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NSWC INDIAN HEAD  
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LETTER FROM U S NAVY REGARDING UNPERMITTED TRICHLOROETHYLENE  
DISCHARGE AT OUTFALL 80 30 JUNE 1994 NSWC INDIAN HEAD MD  
7/20/1994  
NSWC INDIAN HEAD

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DEPARTMENT OF THE NAVY

INDIAN HEAD DIVISION  
NAVAL SURFACE WARFARE CENTER  
101 STRAUSS AVE  
INDIAN HEAD MD 20640-5035

5090  
Ser 0951/385  
20 Jul 94

Mr. Jack Bowen  
Maryland Department of the Environment  
Inspection and Compliance Program  
2500 Broening Highway  
Baltimore, MD 21224

Dear Mr. Bowen:

On June 30, 1994, the Maryland Department of the Environment (MDE) issued a Site Complaint (Number SC-0-94-0054) to the Indian Head Division, Naval Surface Warfare Center. The site complaint directed us to submit our plans for identifying and eliminating the source of an unpermitted trichloroethylene (TCE) discharge at industrial wastewater (IW) outfall 80.

The investigation to date indicates the TCE is coming from past contamination of the ground near the outfall site rather than current TCE usage. Our response, provided in the attached report, outlines our plans to locate the area of contamination. Elimination and/or cleanup of the TCE cannot be adequately addressed until the contamination is found and quantified.

If you have any questions, please contact Mr. Mike Dunn of my staff on (301) 743-4320.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan P. Adams".

SUSAN P. ADAMS  
Director, Environmental Division  
By direction of the Commander

Encl:  
(1) Response to Site Complaint

Copy to:  
MDE (J. Beazley)  
MDE (E. Gertler)  
MDE (K. Lemaster)  
EFACHES (Code 181)

## Response to Site Complaint

### I. Background

Trichloroethylene (TCE) was first identified at outfall IW80 in February 1994 at 53 parts per billion (ppb). A second volatiles sample, taken in May 1994, confirmed the presence of TCE at the same approximate concentration (60.2 ppb).

Our records show the TCE is not coming from current operations. A list of buildings that discharge to IW80 is provided as Attachment A. TCE is not used in any of these buildings. In fact, there is no record of TCE on the latest basewide chemical inventory conducted in December 1993.

The last known TCE operation was in Building 292, where it was used for degreasing until 1989. We suspect the TCE now being detected is from past contamination of the ground near Building 292. This building is directly in front of a manhole that leads to IW80.

As part of our investigation, we have been reviewing old job procedures and interviewing past operations personnel. In summary we have found:

a. Building 292 housed a 1,900 gallon TCE vapor degreaser used extensively from the mid-1960s until 1989. TCE was also used in large solvent dip tanks and for general purpose cleaning through the mid-1970s.

b. Operating procedures state that the spent TCE from the vapor degreaser was pumped into drums outside the building about twice a year. This was a manual operation, without any automatic shutoffs, which could have resulted in periodic spills. There is no record or recollection of TCE from the vapor degreaser being drained directly onto the ground.

c. No one remembers any massive spills of TCE in the area. However, one past employee said TCE drums stored in front of the building occasionally leaked.

d. Use of TCE in Building 292 was discontinued in 1989 due to OSHA concerns. 1,1,1 trichloroethane is now used for vapor degreasing at that building. No 1,1,1 trichloroethane is discharged. It is either recycled or collected and disposed of as hazardous waste.

e. Other than Building 292, there are no historical records or recollections of any significant TCE usage at other buildings located in the IW80 drainage basin.

**ENCLOSURE(/)**

## II. Recent Wastewater Sampling

A map showing wastewater drainage to IW80 is shown in Attachment B. To narrow down our search for contamination we took additional volatiles samples on July 12, 1994. The sampling points were chosen to isolate the three major contributors to the outfall:

Point 1 - Drain pipe that leads from inside Building 292 to the manhole in front of the building.

Point 2 - Drain pipe that collects stormwater from the north-northwest side of the outfall and wastewater from Buildings 491 and 648.

Point 3 - Drain pipe that collects stormwater from the west side of the outfall and wastewater from Buildings 137, 268, 502, and 873.

The samples were taken during dry weather. During dry conditions the cooling and blowdown water that flows through point 3 makes up almost the entire IW80 discharge.

We expect laboratory results within one week. Based on where TCE is detected, we will likely take an additional set of wastewater samples to further isolate the area of contamination. We should know the general area of contamination via the sampling by the end of August.

## III. Soil and Groundwater Investigation

We have no existing soil or groundwater data for the area near Building 292. There was extensive soil and groundwater sampling done at sites 49, 50, 53, 54, and 55 upstream of IW80, and at site 41 further downstream of IW80 (see Attachment C) as part of the Installation Restoration (IR) program. TCE was only detected at site 41, the metal scrap yard. Groundwater contamination at that site ranged from 2 to 15 ppb. This contamination is probably from the past storage of inadequately rinsed drums rather than the potential contamination near Building 292. TCE has not been detected in any of our drinking water wells.

We plan to use a soil gas survey and hydropunching to expedite the search for possible soil and groundwater contamination. With these procedures, numerous, small diameter holes are pushed in the ground using a van-mounted hydraulic probe. For soil gas samples, vapor is collected from the soil pores and gases above the groundwater table. A small vapor sample is drawn through a sampling tube encased within the probe and analyzed.

For hydropunching, the probe is inserted to the water table for extraction of groundwater samples. If equipment is available, we plan to have the contractor use an on-site field laboratory for the analyses.

The Navy's Engineering Field Activity, Chesapeake, will contract this effort through an open-end contract with Brown and Root Environmental, Inc. Until the wastewater sampling is completed, we are unsure of the extent of soil gas surveys and hydropunching that will be required. Therefore, we are unable to provide a definite schedule at this time. We are working, however, to have the contract awarded by October 1, 1994.

The necessity for monitoring wells will be evaluated at the completion of the soil gas survey and hydropunching work.

#### **IV. Source Elimination**

Any cleanup of contamination associated with past practices will be handled under the National Contingency Plan (NCP) through the IR Program. If we are able to identify TCE soil or groundwater contamination, the best short term action would be to isolate it from the outfall to prevent further release into the environment. The most probable path is through cracks in the drainage pipe(s) or directly through one of the brick manholes located along the outfall. Inspection of the pipes would likely be done via TV camera as we recently did at outfall IW87 and for our sewer repair projects. Methods to isolate the TCE source from the outfall and eventually clean it up can not be adequately addressed until the source is located and characterized.

#### **V. Permitting**

We had notified Mr. Ed Gertler, of the Industrial Permits Section, of the TCE situation at IW80 in a June 17, 1994, letter. We also discussed permitting of TCE in a July 13, 1994, phone conversation. He explained that MDE may include a 100 ppb technology-based limit for TCE at IW80 in our new industrial wastewater permit. The permit application will be submitted by November 4, 1994. We expect MDE will issue the permit sometime in 1995. To continue monitoring the situation, we will likely conduct periodic TCE testing on our own until the permit is issued.

#### **VI. Summary**

We will provide periodic updates to this report as more information becomes available. In summary, we have plans in place to identify and locate the TCE source. Clean up plans will be addressed under that program once we determine where the TCE is and how much contamination is present.