

Multimedia Compliance Inspection Report  
U.S. Naval Submarine Base, Bangor, Wa.  
Paul Boys, EPA Region 10  
July 25, 1986

## 1.0 Introduction

In response to a request from Congressman Norm Dicks, EPA Region 10 conducted a comprehensive investigation into the environmental compliance status of the U.S. Naval Submarine Base at Bangor, Washington. This request was, in part, due to several articles published in the Bremerton Sun which alleged that numerous environmental problems had occurred and continue to occur at the Subbase. Although EPA Region 10 had conducted several inspections at the Subbase in a few of the environmental program areas for which EPA has jurisdiction, no comprehensive multimedia inspection had been done at the Subbase. The Acting Regional Administrator directed that a comprehensive multimedia compliance inspection be conducted for all of the program areas for which EPA has jurisdiction. Since there was already an on-going EPA review of the Installation Restoration Program which is designed to investigate past contamination problems, the multimedia compliance inspection focused on current operations at the Subbase. For the areas where the Washington State Department of Ecology or a local environmental agency has delegation authority, those agencies were also involved in the inspections.

## 2.0 Inspection Schedule

The inspections were conducted on five days during June 1986. Twelve EPA, Ecology, and local agency inspectors were involved in various components of the inspection which covered seven environmental areas. A schedule of the inspection dates including the agency participants for each environmental area is shown below.

Date	Program Area	EPA Inspector	State/Local Agency Inspector
June 4	Spill Prevention Control and Countermeasures (SPCC)	John Sainsbury Paul Boys	-
June 4	Underground Storage Tanks	Paul Boys	-
June 5	Drinking Water	Leigh Woodruff Paul Boys	Ethan Moseng, DSHS
June 5	Toxics Substances Control Act (PCB)	Paul Boys	-
June 6	Resource Conservation and Recovery Act (RCRA)	Jim Pankanin Paul Boys	Julie Sellick, Ecology
June 16	Wastewater Pretreatment	Bob Robichaud Mike Silverman Paul Boys	Dave Wright, Ecology Craig Baker, Ecology
June 19	Air	Paul Boys	Jim Nolan, PSAPCA John Drabek, Ecology

### 3.0 Findings and Recommendations

In this section I have summarized the findings of each inspection and listed recommendations for improvement or corrective action. Some of the specific violations have been or will be addressed by separate correspondence from EPA or the appropriate State or local agency. EPA received a copy of the February 19, 1986, letter from Captain D.D. Middleton, Commanding Officer of Subase Bangor to Mr. Lloyd A. Pritchett of the Bremerton Sun in which the Navy responded to 45 specific points raised by Mr. Pritchett. I have not itemized an EPA response to each of these points; however, many of these points were addressed in the individual inspections. In most cases EPA found the Navy response to be appropriate and in compliance with the applicable environmental regulations. Some of the allegations made in the Bremerton Sun articles do not fall under the jurisdiction of EPA or the State/local environmental agencies. To the extent possible these allegations were discussed during the course of the inspections and the findings reported here.

Some violations or deficiencies were noted in all of the environmental areas inspected. However, most of these can be characterized as relatively minor. When viewed in a wider perspective, the environmental program at the Subase is very good compared to other facilities in both the public and private sectors. There is clear support and direction for a high quality environmental program at the Subase from the top of the Navy command on down through the individuals responsible for each segment of the program. The Navy has plans for improvements in several areas of their environmental program including a new hazardous waste and oily waste consolidation and storage area and a comprehensive revision to their SPCC plan. The recommendations contained in the following sections, if implemented, will also strengthen the environmental program at the Subase.

#### 3.1 Spill Prevention Control and Countermeasures

EPA responded to an oil spill at the Subase Bangor Service Pier on March 13, 1986. As a result of that inspection, Jim Willman, Chief of the Superfund Removal and Emergency Response Section at EPA Region 10, sent a letter to the Commanding Officer of the Subase recommending that site specific SPCC plans should be developed for each storage facility (see Appendix 4.1). At the time of the June 4, 1986, SPCC inspection, Mr. Rick Spencer, Environmental Engineer at Subase Bangor, stated that the SPCC plan was in the process of a major revision, but was not available at that time. The present plan dated 1983 is site specific but not as complete in technical detail as the plan currently under development. The scheduled completion date for the new SPCC plan is September 1986. Several actions have already been taken to prevent a spill from reoccurring at the Service Pier. High level shutoff switches have been installed to shut off the pumps feeding the oily waste storage tanks before they overflow.

A physical inspection of the oil storage areas on the Subase was made. John Sainsbury, EPA, made several specific recommendations to the Subase personnel about items that should be addressed in the new SPCC plan. Several of these items are also addressed in other inspection areas such as drinking water, wastewater pretreatment, and underground storage tanks. The first of two general recommendations which apply to the SPCC area concerns the need for

adequate training for all of the various personnel components on the Subase (i.e. uniformed Navy, civilian Navy, and contractors) to ensure that all of the appropriate personnel are adequately instructed on proper operation of the oil storage systems and in how to respond to any spill. The second recommendation is to develop a routine testing program for tanks and piping to detect leaks before a major leak develops. This point is vividly illustrated by the leak recently detected in one of the underground gasoline storage tanks (see section 3.2). A copy of the SPCC inspection report is contained in Appendix 4.1.

After the revised SPCC plan is completed, EPA should review it in light of previous spill incidents at the Subase.

### 3.2 Underground Storage Tanks

The underground storage tank regulations have just recently been promulgated under RCRA. The main requirement to date is for each applicable facility to submit notification forms for each underground storage tank to EPA or the State. The Subase submitted the notification forms on April 18, 1986. There are 68 underground storage tanks at the Subase, 2 not in use, 3 containing regulated chemicals, and the remaining 63 containing petroleum products or oily waste.

According to Mr. Rob Roholt, an Environmental Engineer with the Naval Engineering Facilities Command in Silverdale, the Navy is involved with a two phase underground tank program. The first phase was to identify all of the underground tanks at Navy facilities. The second phase is to remove or replace leaking tanks and develop leak test procedures for high risk tanks. In addition, all new construction of underground storage tanks is reviewed for good engineering design such as double wall construction and leak detection capability.

On June 19, 1986, Captain Heine, the Public Works Director, informed me that a leak was detected in the 20,000 gallon underground storage tank at the Public Works area. A contractor had been hired to conduct exploratory drilling to determine the extent of the contamination from the unleaded gasoline stored in the tank. From the subsequent investigation the estimated quantity of gasoline lost from the tank since its installation in 1976 was about 20,000 gallons. After excavating around the pressure piping from the tank which leads to the bulk loading terminal, the source of the leak was discovered to be a saw cut in the piping. This defect was evidently present from the original construction. The Subase is presently planning to install recovery wells to extract the gasoline from the ground around the tank. The contaminated area appears to be confined to a radius of several hundred feet around the tank. The information available to date indicates that this spill is not an immediate threat to the drinking water aquifer for the base.

This incident illustrates the reason for concern about leaks from underground storage tanks. In this case the leak appears to be the result of faulty construction and lack of adequate testing prior to putting the tank into service. However, corrosion of old tanks could cause the same result. Without a leak testing program or a leak detection system in place, it is usually difficult to detect leaks until a significant quantity of liquid has already been lost.

Therefore, EPA encourages the Navy to proceed with development and implementation of the underground storage tank program described by Mr. Roholt. Although not required by the underground storage tank regulations at this time, it would be desirable to institute a program to test and/or monitor all of the underground storage tanks at the Subase.

### 3.3 Drinking Water

The drinking water for the Subase is produced from several wells on the base property. Leigh Woodruff, EPA, and Ethan Moseng, DSHS, reviewed the production and distribution system design, inspected the wells and several portions of the distribution system, and collected samples from seven locations in the drinking water system. In general, the Subase water system appears to be well built and operated. The results for the samples collected on June 5, 1986, confirm previous analyses results that the water quality is in compliance with the health related Maximum Contaminant Levels (MCL). Some of the water samples exceeded the secondary MCL for iron and manganese. The secondary MCL are based on aesthetic concerns rather than on health effects.

The inspection did detect several items that should be addressed by the Subase including lack of sample taps at the well heads, lack of proper screening on the wells, lack of containment around the auxiliary fuel storage tanks at the wells, improper backflow prevention devices in the plumbing between the fire protection system and the potable water lines at the Family Services Center, use of filters in the water lines in some buildings, and low free chlorine residual level in the lower pressure zone of the drinking water system. A complete listing of the findings and recommendations are contained in the EPA and DSHS reports in Appendix 4.2.

### 3.4 Toxic Substances Control Act

An inspection to determine compliance with the regulations for polychlorinated biphenols (PCB) was conducted on June 5, 1986. Two previous PCB inspections had been conducted at the Subase in 1982. Basically, the Subase has a comprehensive PCB program which is integrated to a large extent with the hazardous waste program. As a result of the inspection three violations were noted, two relating to record keeping requirements and one relating to a leak from a transformer. The leak was from a small transformer stored for future use on an asphalt pad. The leak was fresh but had not been properly reported to the Subase spill response team. The spill was cleaned up within 24 hours and the dielectric fluid tested and found to be non-PCB. This incident illustrates a breakdown in the institutional system designed to detect and cleanup spills of this kind. A complete description of the PCB inspection is contained in the report in Appendix 4.3.

The Toxic Substances Section has referred this case to the Office of Regional Counsel for consideration of enforcement action. While not representing a significant public health or environmental problem, the violations found during the inspection are considered serious enough to warrant issuance of a complaint.

### 3.5 Resource Conservation and Recovery Act

Since the Washington State Department of Ecology has been delegated the RCRA compliance program, Julie Sellick of Ecology took the lead role in the RCRA inspection. Her complete report is contained in Appendix 4.4. The only problems noted were related to minor details for reporting and recordkeeping. In general, the hazardous waste program at Subase Bangor is well designed and managed. The waste generation sources are well defined and all operating units are aware of proper hazardous waste handling procedures. Through the use of a specialized hazardous waste team and a computer tracking system, the Subase is able to manage the hazardous wastes generated at the base in a manner which allows the Subase to be classified as a generator only (and not a treatment, storage or disposal facility). Plans are underway to integrate a computerized system for tracking hazardous materials that come into the base with the hazardous waste tracking system so that the two programs can be managed in a way which ensures "cradle to grave" tracking of hazardous materials.

### 3.6 Wastewater Pretreatment

Since the Subase does not discharge wastewater directly to any surface water body, no NPDES permit has been issued for the Subase. All of the wastewater from the Subase is pumped into a sewer line to the Kitsap County Central Treatment Plant. The Subase does operate several oil/water separators and an industrial pretreatment facility which treats certain wastewater streams from within the base before the wastewater is sent to the County treatment plant. At the present time the Subase is covered by the General Pretreatment Regulations (40 CFR 403.5) and the County Sewer Use Ordinance but not any of the categorical pretreatment standards. The Subase is considering construction of a metal finishing facility. If that facility is constructed the Metal Finishing Pretreatment Standard will apply to the new facility and possibly to other sources of industrial wastewater within the Subase.

Based on this inspection the wastewater treatment practices at the Subase are in compliance with the General Pretreatment Regulations. The following recommendations are made to improve the current system. The SPCC plan should include sources of contamination both inside and outside of buildings which could flow into the sewer system. Several specific sources noted during the inspection are listed in the wastewater inspection report along with specific recommendations (see Appendix 4.5). A survey of all operations on the Subase that are capable of generating wastewater should be conducted. The survey results will provide the information needed to identify which, if any, of these operations will be covered by the Metal Finishing Pretreatment Standard when the metal finishing facility becomes operational.

The current contract between the Subase and Kitsap County for wastewater treatment does not include the specific effluent limitations that were in the original contract. EPA and Ecology plan to review this change in more detail to determine if some additional discharge requirements are appropriate.

### 3.7 Air

The air inspection was conducted by inspectors from the Puget Sound Air Pollution Control Agency, Ecology and EPA. The major air emission sources at the base are the coal fired boilers which are controlled with electrostatic precipitators (ESP). At the time of the inspection the boilers and ESP were operating in compliance. In addition, there were no visible emissions from the boiler stack. Jim Nolan of PSAPCA did issue notices of violation for two sources of volatile organic compounds (a gasoline storage tank and a vapor degreaser). The only other air concern is the potential for fugitive dust emissions from large-scale sandblasting operations at the Delta Pier drydock since the baghouse collectors have been removed from the drydock cover. Since no large-scale sandblasting has yet been done at the drydock, it has not been determined whether there will be a fugitive dust problem. Copies of the EPA and PSAPCA inspection reports are contained in Appendix 4.6.

### 3.8 Other Environmental Concerns

One of the situations mentioned in the Bremerton Sun articles related to the evolution of hydrogen sulfide gas ( $H_2S$ ) from some of the oily waste tank trucks used to haul oily waste offsite to an oil recovery facility. According to Subase personnel this situation occurs infrequently due to inadvertent mixing of sewage and oily bilge water. The mixing may occur on the ships or by improper piping connections at the shoreside facility. As a result of the mixing of the sewage with the oily waste,  $H_2S$  is generated as a decomposition product.

Several actions have been taken to reduce the occurrence of this situation. One is better marking of the shoreside piping connections. Another is education to inform the shipboard and shoreside personnel of the need to keep the sewage separate from the oily bilge water. When this situation does happen, the tanker is taken to the Industrial Waste Treatment Facility where hydrogen peroxide (an oxidizing and disinfectant agent) is added to the tank. Air is then sparged through the tank to purge out the remaining  $H_2S$ .

Because of the infrequent occurrence of this situation and the small quantity of  $H_2S$  involved, EPA does not consider this to be of concern from an environmental release point of view. Although occupational worker exposure assessment is beyond the scope of EPA's authority, it does not seem likely that tank truck workers would have been exposed to  $H_2S$  in high enough concentrations to have caused a serious health concern based on an evaluation of the physical setting, the description of the chemical reactions taking place and familiarity with  $H_2S$  exposure at sewage treatment plants and industrial facilities. Most injury or deaths from  $H_2S$  exposure occur in contained spaces such as tanks, buildings or sewer pipes where the concentration can build up to dangerous levels. In open areas most people can smell  $H_2S$  at a concentration several times lower than the 8-hour threshold limit value of 10 ppm recommended by the American Conference of Governmental Industrial Hygienists and will react to the rather unpleasant smell by moving upwind.  $H_2S$  can overwhelm a person's olfactory system at high concentrations; but short of placing one's head directly over or into the tank hatch, it seems unlikely that such high concentrations of  $H_2S$  would have been experienced.