



Introduction

Naval Station Norfolk is geographically located in the Southeastern corner of the Commonwealth of Virginia situated in the Sewells Point area of the City of Norfolk, near the site of the battle of the Monitor and Merrimac.

Naval Station Norfolk covers over 4,600 acres and has the largest supported population of any Naval facility with 59 home ported vessels, 18 squadrons with approximately 187 aircraft, 326 tenant activities, 602 significant facilities and approximately 46,000 military and 21,000 civilian personnel. Naval Station Norfolk is home to Commander, Naval Air Force, US Atlantic Fleet, Commander, Navy Region Mid-Atlantic as well as the Defense Department's largest supply center.

Background

Naval Station Norfolk Environmental Compliance Program Team

Ms. Leal Boyd, Air Manager, NAVFAC MIDLANT

Ms. Jennifer Tabor, Air Senior Program Manager, NAVFAC MIDLANT

Mr. Victor Gonzales, Drinking Water Manager, NAVFAC MIDLANT

Ms. Angela Gent, MS4 Manager, NAVFAC MIDLANT

Mr. Phillip Winslow, MS4 Manager, NAVFAC MIDLANT

Mr. Dave Cotnoir, Water Senior Program Manager, NAVFAC MIDLANT,

Ms. Dialis Figueroa-Arriaga, Water Senior Program Manager, NAVFAC MIDLANT Mr. Brian Powell, Water Program Manager, NAVFAC MIDLANT

Mr. Milton Johnston, Waste Manager, NAVFAC MIDLANT

Ms. Carol Peterson, Tank Senior Program Manager, NAVFAC MIDLANT

Mr. Alex Moring, Tank Manager, NAVFAC MIDLANT

Mr. Phil Croghan, Spill Program Manager, NAVFAC MIDLANT

Ms. Sharon Bauman, NSN Environmental Director, NAVFAC MIDLANT

Position Description

Media Manager (MM)

The position serves as a technical advisor for environmental matters with the responsibility for supporting the installations' EMS through the management of environmental media through planning, auditing, guiding, and monitoring compliance for individual environmental programs. Major duties include 1) Coordinating with Installation Environmental Program Staff to disseminate information on new requirements, with guidance, to Practice Owners by modifying checklists, instructions, SOPs, and training, as appropriate. 2) Communicating regulatory changes to and train Practice Owners so that compliance can be maintained. 3) Identifying appropriate corrective actions to respond to incidents of non-compliance elevated to their level by Installation Environmental Program Division Staff.

Senior Program Manager (SPM)

The position is a senior engineer or scientist and is responsible for the oversight and coordination of environmental issues for assigned media(s) at installations. The SPM is also responsible for coordination of Navy issues within states in EPA Regions I, II, III and North Carolina and DoD for assigned media(s) and within states in EPA Regions I and III. Major assignments involve: 1) resolving problems encountered by the installations, operational units, and Practice Owners in achieving compliance with Federal, State, and local regulations; 2) assisting MMs and other Practice Owners and also ensuring consistent program and EMS policies.



Summary of Environmental Program Accomplishments

Spill Program

Over the achievement period, NSN saw a 22% reduction in the total number of spills and a 33% reduction in the total volume of spills as compared to FY12-FY13, exceeding the 10% reduction target.



Environmental Services cleaning up a spill pierside. Through periodic shipboard spill training, working with TYCOMs to evaluate root cause, and other outreach; NSN has exceeded EMS targets in spill reduction. Photo credit: Ricky Cambridge, Naval Station Norfolk

For FY14-FY15, NSN developed the EMS Objective to Improve Spill and Leak Prevention. Through multi-media support of the Spill program, NSN strove to 1) reduce the volume and number of spills by 10% from the previous 2 years; 2) improve training and communications with commands associated with the Air operations.

The success in the reduction in the number and volume of spills is due to the focused milestone and plan of actions aimed at meeting EMS objectives and targets for spills which included 1) conducting four Shipboard Pier side Services & Environmental Training aimed at executive and deckplate level, 2) Newsletters, 3) performing ship specific training as requested, 4) updating ECATTS online training with multi-media input, 5) hosting quarterly meetings with USSF and TYCOMS to discuss spill trends, repeat spillers, and

opportunities of improvement. During the achievement period, improved training and communications with Air Operations tenants and commands through 1) providing squadron level training to the fixed wing, 2) conducting annual AFFF System training to assist in reducing inadvertent discharges to storm and sanitary, 3) hosting quarterly meetings with AIRLANT, wings, and AirOps to evaluate spills causes and determine ways to reduce spill frequency with the squadron maintenance departments.

Air Program

As a result of an EPA finding of non-compliance with EPA Ozone Depleting Substances regulation at NSN, a Continuous Process Improvement (CPI) was established to evaluate the existing process, identify areas of non-compliance, develop and implement a process to achieve full compliance with the regulation. A regional BMS was developed which met the regional EMS objectives and targets for ODS.

EPA's Clean Air Act requires owners/operators of air conditioning and refrigeration (A/C&R) units containing 50 pounds or more of ozone depleting substances (ODS) to: maintain an inventory of each unit; record dates and amounts of refrigerant added; calculate the leak rate each time refrigerant is added; report to EPA all instances where the annualized leak rate exceeds 35% for refrigeration or 15% for comfort cooling for more than 30 days; record leak repair dates and descriptions; perform initial and follow-up leak verification tests; and maintain documentation of service technician EPA certification.

After NAVFAC MIDLANT Environmental staff identified deficiencies in the ODS management program at NSN then at several installations, a CPI team was created to review the current maintenance and repair process and build a



Business Management System (BMS) covering NAVFAC MIDLANT A/C&R service. The team was comprised of representatives from Environmental, Public Works, Capital Improvements, Facilities Management, Facilities Engineering and Acquisition, and Production and contained representatives from Core staff as well as multiple installations throughout the Mid-Atlantic region.

The team worked from their Mar 2013 establishment through February 2014 to produce a BMS that outlined responsibilities for multiple business lines and was vetted through both the AFGE and MTC, the unions covering the affected workers. As part of BMS implementation, NAVFAC MIDLANT Environmental staff provided extensive training on the ODS BMS requirements to A/C&R technicians, facilities management, and environmental oversight personnel. Training of affected workers occurred from April 2014 through December 2014. These efforts ensured the affected employees have the tools, skills and knowledge for sustained efficiency, compliance, and conservation.

The ODS BMS allows NAVFAC MIDLANT to provide superior support to the war-fighter while maintaining Environmental compliance and saving resources by clearly identifying responsibilities. It has resulted in NSN attaining compliance with the EPA regulations and satisfying the installation Title V air permit compliance plan. It has also improved the environment by minimizing releases of ODS refrigerants.

To ensure ongoing compliance, the BMS assigns auditing responsibilities to both the Facilities Management and Environmental business lines. This proactive approach reinforces regulatory requirements and prevents environmental issues from arising. Auditing of the process by Environmental throughout the implementation

improved compliance by identifying areas where re-training was required, and after several rounds of training and auditing we had the evidence to deem the BMS implementation a success.

In anticipation of pending regulatory changes, and to ease implementation, the BMS requirements were applied to all refrigerant containing equipment. This meets and exceeds federal mandates, and allows for seamless operation in the event EPA finalizes regulatory changes related to refrigerant replacements as proposed in the Federal Register Vol. 80, No. 216 on Monday, November 9, 2015. This proactive approach is a testament to the effectiveness of the CPI Team, which has been recognized in the MIDLANT Messenger for these accomplishments. The ODS BMS has been presented and shared with other Navy FECs at the Air MFT face to face meeting, as well as across the services at Air Roundtable meetings. The ODS BMS could easily be adapted across the Navy or DoD for all shore side A/C&R system compliance.

The Air Staff is focusing on the regional EMS objectives and targets for EPA's regulation- Reciprocating Internal Combustion Engine (ICE).

The ICE standard requires specific engine maintenance, run time records, emissions certifications, and fuel certifications for stationary engines and had a compliance date of MAY 2013. Due to the nature of unmanned emergency only generators and fire pumps, recordkeeping for the ICE has been a challenge. NAVFAC MIDLANT Environmental established a CPI team in JAN 2015, with members from affected Public Works Business lines including Production, Utilities, and Facilities Management. To address concerns with fuel standards, discussions were also held with representatives from Naval Supply Systems Command Fleet Logistics Center (FLC). By the end



of FY15, the team developed a draft MIDLANT BMS to detail the roles and responsibilities of the parties for ICE compliance, including performance of the required monthly fuel tank inspections. Implementation is planned for 2nd Quarter FY16.

Tank Program

As a result of an EPA finding of non-compliance with Tank program at NSN, the regional EMS objectives and targets were established to improve tank management and compliance.

After creating a 2012 Standard Operating Procedure (SOP) for AST management within the Hampton Roads area, FY13 was a demanding year for managers to implement the SOP. Priority efforts to achieve maximum AST compliance included managing regulatory inspections, repairs and maintenance, and training. Consequently, these efforts have minimized significant area-wide deficiencies, such as inadequate secondary containment, and have allowed environmental (EV) staff to now focus on compliance on a per-tank basis.

Recent revisions to the federal Spill Prevention, Control, and Countermeasures (SPCC) Rule, 40CFR112, required inspections for petroleum ASTs (equal to or greater than 55 gallons) to be performed in accordance with an industry standard. The industry standard for most petroleum tanks in the Hampton Roads area requires at least a monthly inspection. Additionally, state-regulated tanks require daily and weekly inspections. Because there are not enough installation EV staff to perform all of these inspections, this task was placed on the tenants. During the achievement

period implementation of this new process included: 1) creating individual 3-ring binders specific to each tank that included photos, tank configuration and equipment information, and pertinent inspection checklists, 2) delivering the binders to each tenant and providing on-site inspection training. This effort allowed installation EV staff to maintain manageable quarterly oversight inspections, opened lines of communication between all EV staff and tenants, and provided trained on-site personnel to be the eyes for EV staff regarding tanks at their facility. In addition to daily, weekly, and monthly inspections, EV staff awarded and managed over \$1 million of CNRMA EC funds for contracted integrity testing and annual and/or semi-annual tank inspections in an effort to achieve compliance with mandatory integrity inspections.



Exposed is the top of a UST tank at NSN. A contractor is replacing UST fill sumps to assure that fuel caught in the sumps does not escape into the ground. One of many types of repairs conducted to address Tank maintenance. Photo credit: Unknown

During FY13, contracted SPCC effort identified tank deficiencies for each AST. Most deficiencies fell into a “repair and maintenance” category stemming from improper tank installations to insufficient repair and maintenance schedules. Using FY14 CNRMA EC funds as well as congressional Plus-Up and end-of-year monies, awarded and managed over \$2 million of tank contracts to repair, replace, demolish, upgrade, and/or maintain ASTs throughout the Hampton Roads region with \$450k of this for NSN to achieve regulatory compliance with federal SPCC regulations.

Tank managers created and/or revised pertinent training for AST inspections, SPCC- required training, and UST Operator Training. Further, NSN



tank manager provided on-site and classroom training for tenants and installation upon request.

The EMS regional objectives also targeted improving oversight of USTs which were met for NSN and included: developing site specific Emergency Response at each regulated UST, developing and distributing binders for each UST system. During the 2014 EPA inspection, the UST inspector praised NSN as “the best federal facility he had ever seen”.

Municipal Stormwater Program

The impact of the following efforts has contributed to exceeding the 2018 regional TMDL reduction goals 3 years early.

Over the achievement period, the Navy’s Municipal Separate Storm Sewer System (MS4) program: 1) implemented a Construction Site Inspection program to ensure construction site operators comply with the Virginia Erosion and Sediment Control Regulations and the Virginia Stormwater Program (VSMP) Permit Regulations. This effort is one of the many collective series of programs developed to comply with the MS4 discharge permit in order to reduce pollutant discharges to the maximum extent practicable in a manner that protects the water quality of nearby streams, rivers, wetlands and bays; 2) incorporated Low Impact Development (LID) practices/Best Management Practices (BMP) designs into new construction projects as well as renovations. BMP designs are cost effective plans that utilize a combination of retention devices and vegetative controls to filter pollutants while allowing storm water to be maintained and managed at the source which reduces runoff volume; 3) implemented Stormwater Management Inspection and Maintenance Program to reduce pollutant runoff. NSN has 79 water quality treatment devices that drain to the Bay. The impact of these efforts has contributed

to exceeding the 2018 regional TMDL reduction goals.

172 BMP opportunities were identified at NSN. Through the coordination of NSN Public Works, the highest scoring BMPs will be implemented in the future as part of the Navy Regional Chesapeake Bay Action Plan to meet 2023 TMDL reduction goals.



A 0.4 parking lot expansion was constructed at Building E-26 in FY14 which installed two Filterra stormwater treatment systems to treat stormwater runoff. A Filterra is a mini-bioretenion area installed under a tree that helps control and filter storm water runoff. Photo credit: Ricky Cambridge, Naval Station Norfolk

NSN conducted a stormwater BMP opportunity assessment to identify all locations where stormwater BMPs could be implemented to reduce stormwater pollutant loadings of nitrogen, phosphorous, and total suspended solids. These pollutants must be reduced in order to restore water quality in the Chesapeake Bay as required by the Total Maximum Daily Load developed by EPA, the Watershed Implementation Plan developed by the VA Department of Environmental Quality (VADEQ), and the Navy Regional MS4 discharge permit issued by the VADEQ. The stormwater BMP assessment focused on opportunities to implement LID practices as they can achieve substantial reduction credits for the Bay pollutants of concern. The stormwater BMP opportunities were prioritized to enable implementation of the most efficient cost effective BMPs.



Education and Outreach

Our MS4 program has a public outreach and education component which is intended to educate the general public on stormwater pollution and ways to minimize and prevent impacts to our waterways. Outreach efforts include: distributing brochures at public outreach events and housing; setting up outreach displays at public events; providing environmental trainings through ECATTS (web-based) or through face to face trainings, publishing newspaper articles and distributing information via website related to stormwater pollution.



Brochure stand employed at various outreach events. The MS4 education component is intended to educate the general public on stormwater pollution and ways to minimize and prevent impacts to our waterways. Photo credit: Ricky Cambridge. Naval Station Norfolk

Waste Program

Numerous projects are underway at NSN to reduce waste.

During the achievement period, NSN EV identified a free fire extinguisher recycling program in conjunction with Virginia Industries for the Blind (VIB) which is expected to be implemented 2nd quarter FY16. Current disposal practices require the preparation through the man power intensive

operation of removing the valve and contents along with a disposal cost of \$40.00/fire extinguisher. Due to these costs and manpower requirements, a very large stockpile of fire extinguishers have been accumulated by Regional Fire and tenant commands.

State solid waste regulations only allow the accumulation of solid waste for 90 days without a permit and the extended storage times have also exposed the Navy to a regulatory compliance risk. The Fire Extinguisher recycling initiative to be instituted will collect the expired fire extinguishers at a manned NAVSUP warehouse, ship the fire extinguishers (at no cost to the Navy) to the VIB recycling facility in Petersburg, VA where the VIB will test, refurbish and sell the recycled fire extinguishers. Currently we have over 2000 fire extinguishers stockpiled. Recycling just what we have stockpiled will save at least 500 man hours and at least \$80,000 in disposal costs and eliminates the regulatory compliance risk. Ongoing savings will be realized in disposal cost avoidance in future years and potentially through the repurchase of discounted recycled fire extinguishers.



Stockpile of empty fire extinguishers that are ready to be placed in a metals dumpster for disposal. The new partnership with VIB allows the Navy to ship the extinguishers, at no cost, where the VIB will test, refurbish, and sell the recycled fire extinguishers. Photo credit: Ricky Cambridge, Naval Station Norfolk

Call2Recycle provides free shipping and management of spent rechargeable batteries. Most of NSN's larger tenants generate rechargeable battery waste. Currently these batteries are managed as universal waste through



EV Services. As a waste, the tenants pay a set disposal cost per pound to EV Services. In FY15 a concerted effort was placed to modify the management of batteries through the use of Call2Recycle which saves the tenant the disposal costs and reduces the installation's waste generation footprint.

Also, EV is replacing <90 hazardous waste accumulation areas with satellite accumulation areas. Review of several Aircraft maintenance operations indicated a significant decrease in the amount of waste generated. In light of this reduction, several <90 hazardous waste areas have been converted from <90 day accumulation areas to satellite areas. The benefits include manpower savings through the elimination of regulatory required weekly inspections and cost avoidance of disposing only partially full accumulation containers every 90 days.

There are current on-going projects to improve the Hazardous waste compliance posture

EV submitted HW Permit modification. The HW permit establishes specific bays in each permitted unit where specific types of compatible waste can be stored. As tenant waste generation across the region has changed, EV and EV Services realized the need for capacity for storage of certain types of waste was diminishing and other types increasing. As a result, EV submitted and obtained a Permit modification to reassign waste types to different bays to accommodate the waste generation changes. The permit modification allows NSN to maintain compliance with the permit while continuing to be responsive to tenant waste management needs.

Drinking Water Program

In FY13 drinking water lead results at a NSN Child Development Center (CDC) which measured greater than the U.S. EPA recommended level, and

resulted in corrective actions and development of a complex communication plan. In FY14, NSN contributed lessons learned significantly revising OPNAV policy.

NSN was one of the first installations worldwide to begin the lead testing initiative in facilities classified as priority areas (schools, youth centers, child day care centers) as directed through Navy policy. When lead in drinking water results at the CDC came back higher than EPA recommended level, NSN engaged multiple stakeholders in corrective action and complex communication plan.



The Flagship article from April 10, 2013, was just one small part of the complex communication plan that NSN implemented to address stakeholders' concerns with the above EPA recommended lead levels. The communication protocol was on gap addressed in the 08 February 2014 revision in the OPNAV N45 policy

NAVSTA Norfolk initiated corrective actions at sites where elevated lead levels were identified, working with Environmental, Medical, Public Affairs Office (PAO), and command personnel to address and resolve public concerns. NAVSTA



Norfolk lessons learned were used to prepare a guidance document for NAVFAC Headquarters detailing the sampling and testing for lead in drinking water as well as the extensive coordination and prior notification efforts. The guidance document was submitted to Chief of Naval Operations (CNO) Environmental for inclusion to the Navy's environmental guidance document. The guidance document identified several gaps in Navy policy with respect to periodicity of sampling, sampling intensity, and communication protocols. Commander, Navy Installations Command (CNIC) suspended further sampling enterprise-wide in late March 2013 and conducted an in-depth review of existing OPNAV 5090 policy and Region implementation of this policy. OPNAV N45 issued revised policy on 8 Feb 2014 requiring all Navy installations worldwide to complete baseline testing 31 Dec 2014.

Implementation Of New Resolution Plan To Address Total Coliform Exceedances

In December 2013, NAVSTA Norfolk implemented a new strategy to identify potential sources contributing to above-normal Total Coliform positive results that led to nine Notices of Violations (NOVs) to several installations located in the Hampton Roads area. NAVSTA Norfolk developed and implemented a complex plan for resolution which included coordination with internal Navy stakeholders, local municipalities, and state and federal regulators. The plan of resolution involved developing of a new evaluation form that listed most common contamination sources, and was used to gather input from all stakeholders involved in the potable system operation (Utilities Department, Backflow Certification Management, Environmental Lab Services, and Environmental Compliance). The evaluation form was based on new EPA guidelines developed for the Revised Total Coliform Rule effective in 2016. Some of the sources identified

included backflow devices under repair, sampling collection protocols inconsistencies, and inconsistencies with implementation of distribution system flushing programs. On 18 DEC 13, N45 briefed NRMA Admiral on proposed near and long term plans for resolution as well as provided routine updates on results. Since corrective measures have been implemented there have been No additional NOVs issued.