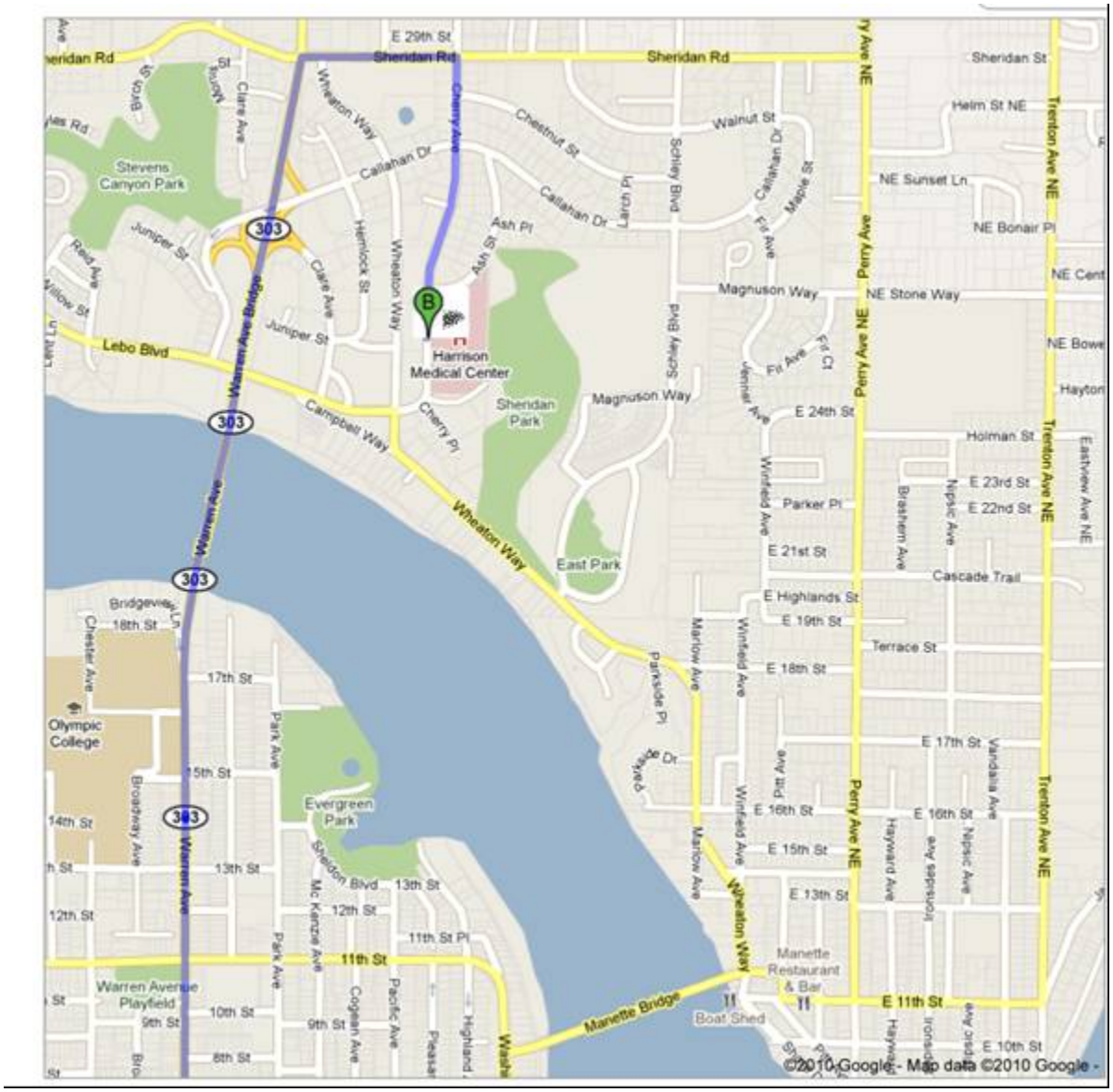

Figure 2. A map of East Bremerton showing the route from Naval Station Bremerton to Harrison Medical Center.

References

Brandenberger J. M., E.A. Crecelius, and R. K. Johnston 2008. Contaminant Mass Balance for Sinclair and Dyes Inlets, Puget Sound, Washington. Prepared for the Puget Sound Naval Shipyard and Intermediate Maintenance Facility Project ENVVEST Bremerton, Washington under Contract DE-AC06-76RLO 1830, Pacific Northwest National Laboratory, Richland, Washington.

Taylor Associates Inc. 2009. Quality Assurance Plan for Non-Dry Dock Stormwater Monitoring Conducted Under the National Pollutant Discharge Elimination System by Puget Sound Naval Shipyard & Intermediate Maintenance Facility. Contract W912DW-06-D-1007, USACE Delivery Order 023, December 2009. Report and Supporting Information http://www.mesodat.org/ENVVEST/Reports/TaylorAssoc_2009_Report/TaylorAssoc_2009_Report.html

US EPA 2008a. Draft Working NPDES Permit for the Puget Sound Naval Shipyard, US EPA Region X, 6 May 2008.

US EPA 2008b. Draft Working NPDES Fact Sheet for Puget Sound Naval Shipyard, US EPA Region X, 6 May 2008.

Signature Sheet

I have read the Hazard Analysis and Safety Plan presented herein and fully understand the material covered. I understand that I am responsible for compliance with the requirements of this HASP and I agree to abide by the same. I also had the opportunity to discuss the information presented in the HASP, and to ask any questions about the information that I want clarified. I understand that this record will become a permanent part of my employee health and safety training file.

Date	Print Name	Signature

Signature Sheet (continued)

I have read the Hazard Analysis and Safety Plan presented herein and fully understand the material covered. I understand that I am responsible for compliance with the requirements of this HASP and I agree to abide by the same. I also had the opportunity to discuss the information presented in the HASP, and to ask any questions about the information that I want clarified. I understand that this record will become a permanent part of my employee health and safety training file.

Date	Print Name	Signature

Appendix A: Taylor Associates, Inc. Confined Space Entry Program

TAYLOR ASSOCIATES, INC.

revised 04/08/2008

CONFINED SPACE ENTRY PROGRAM

Overview

This confined space entry (CSE) program:

- Identifies all permit-required confined spaces in our workplace **and**
- Describes our procedures for worker safety and health in permit-required confined spaces

Employees will participate in developing and implementing the program in the following ways:

- Complete 4 hours of OSHA compliant Confined Space Entry Training upon employment and prior to CSE (renewed every 3 years as a matter of company policy and continued safety training).
- Participate in monthly Safety Refresher coursework or project updates as either is applicable.
- Review Taylor Associates Confined Space Safety Program Plan upon employment and at a minimum biannually thereafter.
- Commit to minimizing safety and health hazards by adhering to this CSE program plan.

Taylor Associates, Inc. will treat all confined spaces as permit-required spaces until they have been evaluated **and** are documented to be nonpermit.

ROLES & RESPONSIBILITIES

The following shows which employees are responsible for the tasks outlined:

Each Confined Space Entry is treated as a separate event. All employees that will be involved either as a Supervisor, Attendant or Entrant for a CSE must have OHSA approved CSE training. CSE teams will work together to identify hazardous conditions and maintain the health and safety of all parties present for CSE.

Responsibility:	**Person assigned this responsibility:**
Evaluate our work locations and determine: • Confined space(s) exist at the worksite. • Permit-required confined space(s) exist at the worksite.	Supervisor, Attendant, and Entrant
Evaluate the confined space(s) to determine whether hazards are present.	Supervisor, Attendant, and Entrant
Evaluate hazards and determine the appropriate entry procedure for the space. **Note:** • Until evaluated and documented otherwise, all confined spaces will be considered permit-required spaces. • Alternate entry procedure may apply when the only hazard remaining in the space is a potential hazardous atmosphere controlled by the use of forced air ventilation.	Supervisor, Attendant, and Entrant
Re-evaluate the space when the use, configuration, or hazards of a confined space change.	Supervisor, Attendant, and Entrant will continually reevaluate space, and note observations on permit documentation for changes in condition.
Monitoring and testing as follows: • Conduct initial monitoring to identify and evaluate any potentially hazardous atmospheres • Complete atmospheric testing in the following order: – Oxygen – Combustible gases – Toxic gases and vapors • Record the data **Confined Space Safety Folder** • Keep up-to-date maintenance log for gas meter calibration: store records at Greenwood Office in **Confined Space Safety Folder**	Supervisor, Attendant, and Entrant
Inform exposed or potentially-exposed employees	Supervisor

of the existence and hazards of confined spaces using the methods described below under "Control Confined Space Entry."	
Provide employees entering confined spaces, or their designated representative, an opportunity to observe pre-entry testing and any subsequent testing. - All test results will be provided to the entrants or their representatives upon request. - The space will be re-evaluated if entrants or their representatives believe that the permit space was inadequately tested.	Supervisor
Make sure that all equipment needed for safe entry into any confined space is available and in proper working order.	Supervisor, Attendant, and Entrant (all field staff should be aware of equipment condition prior to entry.)
Conduct a review using the canceled entry permits to identify and correct any deficiencies in our program.	Suzanne Osborne (company safety officer - SO) or specific project manager with routine reports to the company SO.

IDENTIFY CONFINED SPACES AND HAZARDS

Taylor Associates, Inc accesses confined spaces primarily for installation, maintenance, and demobilization of flow monitoring and autosampling equipment. Clients and their monitoring projects/programs that dictate frequent CSE are identified below.

Port of Seattle

- Comprehensive Stormwater Monitoring Program,
- National Pollution Discharge Elimination System
- SE Pond Treatment Facility
- Shilshole Bay Catch Basin Monitoring
- Seaport Phase I

Seattle Public Utilities

- Madison Valley- CSO Monitoring

- Venema Creek

Port of Tacoma

- Phase I Monitoring

City of Bellevue

- Bellevue Source Control

City of Bainbridge Island

- CoBI Water Quality and Flow Monitoring Program

City of Black Diamond

- Black Diamond I/I Monitoring

Puget Sound Naval Shipyard

- Non-dry dock stormwater monitoring

Confined Spaces and Hazards

CONTROL OF CONFINED SPACE ENTRY

The majority of confined spaces accessed for flow monitoring projects/programs are located on public property and secured from unauthorized access by manhole covers often secured with ½-inch allen bolts.

We use the following method(s) to inform employees and outside parties about the existence and hazards of confined spaces, and prevent unauthorized entry:

- Posting barriers and cones to prevent accidental entry.
- Maintain Supervisor position and awareness to prevent unauthorized entry.

PERMIT ENTRY PROCEDURES

Our entry procedures for permit spaces include the following:

Procedure 001: Job Hazard Analysis
Procedure 002: Traffic Control
Procedure 003: Atmospheric Monitoring
Procedure 004: Lockout/Tagout
Procedure 005: Field Day p.m. Checkout

We will do all of the following when entering CSE:

- Eliminate unsafe conditions before removing entrance covers.

- After removing entrance covers, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space.

- Certify that pre-entry measures have been taken (such as safe removal of the cover and having protection needed to gather pre-entry data), with the date, location of the space, and signature of the person certifying.

- Make the pre-entry certification available to each entrant before entry.

- Before an employee enters the confined space, test the internal atmosphere with a calibrated, direct-reading instrument for all of the following, in this order:
  1. Oxygen content
  2. Flammable gases and vapors
  3. Potential toxic air contaminants.
- Provide entrants, or their authorized representatives, with an opportunity to observe the pre-entry and periodic testing.

  - Make sure the atmosphere within the space is not hazardous when entrants are present.
- Use continuous forced air ventilation, as follows:

  - Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.

  - Direct forced air ventilation toward the immediate areas where employees are, or will be, and continue ventilation until all employees have left the space.

  - Provide the air supply from a clean source and make sure it does not increase hazards in the space.
- Test the atmosphere within the space as needed to make sure hazards do not accumulate.
- If a hazardous atmosphere is detected during entry, we will do all of the following:
  - Evacuate employees from the space immediately.
  - Evaluate the space to determine how the hazardous atmosphere developed.
  - Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
  - Verify the space is safe for entry before continuing the entry operation.

- The written documentation is available to each employee entering the space or to that employee's representative at the confined space bulletin board.

CLASSIFY A CONFINED SPACE AS A NONPERMIT SPACE

- A space will be classified nonpermit only for as long as all the hazards remain eliminated.

- If someone must enter the space to eliminate of any of the hazards, we will follow all the requirements listed under the permit entry procedures.

- Documentation that no permit-required confined space hazards exist will include the following:

  - The date, location, and signature of the person making the determination.
  - How we determined that no permit-required confined space hazards exist.
  - Documentation will be available to entrants or their authorized representatives through oral communication.

AT THIS POINT IN TIME, ALL CONFINED SPACES ACCESSED BY TAYLOR ASSOCIATES, INC. ARE DEFINED AS PERMIT REQUIRED (If in the future non-permit spaces are identified the following table and form will be utilized.)

The following spaces can be classified as non-permit spaces by following the listed methods of hazard elimination:

Date	***Location of Confined Space***	***Hazards***	**Method of Hazard Elimination**
(Input your specific information)			

NON-PERMIT SPACE DOCUMENTATION FORM

Non-permit confined space name or number	*(Insert your specific information here)*
Location	
Documentation	
Date	
Signature	

TRAINING

- We will provide permit space training to employees at the following times:

    - When hired, so new employees are aware of our confined spaces
    - Before they are assigned permit space entry duties
    - When their assigned duties change
      and
    - When there is a change in a space that creates hazards for which they have not been trained.

Rescue and Emergency Services

We have developed the following rescue and emergency action plan:

ENTRY RESCUE PLANS

The Entry Rescue Plan for Taylor Associates, Inc is listed below:

The following information should be included in the field notebook for all projects that include CSE in their Job Hazard Analysis:

Name of rescue service: _____

Telephone number: _____

Location: _____

Approximate response time: _____

Name of emergency medical service: _____

Telephone number: _____

Location: _____

Approximate response time: _____

EMERGENCY ENTRY RESCU FOR CONFINED SPACES:

1) CONTACT all emergency numbers required.
2) CONTACT senior project manager.
3) CONTACT Bill Taylor.
4) COMPLETE AN INCIDENT REPORT AND SUBMIT TO YOUR SAFETY OFFICER!

PERMIT-REQUIRED CONFINED SPACE PROGRAM REVIEW

At least every 12 months we will conduct a review using canceled entry permits to identify any deficiencies in our program. We will conduct a review immediately if there is reason to believe that the program does not adequately protect our employees, such as the following situations:

- Unauthorized entry of a permit space
- Discovery of a hazard not covered by the permit
- Detection of a condition prohibited by the permit
- An injury or near-miss during entry
- Change in the use or configuration of the space

or

- Employee complaints of permit space program ineffectiveness.

Corrective measures will be documented by revising the program. Employees will participate in revising the program, and will be trained on any changes.

If no permit space entry operations are conducted during the year, no review is needed.

Confined Space/Hazardous Area Entry Permit		
Job Location/Site Description:	Date:	
	Permit Expires At	
	Date:	Time:
Reason for Entry:		
Type of Entry:		
Entry Supervisor:		
Standby Person		

SPECIFIC HAZARDS THAT MAY BE ENCOUNTERED:

ATMOSPHERIC ☐ PHYSICAL ☐ OTHER (explain) ☐ _____

AUTHORIZED ENTRANTS	TIME IN	TIME OUT
1.		
2.		
3.		
Attendant:	N/A	N/A

HAZARD CONTROL:

Physical Hazard Requirements	Yes	No	Notes
Fall Protection Equipment			
Lighting (Intrinsically Safe)			
Hearing Protection			
Secure Area and Monitor			
Personal Protective Equipment			
Hard Hats			
Onsite Rescue Equipment Required	**Yes**	**No**	**Notes**
Fire Extinguisher			
Respirator / SCBA			
Communications Devices			
Retrieval Equipment			
Atmospheric Equipment Required	**Yes**	**No**	**Notes**
Gas/O_2/LEL Detector			
Blower/Ventilator			

EMERGENCY RESCUE INFORMATION: In the event of a life threatening emergency, dial 911. If the emergency occurs onsite where outside help is not readily available refer to HSP.

I certify that I have evaluated the situation and the assigned personnel and the procedures to be followed are in compliance with Taylor Associates, Inc. Confined Space Program.

Signed_____. Print Name_____.

PLEASE KEEP COMPLETED PERMIT ON FILE.

Confined Space/Hazardous Area Entry Permit, Continued

Atmospheric Requirements Continued					
Acceptable Limits for Entry					
Oxygen (O_2): 19.5 – 23.5 %					
Combustible Gas – Lower Explosion Limit (LEL): 10% Max					
Hydrogen Sulfide (H_2S) : 10 PPM Max					
Carbon Monoxide (CO): 35 PPM Max					
Other (explain):					
Time (24-hr)	**O_2**	**LEL**	**H_2S**	**CO**	**Other_____**
Pre-Entry					
Entry					

Gas Detector Information		
Unit #:	Operational	
Last Calibrated:	Batt. Check	

NOTES:

Tailgate Safety Meeting Form

Daily Health and Safety Tailgate Meeting Form	
Site Health and Safety Officer Conducting Meeting :	
Date :	**Weather:**
Personnel In Attendance :	
Meeting Minutes (Brief description of topics, special concerns and sites discussed):	
Signature of Attendees' :	
"THE BEST JOB IS ONE DONE SAFELY ! "	

Confined Space Safety Certificates

Certificate of Completion

This is to certify that

Brad D. Kwasnowski

has satisfactorily completed
4 hours of training in

Confined Space Safety

to comply with the training requirements of
WAC 296-809 and OSHA 29 CFR 1910.146.

Certificate Number 10303401

Instructor

ARGUS PACIFIC TRAINING•CONSULTING

Dec 16, 2008
Date(s) of Training

Argus Pacific, Inc. • 1900 W Nickerson • Suite 315 • Seattle, Washington • 98119 • (206) 285.3373 • fax (206) 285.3927

Certificate of Completion

This is to certify that

Dave Metallo

has satisfactorily completed
4 hours of training in

Confined Space Safety

to comply with the training requirements of
WAC 296-809 and OSHA 29 CFR 1910.146.

Certificate Number 1029779

Instructor

ARGUS PACIFIC TRAINING•CONSULTING

Jun 16, 2008
Date(s) of Training

Argus Pacific, Inc. • 1900 W Nickerson • Suite 315 • Seattle, Washington • 98119 • (206) 285.3373 • fax (206) 285.3927

Certificate of Completion

This is to certify that

Bryan Berkompas

has satisfactorily completed
4 hours of training in

Confined Space Safety

to comply with the training requirements of
WAC 296-809 and OSHA 29 CFR 1910.146.

Certificate Number 1029775

Instructor

ARGUS PACIFIC TRAINING•CONSULTING

Jun 16, 2008
Date(s) of Training

Argus Pacific, Inc. • 1900 W Nickerson • Suite 315 • Seattle, Washington • 98119 • (206) 285.3373 • fax (206) 285.3927

Certificate of Completion

This is to certify that

Carla B. Milesi

has satisfactorily completed
4 hours of training in

Confined Space Safety

to comply with the training requirements of
WAC 296-809 and OSHA 29 CFR 1910.146.

Certificate Number 1029780

Instructor

ARGUS PACIFIC TRAINING•CONSULTING

Jun 16, 2008
Date(s) of Training

Argus Pacific, Inc. • 1900 W Nickerson • Suite 315 • Seattle, Washington • 98119 • (206) 285.3373 • fax (206) 285.3927

Certificate of Completion

This is to certify that

Jon W. Berg

has satisfactorily completed
4 hours of training in

Confined Space Safety

to comply with the training requirements of
WAC 296-809 and OSHA 29 CFR 1910.146.

Certificate Number 1023231

Instructor

ARGUS PACIFIC
SAFETY • TRAINING • INDUSTRIAL HYGIENE

Aug 15, 2006
Date(s) of Training

Argus Pacific, Inc. • 1900 W Nickerson • Suite 315 • Seattle, Washington • 98119 • (206) 285.3373 • fax (206) 285.3927

1900 W. Nickerson, Suite 315
Seattle, WA 98119
(206) 285-3373

ARGUS PACIFIC
TRAINING • CONSULTING

This certifies that
Daniel D. O'Brien
has satisfactorily completed
Confined Space Entry

in compliance with the training requirements of
WAC 296-809 and OSHA 29 CFR 1910.146

Instructor

Cert. Num: 10303647
Class Date: Jan 26, 2009

APPENDIX B:

PROJECT PERSONNEL CONTACT LIST

NON-DRY DOCK STORMWATER MONITORING PROJECT
2012 / 2013
PROJECT PERSONNEL CONTACT IST

NAVY :

Lesley B Doyle
Project Manager:
Puget Sound Naval Shipyard & IMF c/106.32
Water, Special Projects Supv.
Phone: 360 476-9678
Email: Lesley.doyle@navy.mil

Christine Gebhart
NPDES Program Manager
C/106.32
Office: 360- 476-9676
Email: christine.gebhart@navy.mil

Dr. Robert K. Johnston
Technical Coordinator:
Marine Environmental Support Office – NW
Space and Naval Warfare Systems Center, c/o
Code 106.32
Puget Sound Naval Shipyard
Office: 360-782-0113
Cell: 360-961-9072
Email: johnston@spawar.navy.mil &
robert.k.johnston@navy.mil

Eric Mollerstuen
Stormwater Program Support
C/106.32
Office: 360-476-4594
cell: 360-440-3524
eric.mollerstuen@navy.mil

Duy Pham
Water, Sanitary Sewer
C/106.32
Office: 360-476-0122
cell: 360-781-1284
CIA cell: 206-383-9623
duy.t.pham@navy.mil

C106.32 Branch – Stormwater Cell Phone
360-340-5279

PSNS Emergency
911 (ONLY on Shipyard phone)
(360) 476-3333

Mail to all (copy and paste into message)
lesley.doyle@navy.mil; christine.gebhart@navy.mil; johnston@spawar.navy.mil;
robert.k.johnston@navy.mil; eric.mollerstuen@navy.mil; duy.t.pham@navy.mil

NON-DRY DOCK STORMWATER MONITORING PROJECT
2012 / 2013
PROJECT PERSONNEL CONTACT IST
Continued

Pacific Northwest National Laboratories (PNNL):

Jill Brandenberger
Project Manager, Project Chemist, Field QC
Office (360) 681-4564
Cell (360) 670-3241
Jill.Brandenberger@pnnl.gov

Cardno TEC:

Dave Metallo, LHG
TEC/Taylor Project Manager, Lead Storm Controller, Field Operations Lead, Field QC
Office (206) 267-1400 x8210
Cell (206) 794-0095
David.Metallo@Cardnotec.com

Curtis Nickerson
TEC/Taylor Senior Technical Advisor
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Cell (206) 755-9956
Curtis.Nickerson@cardnotec.com

Bryan Berkompas
TEC/Taylor Telemetry Systems, Alt. Storm Controller
Office (206) 267-1400 x8217
Cell (206) 718-7446
Bryan.Berkompas@cardnotec.com

Brian Rupert
TEC/Taylor Field / Task Manager
Office (206) 267-1400 x8213
Cell (360) 620-7254
Brian.Rupert@Cardnotec.com

Carla Milesi
TEC/Taylor Alt. Storm Controller
Office (206) 267-1400 x8219
Cell (206) 579-7163
Carla.Milesi@cardnotec.com

TEC/Taylor Field Staff:
Bruce Beckwith– Cell (360) 990-5672
Bruce.beckwith@cardnotec.com

Jon Berg – Cell (206) 718-7849
Jon.Berg@cardnotec.com

Ian Sahlberg – Cell (425) 328-8180
Ian.Sahlberg@cardnotec.com

Cardno TEC Office Lines & Address

Main (206) 267-1400
Fax (206) 267-1401
2825 Eastlake Ave East, #300
Seattle, WA 98102

APPENDIX D:

TELEMETRY PERMISSION FORMS

4231

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY OR ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MAKE / MODEL #	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE**
Campbell Scientific	27470	Pakbus

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) PREMISES ONLY

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

DATA SENSITIVITY

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4232

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY OR ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG & MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE (i.e. Windows 2000, Linux, MAC)**
Campbell Scientific	35264	Pakbus

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) BREMERTON SITE

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

DATA SENSITIVITY

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE | **DATE**

I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above.
Code 1234, (360) 627-2405, Fax (360) 476-2049 [signature] 12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4233

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY OR ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MAKE/MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE** (Windows 2000, MAC, etc.)
Campbell Scientific	35265	Pakbus

AUTHORITY TO OPERATE ON HIGH SOUND NAVY SHIPYARD AND INTERMEDIATE MAINTENANCE ACTIVITY (SNS & IMF) BREMERTON SITE

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

REQUESTOR SIGNATURE

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE/SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
C/106.32	PROJECT: NPDES Permit	LOCATION: CIA	NAME: (REQUIRED) Victoria Whitney	PHONE: (REQUIRED) 360-476-6487

PSNS & IMF APPROVAL TO OPERATE	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4234

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY OR ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG & MODEL ID	**SERIAL NUMBER**	**TYPE OF BOOTING SYSTEM TYPE (Windows 2000, Linux, etc.)**
Campbell Scientific	35266	Pakbus

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) PREMISES

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

SENSITIVITY OF INFORMATION STORED ON SYSTEM

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE

	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4235

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST 5239.2

ESCORT/COMPANY/ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates,Inc./TEC Inc.	January 1, 2013	December 31, 2013
MAKE/MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE (Windows2000, XP, MAC, etc.)**
Campbell Scientific	42496	Pakbus

AUTHORITY TO OPERATE ON PSNS & IMF SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF), BREMERTON, WA

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: November 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

DATA SENSITIVITY

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM BUILDING/AREA		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev 8-07)

4234

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY/CONTRACTOR NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MAKE/MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE (Windows 2000, Unix, MAC)**
Campbell Scientific	42497	Pakbus

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) BREMERTON SITE

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

DATA SENSITIVITY

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4237

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY/ORGANIZATION NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG/MODEL NO.	**SERIAL NUMBER**	**OPERATING SYSTEM/VERSION (Windows 2000, Linux, Mac, etc.)**
Campbell Scientific Raven XVT	1121627529	SC932 DCE Interface

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) PREMISES

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

DATA CLASSIFICATION

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS. This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 -- 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING/AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE | **DATE**

I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above.
Code 1234, (360) 627-2405, Fax (360) 476-2049 — 12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4238

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.1

COMPANY/ORGANIZATION NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG & MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE (e.g., Windows 2000, Linux, MAC OS X)**
Campbell Scientific Raven XVT	1121627636	SC932 DCE Interface

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF), BREMERTON, WA

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2013 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

SENSITIVITY LEVEL OF INFORMATION STORED ON SYSTEM

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE/SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE

I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above.
Code 1234, (360) 627-2405, Fax (360) 476-2049 — DATE: 12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4239

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY/ORGANIZATION NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG & MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE & VERSION (MAC OS X 10.4 Tiger, MAC OS X 10.5 Leopard)**
Campbell Scientific Raven XVT	1033519944	SC932 DCE Interface

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) ARE HEREBY GRANTED ONSITE

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

I understand that while at PSNS & IMF site I will not connect to the PSNS & IMF Local Area Network. I will ensure that daily virus scan of memory and all storage media is performed before conducting any use of this system and that all removable media will be identified with appropriate sensitivity labels. A copy of this Authority to Operate shall accompany the system at all times while at PSNS & IMF.

DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

DATA SENSITIVITY

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 -- 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

NOTIFICATION	PSNS & IMF APPROVAL TO OPERATE	DATE
	I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405. Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4240

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY/ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG & MODEL ID	**SERIAL NUMBER**	**OPERATING SYSTEM TYPE** (Windows 2000, Unix, MAC, ...)
Campbell Scientific Raven XVT	1033520124	SC932 DCE Interface

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY PSNS & IMF MEMBER REVERVATION SITES

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

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DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

ALL USERS HAVE SECURITY CLEARANCE EQUAL TO OR HIGHER THAN THE HIGHEST LEVEL OF INFORMATION ON THE SYSTEM AND A NEED-TO-KNOW FOR ALL OF THE INFORMATION.

REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

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OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE/SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION/OF SYSTEM (BUILDING OR AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4241

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST P5239.2

COMPANY/ACTIVITY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MFG & MODEL NO.	**SERVICE TYPE**	**OPERATING SYSTEM TYPE & VERSION**
Campbell Scientific Raven XVT	0929381962	SC932 DCE Interface

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) REMOTE LOCATIONS

I certify that this system is owned by a company under contract with the U.S. Government or is owned by the U.S. Government. I understand that **personally owned** computers and peripherals **are not authorized** at PSNS & IMF and are not covered by this Authority to Operate.

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DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

SENSITIVITY OF INFORMATION

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
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☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE BLUETOOTH CAPABILITY?
☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

COMMENTS: This is an extension to the current telemetry request of November 1, 2011. Modems will interface via Verizon cellular network to transfer data to Taylor Associates for QC, analyses, and deliverables.

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REQUESTOR'S FAX NUMBER: (206) 267 - 1401

SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

WHEN APPROVED, A COPY OF THIS FORM SHALL ACCOMPANY THE EQUIPMENT AT ALL TIMES WHILE AT PSNS & IMF.

OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING OR AREA)		PSNS & IMF POC OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE	DATE
I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above. Code 1234, (360) 627-2405, Fax (360) 476-2049	12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

4242

AIS SECURITY SURVEY FOR VISITOR COMPUTER EQUIPMENT

Ref: NAVSHIPYDPUGETINST PS5239.2

COMPANY OR AGENCY NAME	ARRIVAL DATE	DEPARTURE DATE
Taylor Associates, Inc/TEC Inc.	January 1, 2013	December 31, 2013
MAKE/MODEL/TYPE	**SERIAL NUMBER**	**OPERATING SYSTEM AND VERSION/EDITION**
Campbell Scientific Raven XVT	1033520314	SC932 DCE Interface

AUTHORITY TO OPERATE ON PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF) RESTRICTIONS

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DATE: December 7, 2012 SIGNATURE: David C. Metallo

PHONE NUMBER: (206) 267-1400 PRINTED NAME: David C. Metallo

SYSTEM SENSITIVITY

INDICATE THE SENSITIVITY LEVEL OF THE INFORMATION STORED ON THE SYSTEM BY PERCENTAGE (MUST TOTAL 100%):

LEVEL	PERCENT
COMPANY (NON-NAVY DATA)	____%
UNCLASSIFIED	____%
SENSITIVE UNCLASSIFIED	100 %
☐ FOUO	____%
☐ PRIVACY ACT	____%
☐ NNPI/NOFORN	____%
CONFIDENTIAL	____%
SECRET	____%

YES	NO	(IF YES, EXPLAIN IN COMMENTS BLOCK, BELOW.)
☑	☐	WILL THE MODEM BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE A WIRELESS CARD?
☐	☑	WILL THE WIRELESS CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
☐	☑	DOES THE LAPTOP HAVE AN ETHERNET CARD?
☐	☑	WILL THE ETHERNET CARD BE USED TO CONNECT TO ANY NETWORK? IF YES, EXPLAIN BELOW (COMMENTS).
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☐	☑	IS THIS AN NMCI-NNPI ASSET (UNDER THE NNPI COI)?

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SIGNATURE OF PERSON VALIDATING SECURITY CLEARANCE: Victoria Whitney

PHONE NUMBER: 360-476-6487 PRINTED NAME: Victoria Whitney

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OWNING ORGANIZATION ADDRESS	OWNING ORGANIZATION POINT OF CONTACT	OWNING ORGANIZATION TELEPHONE NUMBER
Taylor Associates, Inc/TEC Inc.	David Metallo	206-794-0095

PSNS & IMF CODE/SHOP SUPPORTED	PSNS & IMF PROJECT NAME AND LOCATION OF SYSTEM (BUILDING/AREA)		PSNS & IMF LOCAL POINT OF CONTACT	
	PROJECT:	LOCATION:	NAME: (REQUIRED)	PHONE: (REQUIRED)
C/106.32	NPDES Permit	CIA	Victoria Whitney	360-476-6487

PSNS & IMF APPROVAL TO OPERATE

I hereby grant authority to operate this system on PSNS & IMF during the period specified and under the conditions specified above.
Code 1234, (360) 627-2405, Fax (360) 476-2049 — William J. Humbert — DATE: 12/11/12

PSNS&IMF 5239/49 (Rev. 8-07)

APPENDIX H: _
TELEMETRY SYSTEMS WIRING DIAGRAMS

Cardno TEC
Shaping the Future

UPDATED 11/14/2012

WIRING INSTRUCTIONS for Stations using the INW CT2X Sonde

INW CT2X-measures pressure, temperature, and conductivity
SDI-12 address is 0

White	12V
Brown	C1
Clear, Blue	G

CS450- pressure transducer- **<u>installed in water quality vault only</u>**
SDI-12 address is 1

Red	12V
White	C1
Black, Clear, Blue, Yellow	G

ISCO 674 Rain Gauge

Pin A (Green)	P1
Pin D (Red)	G

Raven XT Modem
Connect Null Modem Cable (1ft) to RS232

Red	SW-12V
Black	G

ISCO 6700 Sampler to Flowmeter

Pin A (Red)	H on VDIV10.1 (7H)
Pin B (White)	G
Pin C (Green)	C8
Pin E (Yellow)	C7
Pin F (Blue)	C6

ISCO 6700 Sampler Download

Pins B& C (Yellow)	G
Pin D (Red)	C4 (RX)
Pin E (Orange)	C3 (TX)

12V Power

Pin A (White)	G on power plug
Pin B (Red)	12V on power plug

INW 5-Pin Bulkhead Connector to Wires on the INW Transducer Cable:

Pin1 – Brown 12V+ to White
Pin2 – White D- to Purple
Pin3 – Blue D+ to Yellow
Pin4 – Black SDI12 out to Brown
Pin5 – Grey Ground to Clear/Blue

APPENDIX I:

2012-13 FIELD FORMS

PSNS NDDSW Monitoring Project Storm Control Work Sheet *Sht Rev. 121412* Sheet 1 of _____

Date:				**Sampling Support Personnel:**	
STE#		**Antecedent Dry Cond. Met ?**		**Tidal Info:**	
Storm Controller:				**Grab sampling Info.**	
Pre-Storm / Weather Details:					

Telemetry Measurements:	**DATE/TIME (24HR)**												
STATION:													
PSNS015 Rain[1]													
PSNS015 Level													
PSNS015 Cond.													
Smpl Marker													
PSNS084.1 Rain													
PSNS084.1 Level													
PSNS084.1 Cond.													
Smpl Marker													
PSNS115.1 Rain													
PSNS115.1 Level													
PSNS115.1 Cond.													
Smpl Marker													
PSNS053 Rain													
PSNS053 Level													
PSNS053 Cond.													
Smpl Marker													
PSNS126 Rain													
PSNS126 Level													
PSNS126 Cond.													
Smpl Marker													
PSNS PB01 Rain													
PSNS PB01 Level													
PSNS PB01 Cond.													
Smpl Marker													

[1]Rain dephs are reported as 1-hr / 24-hr totals

yellow highlight indicates station actively sampling

PSNS NDDSW Monitoring Project Storm Control Work Sheet, Continued *Sht Rev. 121412* Sheet 2 of ___

Date:				**Sampling Support Personnel:**									
STE #		**Storm Controller:**		**Strm Evnt Start / Stp**									
Enabling Information:													
Sample Staion:													
Rain enable (in/hr)													
Level Enable (ft)													
Cond. (µS/cm)													
Repeat. Cond Set ?													
Pacing Rate (min)													
Sampler Batt Vdc													
Pre-event Smpl Mrk Value													
Date													
Time													
Comp Dup ? / where:							**Grab Dup ? / where:**						

EVENT NOTES:

PSNS NPDES Non-Dry Dock Monitoring and Support **Telemetry, 24-1L bottle set-up** **Cardno TEC**

ver.113012

Station:	**MH/CB#:**	**Loc. Descrip.**

Page: 1 of___

pages per station

Section 1. Station Reset and Inspection			
Personnel:	Weather:	Arrival Date/Time:	
Carry-over maintenance to do prior to set-up:			done?
Sampler Battery Voltage		Changed? **Y N**	New voltage
Modem Battery Voltage		Changed? **Y N**	New voltage
Sample Tubing & Strainer OK?		**Sampler Info.**	
Transducer & Telemetry System Info.		Time Display OK? (Yes/No)	
Trands. Cable OK?		Internal Sampler Tubing OK?	
Trands. Desiccant OK (Yes/No)		Tubing Replaced? (Yes/No)	
Telem. Box Desiccant OK (Yes/No)		Normal Smpler Program or Dup. ?	
Modem Status		Bottles Loaded ?	
Rain Gauge Maint.: *Level/ed*_____ *Mount OK*_____*Wiring*_____		Lid Status?	
*Funnel/Throat Clean*_____ *Buckets clean/ed*_____*Tips During Maint.*_____		Backflushed with DI?	
Notes (including channel condition):		Suction line & quick connect attached?	
		Smplr Status (on/off) / last screen..	

Section 2. Storm Setup and Inspection			
Personnel:	Weather:	Arrival Date/Time:	
Sampler Battery Voltage		Changed? **Y N**	New voltage
Modem Battery Voltage		Changed? **Y N**	New voltage
Sample Tubing & Strainer OK?		**Sampler Setup**	
Transducer & Multi-meter Setup		Time/Date Display OK? (Yes/No)	
Transducer Cable OK?		Aliquot Vol. Cal.'ed (Y/N & vol.)	
Multi-meter Cable OK		Program Reviewed (Yes/No), Dup ?	
Recorded Level (FT)		Lids off bottles?	
Measured Level (FT)		Diagnostics/Distrubutor arm check?	
Offset Diff (FT)		Backflush with DI?	
Level Adjusted ?		Storm Reset (1, enter) Completed	
Cond. Sonde Type (INW-CT2X)		Last screen…	
Cond. Sonde Cal. Info. : Recorded Val. =	Meas. Val. =	Diff. =	(>10% adj. offset); Offset = New Rec Val =
Notes: (e.g. enabling values, cond cal. meter make/model/ser#, etc.)			

Section 3. Grab Sample Collection				
Personnel:	Weather:	Arrival Date/Time:		
On Composite... (Bottle #/ Aliq #)		Conductivity Reading (µS/cm):		
Grab Parameters Collected		Salinity Reading (PPT):		
Grab Sample ID		Temp. Reading (°C):		
Grab Date/Time		Turbidity Reading (NTU)		
Grab Dup ID		Equipment running correctly?		
Grab Dup Date/Time		Sampler Battery Voltage (Changed?):		
Sample Observations (notify storm controller if sample turbidity, odor, color, foam, or sheen look out of the ordinary): which?:				
Storm Contoller notified (Y or N/A)?:		Grab MS/MSD Collected ? Y / N	Ice OK?	
Notes: (what meter was used for site readings, etc.)				

Station:	continued from previous page	Page:___of___

Section 4. Post-Storm Sample Collection (for grab, comp or both)			
Personnel:	Weather:	Arrival Date/Time:	
Sampler Battery Voltage		Changed? **Y** **N**	New voltage
Telemtery Battery Voltage		Changed? **Y** **N**	New voltage
Additional Grabs (IDs, date/time)			
Additional Dup Grab (IDs, date/time)			
Composite Begin Time (date/time)		Sampler Report Downloaded ?	
Last Aliquot Taken (date/time, bott #, aliq #)			
Total Composite Sample Volume Collected			
Aliquots missed/NLD (date/time/bott #/aliq #)			
Channel Condition / Observations (oil/sheen, floatables, turbidity, suspended solids, discoloration, odor…)?			
Storm Contoller notified (Y or N/A)?:	Which parameter?:		
Notes:			
Maintenance Needed:			

Section 5. Compositing Scheme and QC Sampling			
Personnel:		Date/Time:	
Conductivity & Turbidity Meter/s Info.(Manuf., Model, Serial#, Cal.info.)			
Conductivity & Turbidity Testing (List ind. smplr bottle; cond. reading in µS/cm; turb. reading in NTU; will ind. smpl be included in comp smpl Y/N):			
Brief Description of Compositing Scheme: (include what bottles, based on bench-top screening above, where used for the overall composite sample)			
Overall Composite Info. (include conductivity and turbidity measurements, volume and requested analysis)			
Composite Sample ID & Time:			
Field Blank Collected? (date/time)			
Blank ID:			
Duplicate comp sample? Yes/No			
Duplicate sample ID			

NOTES:

Cardno TEC
Shaping the Future

PSNS Non-Dry Dock Stormwater Monitoring Project
Sediment Grab Sample Collection Field Sheet

Rev011713

Personnel:	**Date/Time:**
Weather	

Station ID:	
Manhole/CB #:	
Location Description:	
Sampling Methodology:	
Sampling Equipment Used:	
Decon'ed per PWP / PSNS Sed QAPP ?:	
Trip Blanks ?:	
Sediment Grab Sample ID/s:	
Sample Time:	**Bottles labeled?:**
Parameters for Testing:	
Sediment Present? Approx depth?	
Water Present? Approx depth?	
Water flowing? Stagnant?	
Sed. color: brown, black, grey, yellow, red, mottled	**Sed. odor:** petroleum, pungent, sewage, earthy, salty
Sed. sheen: none, some, lots	**Sed. consistency:** gravelly, sandy, silty, clayey, organic
Est. % of sample removed (particles ≥ 2 cm):	
Notes:	
Sketch:	

SAMPLE CHAIN OF CUSTODY FORM

Date:

Page: _____ of _____

Project No.: N4523A10MP00034 Amend.2

Project: PSNSNon-dry Dock SW 2012-13

Battelle
Marine Sciences Laboratory
1529 West Sequim Bay Road
Laboratory: Battelle MSL
Attention: Jill Brandenberger
Phone: (360) 681-4564

				Analyze parameters per QAP/FSP														
Sample Label	**Station ID**	**Collection Date/Time**	**Matrix**	Hardness	TOC	DOC	TSS	TME/DME	TPH	Turbidity					No. containers	**Sample Type (Grab vs. Comp)**	**Storm#**	**Notes / Comp. Cond. (µS/cm) and Turb. (NTU) Readings**

Relinquished by: _____

Signature Date Time

_____

Printed Name Company

Received by: _____

Signature

_____

Printed Name

Total # of Containers:

Shipment Method:

Sample Disposition:

Relinquished by: _____

Signature Date Time

_____

Printed Name Company

Received by: _____

Signature

_____

Printed Name

Distribution:
1) PNNL
2) CAS
3) TAI

PSNS NDDSW Monitoring Stations
Field Tasks - Daily Notes
Station Maintenance Tasks 2012-13
Date:

Weather:	
Personnel:	
Arrival:	**Departure:**

STATION ID:	TASKS / NOTES

Station Maintenance Tasks:	015	053	PB01	084.1	115.1	126
Batteries (logger / sampler)						
Loggernet connection (modem / datalogger)						
Rain gauge inspection / maintenance (cleaning, leveling, other)						
CT2X Transducer Maint. (level, conductivity)						
Tubing connections						
Wiring connections						
Enclosure housekeeping						
Cable ramps						
Manhole lids / access						
Vault interior (cables/tubing secure, sensors and sampler intake secure, banding in-place, debris-free)						
Other:						
Other:						

General Notes:

PSNS NDDSW Monitoring Stations
Field Tasks - Daily Notes
Station Setup / Demob Tasks 2012-13
Date:

Weather:	
Personnel:	
Arrival:	**Departure:**

Main Purpose of Visit:	

STATION ID:	**TASKS / NOTES**

Station Setup / Demob Tasks: (note either completed or "To-Do")	**015**	**053**	**PB01**	**084.1**	**115.1**	**126**

General Notes:

PSNS Stormwater Monitoring Station Site Visit Log

Station ____________________

Date	Staff	check sampler status	storm set up	storm stand down	sampler power check - plugged in ?	sampler desiccant OK? Y/N	sampler desiccant replaced	pump head tubing replaced	sampler aliquot volume calibrated	sample inlet tubing connected	sample/s collected	Sampler Data Downloaded	transd. level checked / calibrated	conductivity val. checked / cal.'ed	transd. desicant replaced	equipment cleaned	housing interior cleaned	equipment changed/ removed	site reset completed	telemetry box powered checked/cycled	telemetry box desiccant replaced	telemetry comm. / signal checked	datalogger wiring harness insp'ed	other (note below)
Notes:																								
Notes:																								
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Cardno TEC
Shaping the Future

Rain Gauge Inspection, Maintenance and Calibration Field Sheet

Personnel: _____ **Weather:** _____ **Date/Time:** _____

Inspection and Maintenance		**Notes:**
Rain Gauge Level? (Y or N)		
If N, was it fixed?		
Is funnel/screen clean? (Y or N)		
If N, was it fixed?		
Tipping bucket axel clean? (Y or N)		
Axel cleaned with compressed air?		
Tipping buckets cleaned (Y or N)		
Tipping bucket moving freely? (Y or N)		
Number of Tips caused by maintenance? (**Maintenance Tips**)		

Calibration Check	**Calibration Runs**			
	#1	**#2**	**#3**	**Total**
Method Used ("P"pipette or "FCU" field cal unit)				
Rain Last 6-hr (inches) Prior to Event Start (recorded on datalogger)				
Calibration Event Start Time				
Calibration Event End Time				
[1]Total Volume Delivered to Rain Gauge (milliliters)				
[1]Number of Calculated Tips (ml's / 7.9828) (round to nearest 0.1)				
(A) Calculated Rainfall Depth (nearest 0.01") = # of calculated tips / 100				
(B) Recorded Rainfall Amount (nrst 0.01") = 6-hr rainfall **post** calibration - 6hr rainfall **pre**-calibration				
Difference b/w Calculated **(A)** and Recorded Rainfall **(B)** (A-B round to nearest 0.01")				
Percent Difference (=(|A-B|/A)*100)				
[2]Was Percent Difference ≤ 2% ? (Y or N) - if Y for Run #1 then stop, if N for Run #1 then complete Runs 2 and 3				

[1] Refer to SOP for explicit use of Field Calibration Equipment

[2]IF THE COMBINED TOTAL OF ALL THREE RUNS IS STILL OUTSIDE OF 2% VARIABILITY ALLOWED FOR CALIBRATION CONTACT PROJECT MANAGER IMMEDIATELY

Comments/Concerns:

Puget Sound Naval Shipyard Confined Space/Hazardous Area Entry Permit		
Job Location/Site Description:	Date:	
	Permit Expires At	
	Date:	Time:
Reason for Entry:		
Type of Entry:		
Entry Supervisor:		
Standby Person (if present):		

SPECIFIC HAZARDS THAT MAY BE ENCOUNTERED:

ATMOSPHERIC ☐ PHYSICAL ☐ OTHER (explain) ☐ _____

AUTHORIZED ENTRANTS	TIME IN	TIME OUT
1.		
2.		
3.		
Attendant:	N/A	N/A

HAZARD CONTROL:

Physical Hazard Requirements	Yes	No	Notes
Fall Protection Equipment			
Lighting (Intrinsically Safe)			
Hearing Protection			
Secure Area and Monitor			
Personal Protective Equipment			
Hard Hats			
Onsite Rescue Equipment Required	**Yes**	**No**	**Notes**
Fire Extinguisher			
Respirator / SCBA			
Communications Devices			
Retrieval Equipment			
Atmospheric Equipment Required	**Yes**	**No**	**Notes**
Gas/O_2/LEL Detector			
Blower/Ventilator			

EMERGENCY RESCUE INFORMATION: In the event of a life threatening emergency at PSNS, dial **911** and explain the situation and your location. Notify PSNS Emergency Line @ **360-476-3333** and request coordination assistance. For additional information refer to the project Health and Safety Plan.

I certify that I have evaluated the situation and the assigned personnel and the procedures to be followed are in compliance with Taylor Associates, Inc. Confined Space Program.

Signed_____. Print Name_____.

PLEASE KEEP COMPLETED PERMIT ON FILE.

Puget Sound Naval Shipyard
Confined Space/Hazardous Area Entry Permit
Continued

Atmospheric Requirements Continued					
Acceptable Limits for Entry					
Oxygen (O_2): 19.5 – 23.5 %					
Combustible Gas – Lower Explosion Limit (LEL): 10% Max					
Hydrogen Sulfide (H_2S) : 10 PPM Max					
Carbon Monoxide (CO): 35 PPM Max					
Other (explain):					
Time (24-hr)	**O_2**	**LEL**	**H_2S**	**CO**	**Other_____**
Pre-Entry					
Entry					

Gas Detector Information		
Unit #:	Unit Operational	
Last Calibrated:	Battery Check	

NOTES:

APPENDIX K:

MISCELLANEOUS SITE INFORMATION

2012-13 PSNS Non-Dry Dock Stormwater Monitoring
Monitoring Station Location Information

PSNS Outfall No.	EPA Outfall No.	Manhole ID	General Location	Map Fig No.	Specific Location Info.	[1]Enclosure No.	Est. sample tubing length (FT)
015	014	A42	NBK	1	south side of McD's (Build 1019) drive through lane	1	22
084.1	055	551	CIA	2	Southeast corner of B983, along west side of crane track in front of large rollup door	3	19
115.1	006	4860	CIA	3	South-southeast of B879, southern terminus of I-street, southwest of tempoaray stacked refueling office trailers, east of DD#2	5	44
053	012	2749	NBK	4	East-NE of Bldg 449, west of DD#6.	2	16
PB01	NA	SDMH1D	NBK	5	South-southeast of B449, west of DD#6	4	28
126	023	5110	CIA	6	southwest corner of Build 460, east of DD#3	6	19
						Total Run	148

PSNS Outfall No.	EPA Outfall No.	Manhole ID	General Location	Rim Elevation (FT)	Depth to Sampling Intake (FT) (Tape Down Measurement)	Approx. Elev. of Intake (FT)	Effective Tide Elevation (FT)	Outlet Pipe Diameter
015	014	A42	NBK	17.21	15.25	1.96	2	48
084.1	055	551	CIA	17.69	12.47	5.22	5.5	20.5
115.1	006	4860	CIA	17.72	16.45	1.27	1.5	18.5
053	012	2749	NBK	17.9	8.39	9.51	9.5	12
PB01	NA	SDMH1D	NBK	17.54	6.32	11.02	na[1]	8
126	023	5110	CIA	18.22	9.84	8.38	8.5	24

na[1] Tideflex and pump vault effectively keep out seawater
Suspect elevation

PSNS Outfall No.	Lat	Long
015	47.5581651685	-122.650856190
084.1	47.5586940407	-122.638802323
115.1	47.5612351549	-122.631935384
053	47.5575792670	-122.644820247
PB01	47.5561657880	-122.644994887
126	47.5617576729	-122.628697112

PSNS Tape Downs/Line Length and Head heights

Location	Tape Down (ft)	Line Length (ft)	Head height (ft)
PSNS 126	9.84	19	14
PSNS 053	8.39	16	11
PB01	6.32	30	9
PSNS 115.1	16.45	44	21
PSNS 84.1	12.47	19	15
PSNS 015	15.25	22	18

Note: collected in field on 11-2012
Note: verified that 15.25 was correct for original tape down

Reverified
New Phase II stations

2012-2013 PSNS Non-Dry Dock Stormwater Monitoring
Telemetry Systems Information

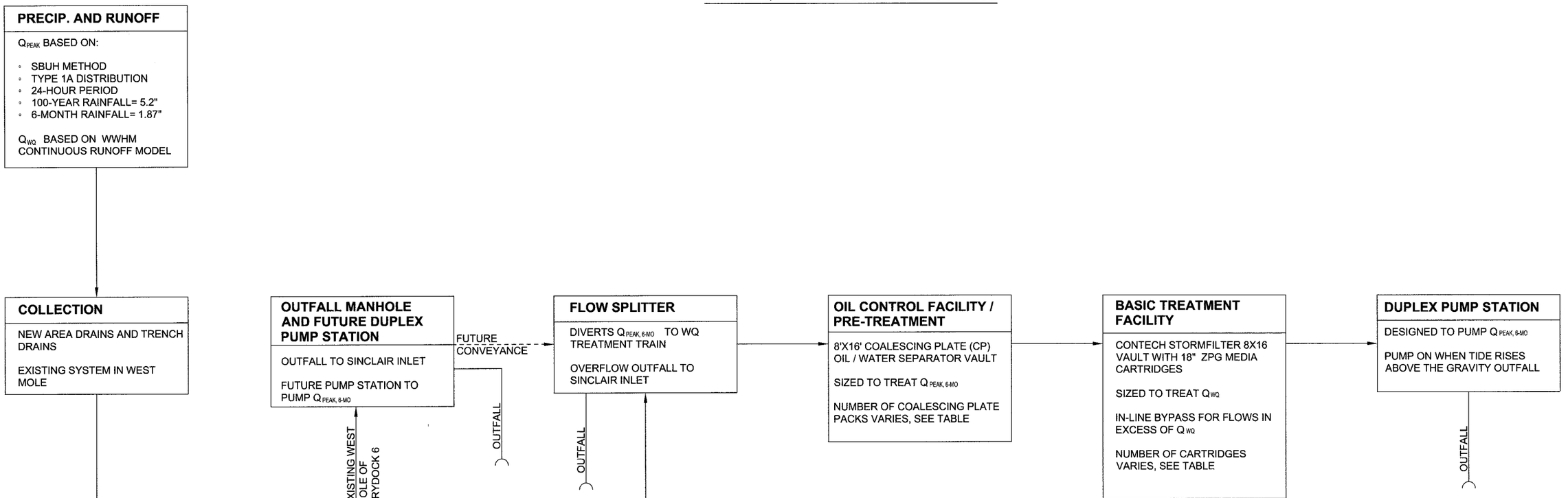
PSNS Outfall No.	Manhole ID	General Location	Telem Pkg Map Fig No.	Specific Location Info.	Control Box No.	Datalogger S/N	Modem ESN	Modem S/N
015	A42	NBK	1	SE corner McD's at end of drive-thru lane, B1019	1	35266	9611775713	1033519944
053	2749	NBK	4	East-northeast of B449, west of DD#6	2	35264	9611775481	1033520314
PB01	SDMH1D	NBK	5	South-southeast of B449, west of DD#6, Quay wall treatment system (eastern treatment vault lid)	4	27470	9609075190	929381962
84.1	551	CIA	2	Southeast corner of B983, along west side of crane track in front of large rollup door	3	35265	9611775498	1033520124
115.1	4860	CIA	3	South-southeast of B879, southern terminus of I-street, southwest of tempoaray stacked refueling office trailers, east of DD#2	5	42497	9611816930	1121627636
126	5110	CIA	6	Western side of B460, in pass-thru alcove	6	42496	9611816936	1121627529

NEW 2012-13 Telemetry Location Assignments
053 = old PSNS124
084.1 = old PSNS124.1
PSNSWQ01 = old PSNS084.1

- Box modem #'s
  - PSNS 84.1 (modem # 1033520124) – DL # 35265 (box came from 124.1 – labeled as Box #3)
  - PSNS 053 (modem # 1033520314) – DL # not collected (box came from 124 – labeled as Box #2)
  - PSNS Quay Wall (modem # 0929381962) – DL # not collected – new box, telem came from 084.1 – labeled as PSNS #1)

	FLOW RATES - PROPOSED & FUTURE				SYSTEM SIZING	
	AREA (ac.)	$Q_{PEAK, 100\text{-}YR (CFS)}$	$Q_{PEAK, 6\text{-}MO (CFS)}$	$Q_{WQ, OFF\text{-}LINE (CFS)}$	PLATE PACKS	CARTRIDGES
PIER B / QUAYWALL 729 WQ SYSTEM	3.0	3.59	1.27	0.33	3	23
NORTH MOLE FILL WQ SYSTEM	0.40 (2.0 FUT.)	2.07	0.17 (0.86 FUT.)	0.05 (0.22 FUT.)	1 (2 FUT.)	4 (14 FUT.)
SOUTH MOLE FILL WQ SYSTEM	0.53 (2.3 FUT.)	2.23	0.22 (0.99 FUT.)	0.06 (0.26 FUT.)	1 (2 FUT.)	4 (16 FUT.)

WATER QUALITY SYSTEM SIZING TABLE



STORM DRAINAGE FLOW CHART

REVISIONS

REV	DESCRIPTION	PREP. BY	DATE	APPROVED

WORK REQ NO.
KEY DWG NO.
DM — DATE
SUPV — DATE
SATISFACTORY TO
APPROVED FOR F&MO — DATE
REV -

SUBMITTED BY
FIRM MEMBER (TITLE) PRINCIPAL
DSGN: MFC | DR: LHT | CHK: FSP
PWD DWG NO. 71693

DEPARTMENT OF THE NAVY
NAVY REGION NORTHWEST
NAVAL BASE KITSAP
BREMERTON, WASHINGTON
P-356 CVN PIER REPLACEMENT
STORM DRAINAGE FLOW CHART

CONFORMED SET FOR CONSTRUCTION

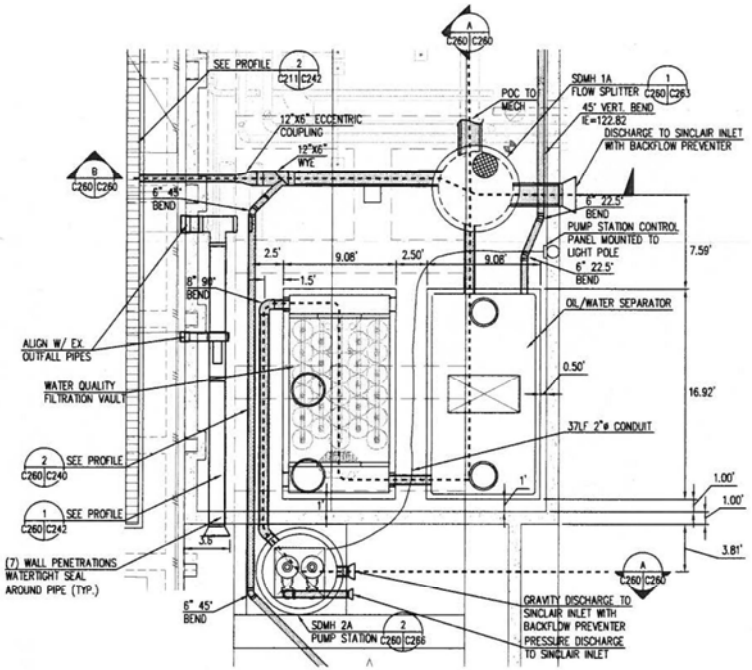
IF SHEET IS NOT 34" x 22" SCALE ACCORDINGLY

2" 1" 1/2"

CODE IDENT NO. 80091
CONSTR. CONTR. NO. N44255-08-C-6000
SPEC NO.
NAVFAC DWG. NO. 16005748
SHEET 281 OF 510
C269

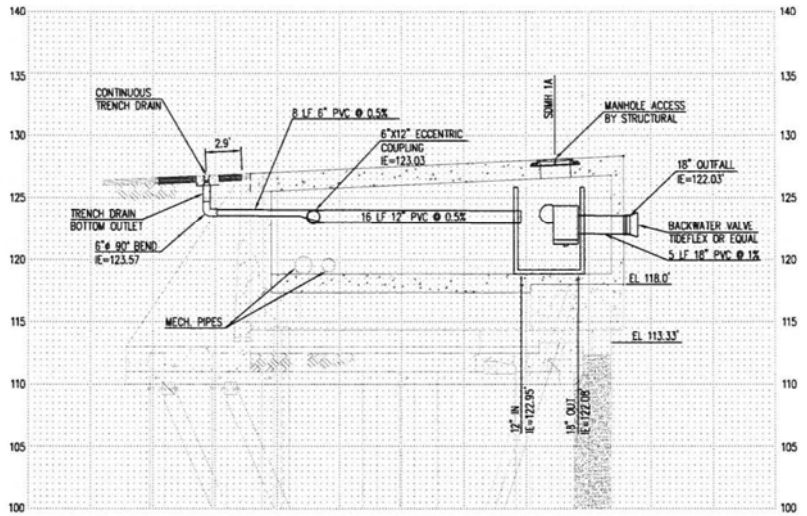
Nov 09, 2009 1:13pm KSmith V:\108211 (Pier B)\06 Civil Design\CADD\DESIGN\CD\C250_350-SX.dwg C269

CAD FILE NAME: C505.DWG 1:1



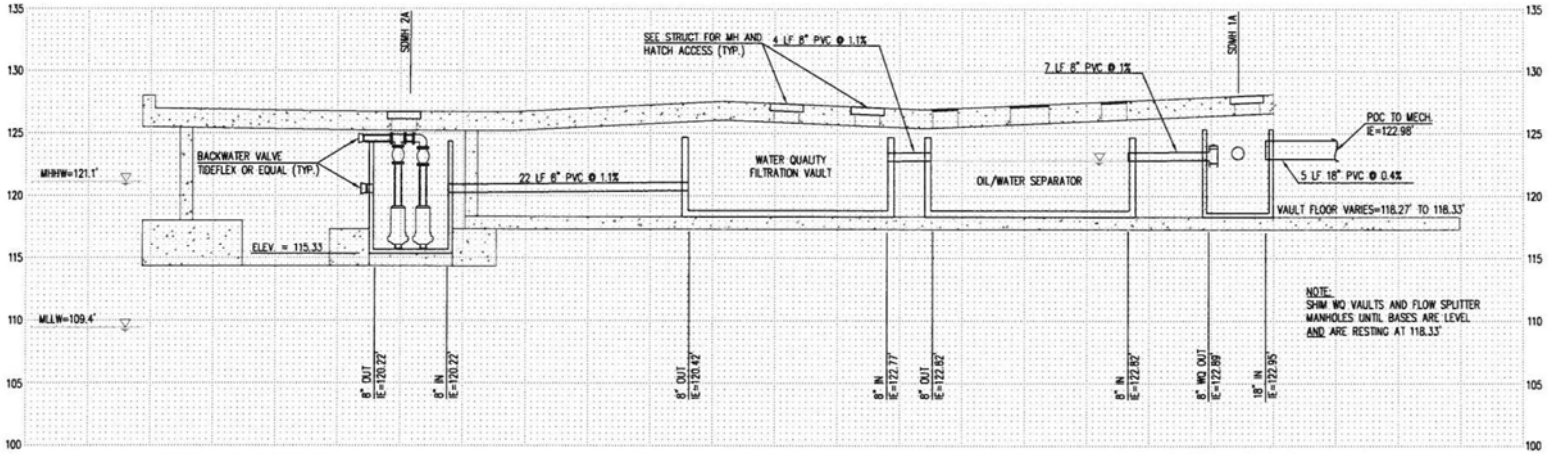
QUAYWALL 729 WATER QUALITY SYSTEM PLAN

C211 C260 SCALE: 1"=5'



QUAYWALL 729 WATER QUALITY SYSTEM PROFILE

B C260 C260 SCALE: 1"=5'



QUAYWALL 729 WATER QUALITY SYSTEM PROFILE

A C260 C260 SCALE: 1"=5'

REVISIONS

REV	DESCRIPTION	PREP. BY	DATE	APPROVED

WORK REQ NO.
KEY DWG NO.
SUBMITTED BY DM DATE
FOR MEMBER (TITLE) PRINCIPAL DATE 15 SEP 2009
DESIGN: MFC DR: LHT CHK: FSP
PWD DWG NO.
SUPV DATE
SATISFACTORY TO
APPROVED FOR NAVD
REV - - - - - - DATE

DEPARTMENT OF THE NAVY
NAVY REGION NORTHWEST
NAVAL BASE KITSAP
BREMERTON, WASHINGTON

P-356 CVN PIER REPLACEMENT
WATER QUALITY PLAN, PROFILE & SECTIONS

CODE IDENT NO. 80091
CONSTR. CONTR. NO. N44255-08-C-6000
SPEC NO.
NAVFAC DWG NO.
SHEET OF
C260

IF SHEET IS NOT 34" x 22" SCALE ACCORDINGLY

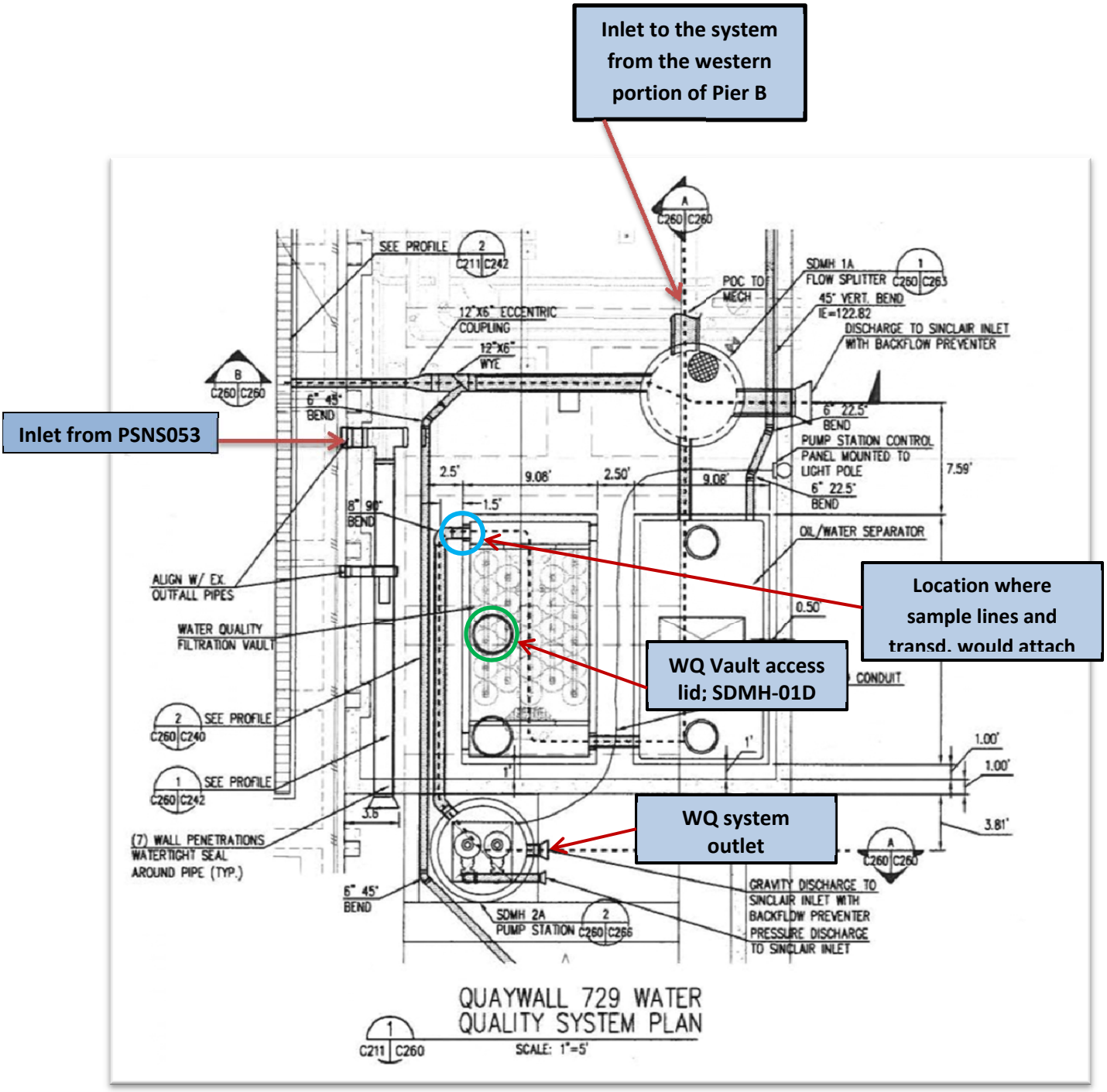
2" 1" 1/2"

Sep 10, 2009 4:05pm LeeT V:\106211 (Pier B)\06 Civil Design\CAD\DESIGN\C0\C250_350-SX.dwg C260

CAD FILE NAME: C504.DWG

Proposed Sampling Location within Pier B Quay Wall Treatment System:

Access through Contech Filter Vault lid (eastern portion), lid dimensions provided below - **CO's parking space, would require an outage marked in Green. Location where sample line and transducer would be affixed is marked in Blue.



Contech Filter Vault Manhole Lid Dimensions:

- Top of rim (inside dimension) = 32 3/4"
- Bottom of rim (inside dimension) = 32 3/8"
- Lid thickness w/ angle = 2 1/8"
- Measured across the lid as well (edge to edge) = 32 1/4"

As of 11/30/2012

DETAILS FOR MONITORING AT VAULT

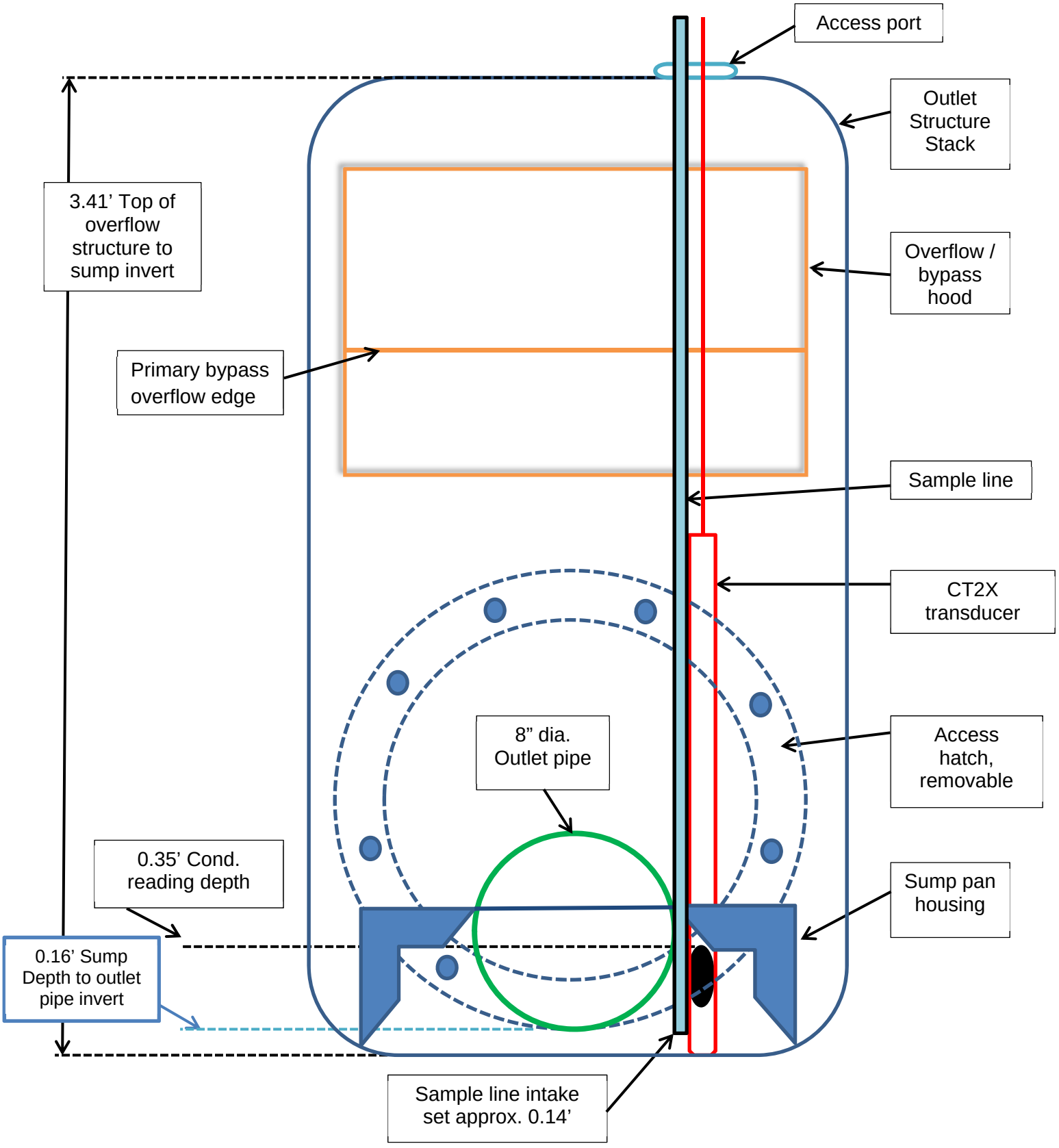
PSNS-PB01

SDMH-01D

- Transducer in outlet structure sump = CT2X (press / temp / cond.)
- Transducer in treatment vault = CS450 (press/temp)
- Sample line intake point is at sump, adjacent to CT2X
- Sump depth to outlet pipe invert (bottom of sump to invert of outlet pipe invert) = 0.16’
- Access hole of overflow structure to sump invert (distance from hole to bottom of sump) = 3.41’ = max depth
- WL in outlet pipe = (Max depth – Tape down) – 0.16’
- Outlet pipe = 0.67’ (8”) diameter
- Top of outlet pipe (pipe full) to sump bottom = 0.83’
- Water in sump needs to be at (0.35) before transducer can read conductivity.
- 0.35’ (submerged depth of conductivity sensor) – 0.16’ (standing water in sump) = 0.19’; therefore, water depth in pipe needs to be at least 0.19’ before probe can read conductivity.
- Minimum canister trickle depth = 0.08’
- Top of canister cowling (from vault floor) = 1.55’
- Top of canister (from vault floor) = 1.85
- Minimum water level depth for Vault Transducer = 0.01’
- NOTE: Trigger off sump sensor
- Bottom lip (manhole cover) to vault floor = 6.14’
- Top steel manhole cover to vault floor = 6.32’
- Elevation of top manhole cover (sampling lid) = 17.54’
- 13.60’ line length from sample intake to bottom lip of MH rim.
- Total sample line length = 30’
- Sump invert to primary bypass structure overflow edge = 2.19’
- Vault floor to primary bypass overflow edge = 1.78’

As of 11/30/2012

Schematic of PB01 Outlet / Sump Structure Setup for Sampling



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