N00174.AR.000270
NSWC INDIAN HEAD
5090.3a

DEPARTMENT OF THE NA
INDIAN HEAD DIVISION
NAVAL SURFACE WARFARE CENTER
101 STRAUSS AVE
INDIAN HEAD MD 20640-5035

5090
Ser 046C/183
8 Nov 99

Mr. Elmer Biles
6315 Indian Head Highway
Indian Head, MD 20640

Dear Mr. Biles:

We are forwarding the minutes from the Installation Restoration (IR) Program Restoration Advisory Board (RAB) meeting that was held on Thursday, October 21, 1999. The meeting was held at the Indian Head Senior Center, which is located at 100 Cornwallis Square, Indian Head, Maryland, 20640.

Please note that the RAB meetings for the year 2000 will be held on February 17, June 15, and October 19, 2000 from 7:00 - 9:00 p.m. at the Indian Head Senior Center. Please be sure to mark these dates on your calendar if you have not already done so.

Since the RAB meeting, we have received the validated results on the sampling that was performed at IR Site 47, Mercuric Nitrate Disposal Area. The data for the carbon tetrachloride and chloroform results in the shallow-groundwater monitoring wells are shown on the drawing in Attachment C of the meeting minutes. The highest concentration of carbon tetrachloride was found in monitoring well #3 (RI47GW03) at 270 parts per million (ppm). The highest concentration of chloroform was found in the same monitoring well at 57 ppm.

As shown on the same drawing, the second highest concentration of carbon tetrachloride and chloroform was found in monitoring well #4 (RI47GW04), both at a value of 6 ppm. Monitoring well #3 is about 5 feet south of the concrete pad at Building 856 and monitoring well #4 is approximately 90 feet south of the concrete pad at Building 856. In addition, the depth of the wells is approximately 25 feet. Additional information on this site and the sample results will be presented in the Remedial Investigation (RI) report. The draft RI report is scheduled for completion in December 1999.

The move of the Indian Head Division, General Library to Building 620 is not yet complete. Therefore, the Information Respository will not be available at the General Library for another two or three weeks.

5090
Ser 046C/183

As discussed during the RAB meeting, we are once again searching for additional RAB members. Information on the RAB and RAB membership can be found in Attachment F of the meeting minutes, including a RAB Membership Application. You can also find these items on our web page located at http://www.ih.navy.mil. Please pass this information along to anyone that you think might be interested in joining the RAB.

To those RAB members that have just completed their two-year term, we would like to thank you very much for putting in your time and effort to assist us with the IR Program. Since we have difficulty finding RAB members, we would appreciate it if you would consider staying on as RAB members. However, if you prefer not to remain on the RAB, please contact Mr. Shawn Jorgensen at (301) 744-6745 or email him at jorgensensa@ih.navy.mil by the end of December 1999.

We would also like to thank those community members that attended the meeting. We hope to see you all at the next RAB meeting on Thursday, February 17, 2000, at the Indian Head Senior Center.

If you have any additional comments or questions concerning these matters, you may contact Mr. Shawn Jorgensen on (301) 744-6745.

Sincerely,

CHERYL L. DESKINS
Director, Waste Management and
Prevention Division
By direction of the Commander

Encl:
(1) Minutes from RAB Meeting of 21 Oct 99

Copy to:
RAB Members
Meeting Attendees
Interested Parties

# INSTALLATION RESTORATION PROGRAM

**INDIAN HEAD DIVISION,**
**NAVAL SURFACE WARFARE CENTER**
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035

## RESTORATION ADVISORY BOARD (RAB) MEETING

**Date of Meeting:** October 21, 1999

**Restoration Advisory Board (RAB) Member Participants:**

Ms. Susan Adams (N)*
Mr. Elmer Biles (C)
Mr. Curtis DeTore (S)
Mr. John Groth (L)
for Ms. Karen Wiggon (L)
Mr. John McDevitt (C)
Mr. Robert Sadorra (N)

**RAB Members Not in Attendance:**

Ms. Celia Carroll (C)
Mr. Gary Davis (L)
Mr. Stephen Elder (L)
Mr. Vincent Hungerford (C)*
Mr. Dennis Orenshaw (F)
Mr. Fred Pinkney (F)

**Additional Attendees:**

Ms. Chris Adams (N)
Ms. Polly Blandford (C)
Mr. John Blandford (C)
Ms. Sherry Deskins (N)
Ms. Sharon Geil (C)
Mr. Russell Hamilton (C)
Mr. William Hudson (F)
Mr. Shawn Jorgensen (N)
Mr. Mark Yeaton (C,N)

* Co-Chair

**C** = Community
**F** = Federal Official
**L** = Local Official
**N** = Navy Official
**S** = State Official

**ENCL (1)**

**Major Issues Discussed/Accomplished:**

1. Meeting Introduction

Ms. Susan Adams of the Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC) began the meeting by welcoming everyone to the Indian Head Senior Center.

Ms. Adams then presented the meeting agenda, which is included as Attachment A.

2. IR Site 57 Remedial Investigation (RI) Report Status

Mr. Shawn Jorgensen of IHDIV-NSWC provided the status of the RI report for IR Site 57. Mr. Jorgensen provided a brief background of the site, including the fact that it was discovered when trichloroethylene (TCE) was found in Industrial Wastewater Outfall (IW) 80 at approximately 62 parts per billion (ppb).

The RI consisted of sampling soil, shallow groundwater, sediment and surface water to determine the extent of contamination in the IR Site 57 area and to determine the effectiveness of the removal action (pipe relining) that was conducted in October 1998. The fieldwork for IR Site 57 was completed in January 1999.

Additional samples needed to be taken in the pipe, since the original samples did not show a consistent increase or decrease in the concentration of TCE along the length of the pipe. The fluctuation was due to the fact that the samples obtained throughout the pipe were not obtained on the same day at the exact same time. Therefore, variations in water flow and temperature through the pipe contributed to the inconsistency of the data, which is not very useful in determining the effectiveness of the pipe liner.

Monthly samples are taken at the actual outfall location, where the TCE was originally discovered at 62 ppb. These samples are taken as part of our required National Pollutant Discharge Elimination System (NPDES) sampling. For the past few months, the sample results have remained near 20 ppb, one-third of the concentration originally found.

Results from resampling of the pipe are expected in December 1999, and the completed draft RI Report is expected in January 2000. In March 2000, a Feasibility Study (FS) will begin to evaluate alternatives for final remediation of the site.

To date, $818,000 has been spent on IR Site 57, including $220,000 for the recent RI work. The estimated cost of the upcoming FS is an additional $125,000.

A copy of Mr. Jorgensen's presentation is provided in Attachment B.

3. IR Site 47 RI Status

Mr. Jorgensen provided a brief background of IR Site 47 (Mercuric Nitrate Disposal Area) and discussed the RI fieldwork that began on July 6, 1999. This work included installing shallow groundwater monitoring wells and obtaining soil, sediment, and shallow groundwater samples.

The preliminary (not yet validated) results showed the presence of carbon tetrachloride and chloroform in the shallow groundwater at the site. The preliminary results also showed heavy metals, such as silver, lead, and mercury in the soil at the site and in the sediment in the ditch at the site. Validation of the data obtained at this site is expected to be completed in November 1999.

Plant personnel confirmed that carbon tetrachloride was used in Building 856 during the late 1960s and early 1970s. In addition, carbon tetrachloride breaks down in the environment to form chloroform.

The cost of the recent RI work at this site was approximately $100,000. An FS, which is scheduled to begin in November 2000, is budgeted at $125,000.

A copy of Mr. Jorgensen's presentation is included as Attachment C.

4. IR Sites 12, 41, and 42 Feasibility Study (FS)

Mr. Robert Sadorra of the Engineering Field Activity Chesapeake provided the status of the FS Report for IR Sites 12 (Town Gut Landfill), 41 (Scrap Yard), and 42 (Olsen Road Landfill).

The additional fieldwork that was needed to begin preparing the FS was completed on October 4, 1999. This additional work included digging test pits to determine the horizontal and vertical extent of the landfills and taking additional samples at the Scrap Yard to better define the location of contamination. The draft FS Report is expected to be completed in late January or early February 2000.

A copy of Mr. Sadorra's presentation is included in Attachment D.

5. Fiscal Year (FY) 2000 Budget and Schedule

Mr. Sadorra discussed the budget for FY2000 and the projects scheduled. The amount budgeted to IHDIV-NSWC for the IR program in FY2000 is over three million dollars. This is the largest amount ever allocated to the IHDIV-NSWC IR program in one year.

Mr. Sadorra briefly described the rigorous schedule of projects at IHDIV-NSWC for FY2000. These projects include preparing RI and FS work plans (prior to conducting fieldwork), conducting RI and FS fieldwork, and preparing RI and FS reports (after fieldwork has been completed) at various sites. Records of Decision (documenting the final remedy) and Remedial Designs (RD) will also be prepared for various sites. In addition, the work plan and fieldwork necessary to begin the ecological assessment of Mattawoman Creek is in the budget for FY2000.

Information concerning the work to be conducted on the sites and their costs can be found in Mr. Sadorra's presentation, Attachment E.

6. New RAB Member Drive

Ms. Adams stated that every two years we solicit new members for the RAB and the two-year period ends in February 2000. Therefore, we are looking for new RAB members. RAB members support the Navy IR Program in several ways. They review documents and provide comments to ensure that community concerns are appropriately addressed in all remediation efforts. In addition, they recommend priorities among sites and projects, and they serve as a conduit of information flow to and from the community.

Ms. Adams thanked all of our past RAB members and invited them to remain on the RAB for the next two years. She requested that any member that did not wish to continue to serve on the RAB to please inform Shawn Jorgensen by phone at (301) 744-6745, or FAX at (301) 744-4180, or email at jorgensensa@ih.navy.mil.

Copies of the RAB Fact Sheet, RAB Membership Fact Sheet, and RAB Membership Applications were available at the meeting and are included in Attachment F. Ms. Adams requested everyone to please pass this information on to anyone that may be interested in joining the RAB.

## 7. Additional Information

Ms. Adams reminded everyone that the Information Repositories contain additional information on all sites in the IR Program at IHDIV-NSWC. The Repositories are located at the IHDIV-NSWC General Library, which has recently moved from Building D-40 to Building 620, and at the Charles County Public Library, La Plata Branch. Complete addresses for these Information Repositories can be found in Attachment G.

Mr. Jorgensen announced that EPA Fact Sheets on both carbon tetrachloride and chloroform were available at the meeting. The fact sheets contain information on each of the chemicals including health-related information. Copies of these fact sheets are included in Attachment H.

Ms. Adams discussed a recent requirement set forth in the Safe Drinking Water Act Amendments of 1996. The amendment requires water providers to inform consumers of their drinking water quality. At IHDIV-NSWC, a 1999 Consumer Confidence Report was provided to everyone at the facility. The report states that the drinking water at IHDIV-NSWC is "safe to drink and is of higher quality than required by all state and federal standards for drinking water." Copies of the report were available at the meeting and a copy of the report is provided in Attachment I.

## 8. Comments, Questions, and Answers

Numerous comments were made and questions asked during the meeting. These comments, questions, and answers are provided in Attachment J.

## 9. Conclusion

Ms. Adams concluded the meeting by thanking all in attendance and announced the dates for the RAB meeting in the year 2000. The meetings will be held on February 17, June 15, and October 19, 2000. These days are all the third Thursday of the month. Ms. Adams informed everyone that the meetings would continue to be held in the Indian Head Senior Center from 7:00 to 9:00 p.m.

Ms. Adams then presented the tentative agenda for the next RAB meeting on February 17, 2000, which is included as Attachment K. She also stated that post card reminders and email reminders would be forwarded to RAB and community members prior to the meeting.

**INDIAN HEAD DIVISION,**
**NAVAL SURFACE WARFARE CENTER**
**INSTALLATION RESTORATION PROGRAM**
**RESTORATION ADVISORY BOARD (RAB) MEETING**
**AGENDA**

October 21, 1999

| | |
|---|---|
| 7:00 - 7:10 | ARRIVAL/WELCOME<br><br>Ms. Susan P. Adams<br>Indian Head Division, Naval Surface Warfare Center<br>Head, Safety Department |
| 7:10 - 7:25 | IR SITE 57 REMEDIAL INVESTIGATION (RI) REPORT STATUS<br><br>Mr. Shawn Jorgensen<br>Indian Head Division, Naval Surface Warfare Center<br>IR Project Manager |
| 7:25 - 7:40 | IR SITE 47 RI STATUS<br><br>Mr. Shawn Jorgensen |
| 7:40 - 8:00 | IR SITES 12, 41, AND 42 FEASIBILITY STUDY UPDATE<br><br>Mr. Robert Sadorra<br>Engineering Field Activity Chesapeake<br>Remedial Project Manager |
| 8:00 - 8:20 | FISCAL YEAR 2000 BUDGET AND SCHEDULE<br><br>Mr. Robert Sadorra |
| 8:20 - 8:30 | NEW RAB MEMBER DRIVE<br><br>Ms. Susan Adams |
| 8:30 - 9:00 | COMMENTS, QUESTIONS, AND ANSWERS |
| 9:00 | ADJOURN |

**Attachment A**

# NAVAL SURFACE WARFARE CENTER
# INDIAN HEAD DIVISION
# RESTORATION ADVISORY BOARD

## Remedial Investigation Report Status

*Site 57 - Building 292, Trichloroethylene (TCE)*

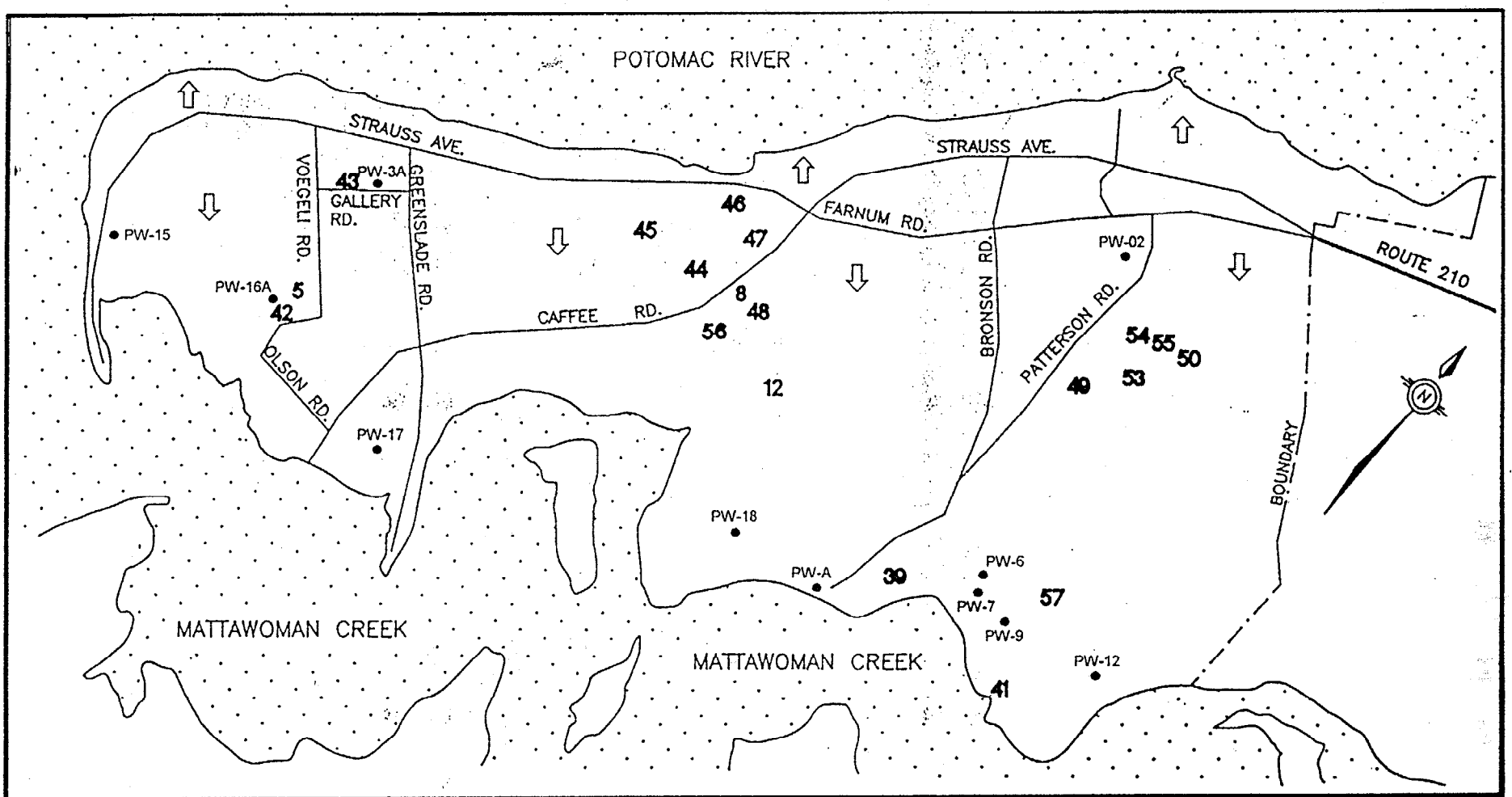
*Shawn Jorgensen*
*IR Project Manager*

*October 21, 1999*

Attachment B

# IR Site 57 Background

- *TCE discovered in IW-80*
- *Bldg. 292 used TCE for degreasing until 1989 and decanted TCE to drums located outside of the building near storm sewer manhole (MH-1)*
- *Sampling in MH-1 revealed TCE contamination while upstream manholes had no contamination*
- *Soil gas, soil, and groundwater sampling TCE in soil and groundwater*
- *Concern of TCE migration from groundwater infiltration into the storm sewer*



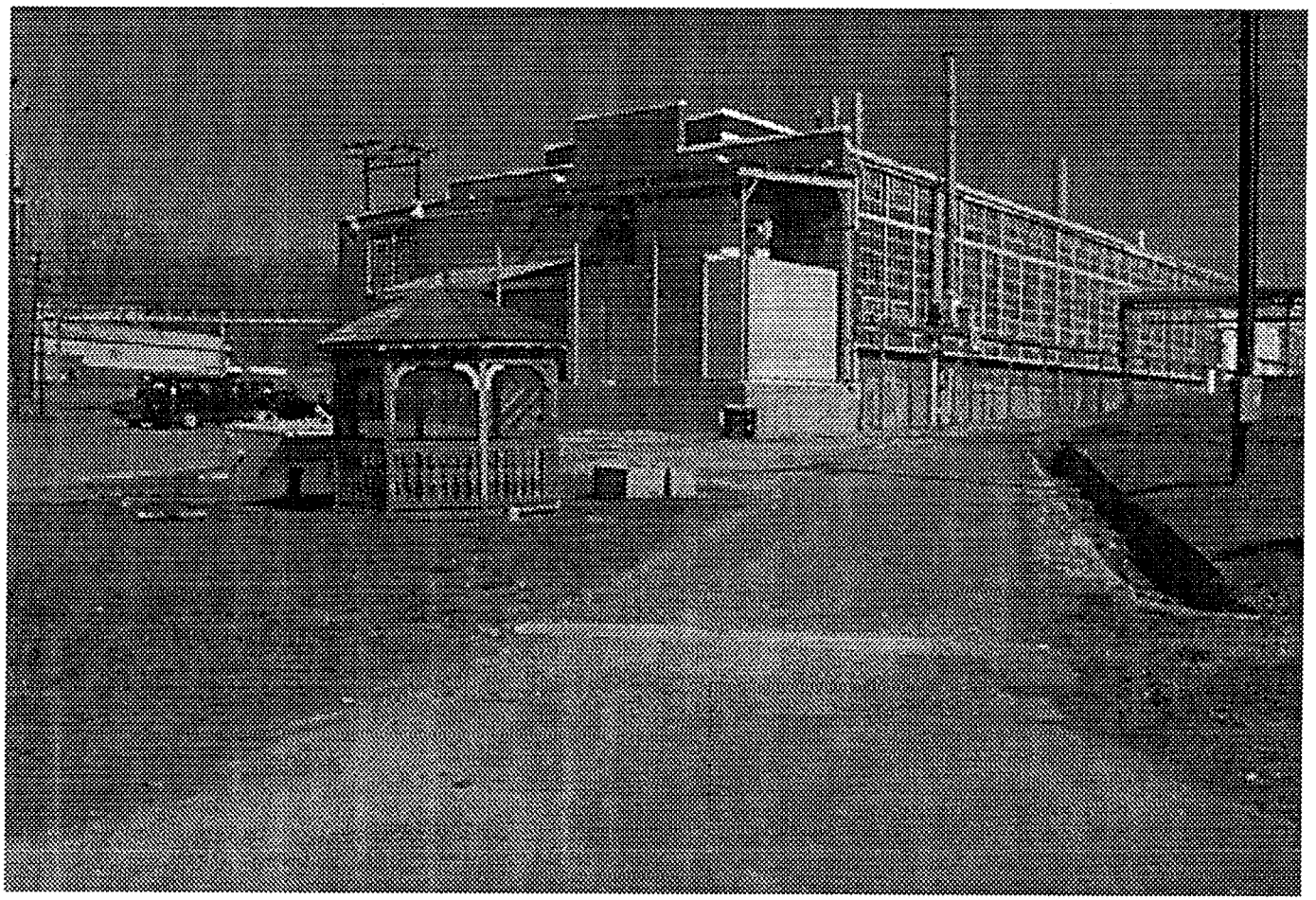

## LEGEND

| INSTALLATION RESTORATION SITES | |
|---|---|
| 5-SILVER IN SEDIMENT | 47-MERCURIC NITRATE DISPOSAL |
| 8-MERCURY IN SEDIMENT | 48-DUMP SITE |
| 12-TOWN GUT LANDFILL | 49-CHEMICAL DISPOSAL PIT |
| 39-ORGANICS PLANT | 50-BUILDING 103 |
| 41-SCRAP YARD | 53-GENERAL LABORATORY AREA |
| 42-OLSON ROAD LANDFILL | 54-BUILDING 101 |
| 43-TOLUENE DISPOSAL SITE | 55-BUILDING 102 |
| 44-SOAK OUT AREA | 56-LEAD IN SEDIMENT |
| 45-ABANDONED DRUMS | 57-TRICHLOROETHANE CONTAMINATION |
| 46-CADMIUM SANDBLAST GRIT | |

| OTHER RELATED INFORMATION | |
|---|---|
| PW-# | ARTESIAN (DEEP) WELLS |
| ⇩ ⇧ | GROUNDWATER (WATER TABLE) FLOW |

# INDIAN HEAD DIVISION
# NAVAL SURFACE WARFARE CENTER

# IR Site 57



# IR Site 57
# Work Completed

- *September 1995 - Limited sampling of soil-gas, soil, and groundwater conducted*
- *October 1996 - Draft Engineering Evaluation/Cost Analysis (EE/CA) completed (Soil Vapor Extraction)*
- *September 1997 - Pilot study conducted, SVE found unsuitable for remediation of the site*
- *June 1998 - Engineering Evaluation/Cost Analysis (EE/CA) Completed (storm sewer rehabilitation)*
- *September 1998 - Video inspection completed on storm sewer*

# IR Site 57
# Work Completed

- *October 1998 - Removal Action (pipe relining) completed*
- *October 1998 - Field work for Phase I RI (soil data) completed*
- *January 1999 - Field work for Phase II RI (groundwater, sediment, surface water) completed*
- *June 1999 - Draft RI Report - Data inconsistencies required resampling of relined pipe*
- *September 1999 - Pipe resampled*

# *IR Site 57*
# *Future Schedule*

- *December 1999 - Receive sample results (pipe samples)*
- *January 2000 - Complete Draft RI Report*
  - *Will contain all data obtained during fieldwork*
  - *Will evaluate effectiveness of Removal Action (pipe relining)*
- *March 2000 - Begin Feasibility Study to evaluate alternatives for final remediation of site*

# Site 57 Budget

- *Dollars Spent to-date on IR Site 57 - $818,000*
  - *Initial Investigation (Soil-Gas, soil, water) - $106,000*
  - *Removal of Soil for Loading Dock - $125,000*
  - *EE/CA and Treatability Study - $127,000*
  - *Removal Action - $240,000*
  - *Remedial Investigation - $220,000*
- *Cost of FS: $125,000*
  - *Scheduled to begin March 2000*

# NAVAL SURFACE WARFARE CENTER
# INDIAN HEAD DIVISION
# RESTORATION ADVISORY BOARD

## Remedial Investigation
## Project Status

*Site 47 - Mercuric Nitrate Disposal Area*

*Shawn Jorgensen*
*IR Project Manager*

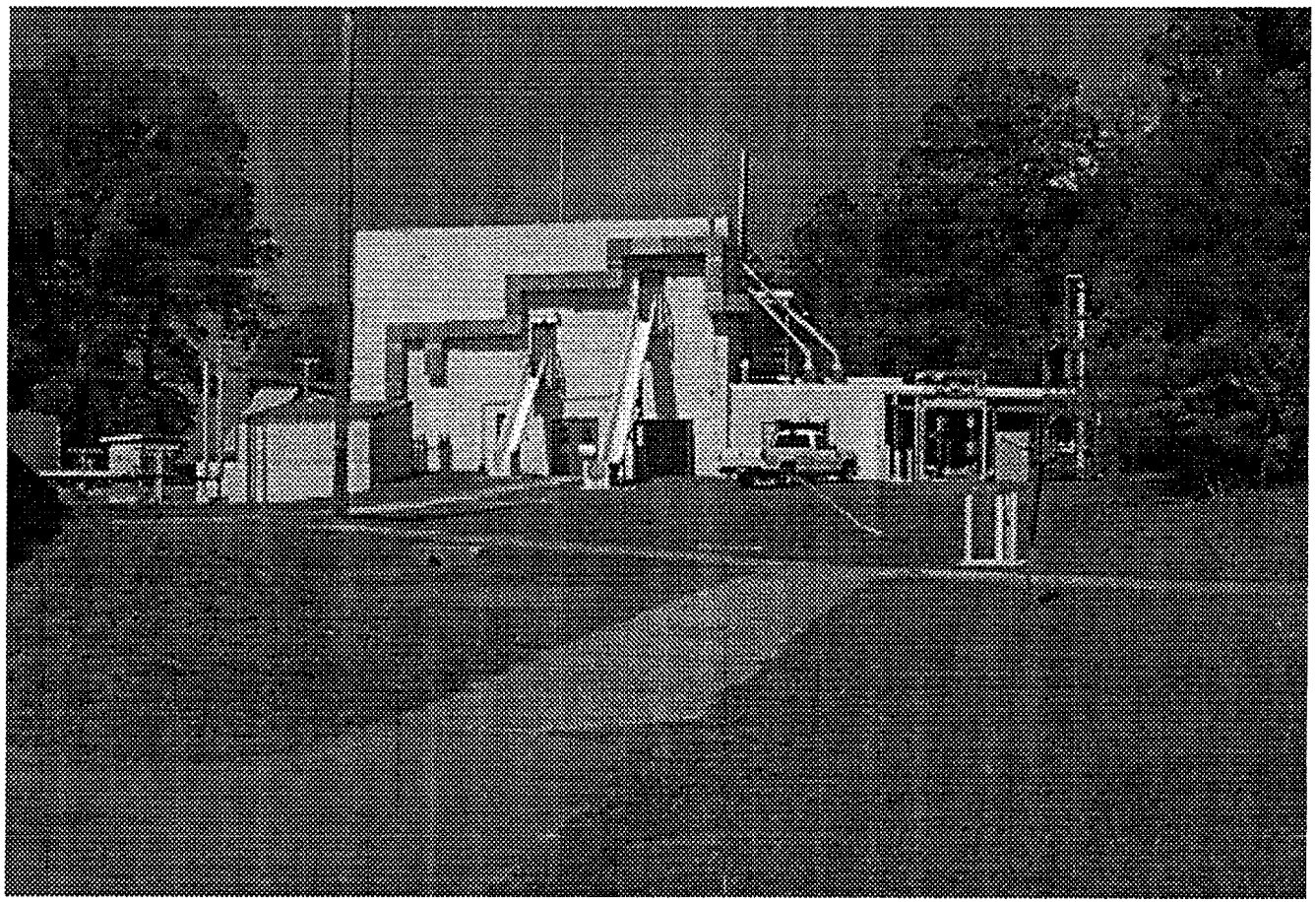
*October 21, 1999*

Attachment C

# Remedial Investigation Project
# Status - Site 47

- ***Background of Site 47 - Mercuric Nitrate Disposal Area***
  - *Mercuric Nitrate was disposed in area approximately 24 sq. ft.*
  - *Limestone chips used to neutralize spent nitric acid*
  - *Procedure carried out between 1957 and 1965*
  - *Initial sampling performed for Site Inspection (SI) in 1992 and 1993*
  - *Final SI Report (March 4, 1994) recommended further study*

# IR Site 47



# Remedial Investigation Project Status - Site 47

- ***Remedial Investigation Work at Site 47***
  - *Project awarded in November 98*
  - *Mobilization for field work began July 6, 1999*
  - *RI work included:*
    - *Installing 4 shallow groundwater monitoring wells around Building 856 and sampling the wells*
    - *Taking 10 surface soil samples from around Building 856*
    - *Taking 4 sediment samples from the ditch south of Building 856*
  - *Draft report expected in December 99*

# Remedial Investigation Project Status - Site 47

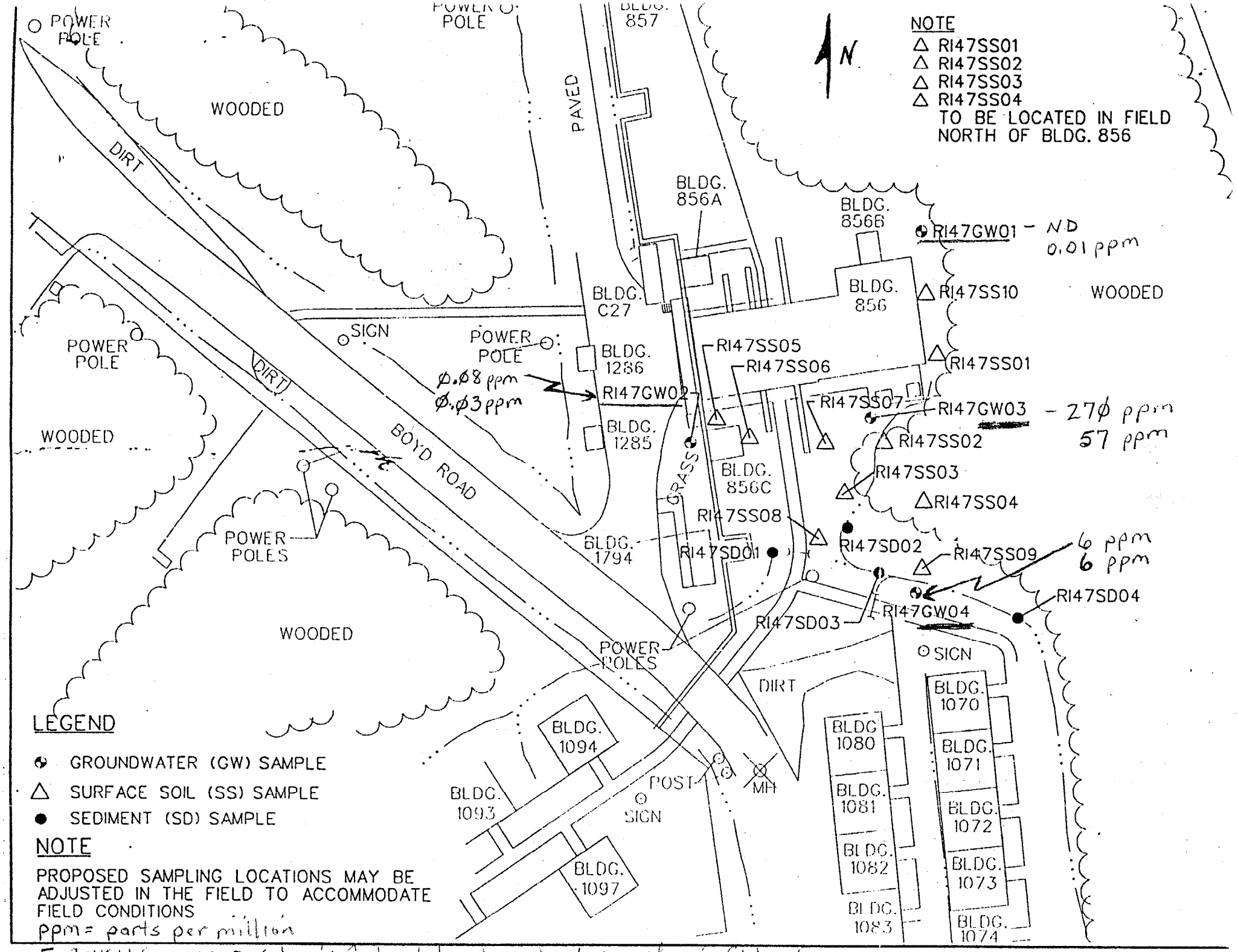
- ***Preliminary Sample Results[1] at Site 47***
  - *Shallow groundwater*
    - *Carbon Tetrachloride (monitoring wells 3 and 4)* [2]
    - *Chloroform (monitoring wells 3 and 4)*
  - *Soil*
    - *Some heavy metals, i.e, silver and lead*
  - *Sediment*
    - *Some heavy metals*

**1 Results have not been validated.**

**2 Plant personnel confirmed the use of carbon tetrachloride in Building 856 in the late 1960s and early 1970s.**

# *Site 47 Future Schedule and Budget*

- *Dollars Spent to-date on IR Site 47 - $100,000*
  - *Remedial Investigation - $100,000*
- *Cost of Feasibility Study - $125,000*
  - *Scheduled to begin November 2000*




FOR WELLS - upper value is Carbon tetrachloride, lower value is Chloroform

# NAVAL SURFACE WARFARE CENTER
# INDIAN HEAD DIVISION
# RESTORATION ADVISORY BOARD

## Feasibility Study Project Status

*Site 12 - Town Gut Landfill*
*Site 41 - Scrap Yard*
*Site 42 - Olson Road Landfill*

*Robert Sadorra, RPM*
*Engineering Field Activity Chesapeake*
*October 21, 1999*

Attachment D

# Feasibility Study Project Status
# Sites 12, 41, 42

**Purpose**

- *Describe, evaluate and compare alternatives*
- *Select Remedy*

**Tasks**

- *Alternative development*
- *Alternative evaluation and comparison*
  - *Overall protection of human health and the environment*
  - *Compliance with ARARs*
  - *Long-term effectiveness and permanence*
  - *Reduction of toxicity, mobility or volume through treatment*
  - *Short-term effectiveness*
  - *Implementability*
  - *Cost*
  - *State Acceptance*
  - *Community Acceptance*

# *Feasibility Study Project Status*
# *Sites 12, 41, 42*

- *Feasibility Study Field Investigation Work Plan completed May 1999*
  - *Fill engineering data needs*
  - *Obtain data for cost estimation*
- *Field work completed October 4*
  - *Site 12 - Town Gut Landfill*

    *Test Pits, Wetlands Delineation*
  - *Site 41 - Scrap Yard*

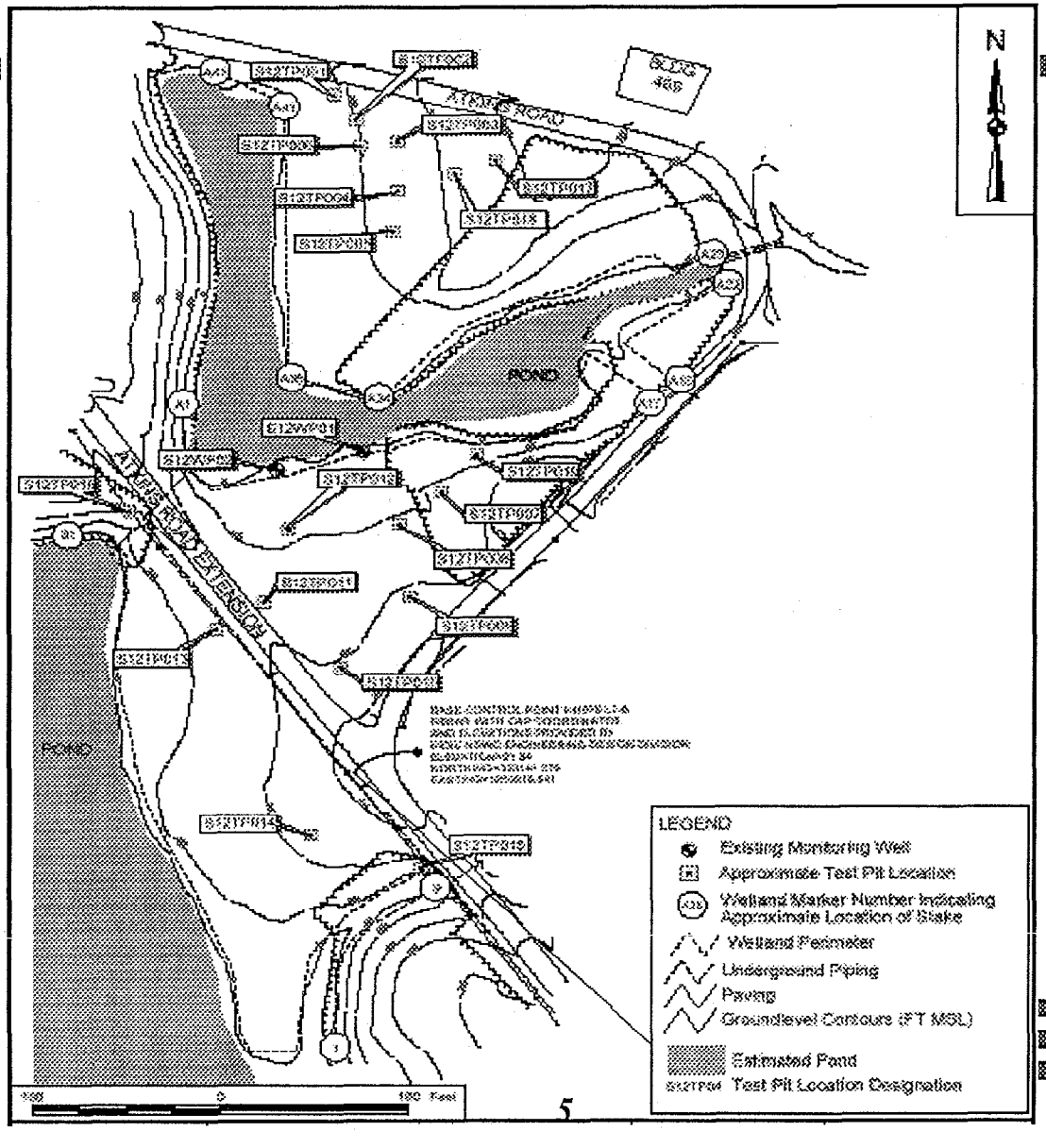
    *Surface Soil Sampling*
  - *Site 42 - Olson Road*

    *Test Pits, Sediment Sampling, Toxicity Tests, Wetlands Delineation*

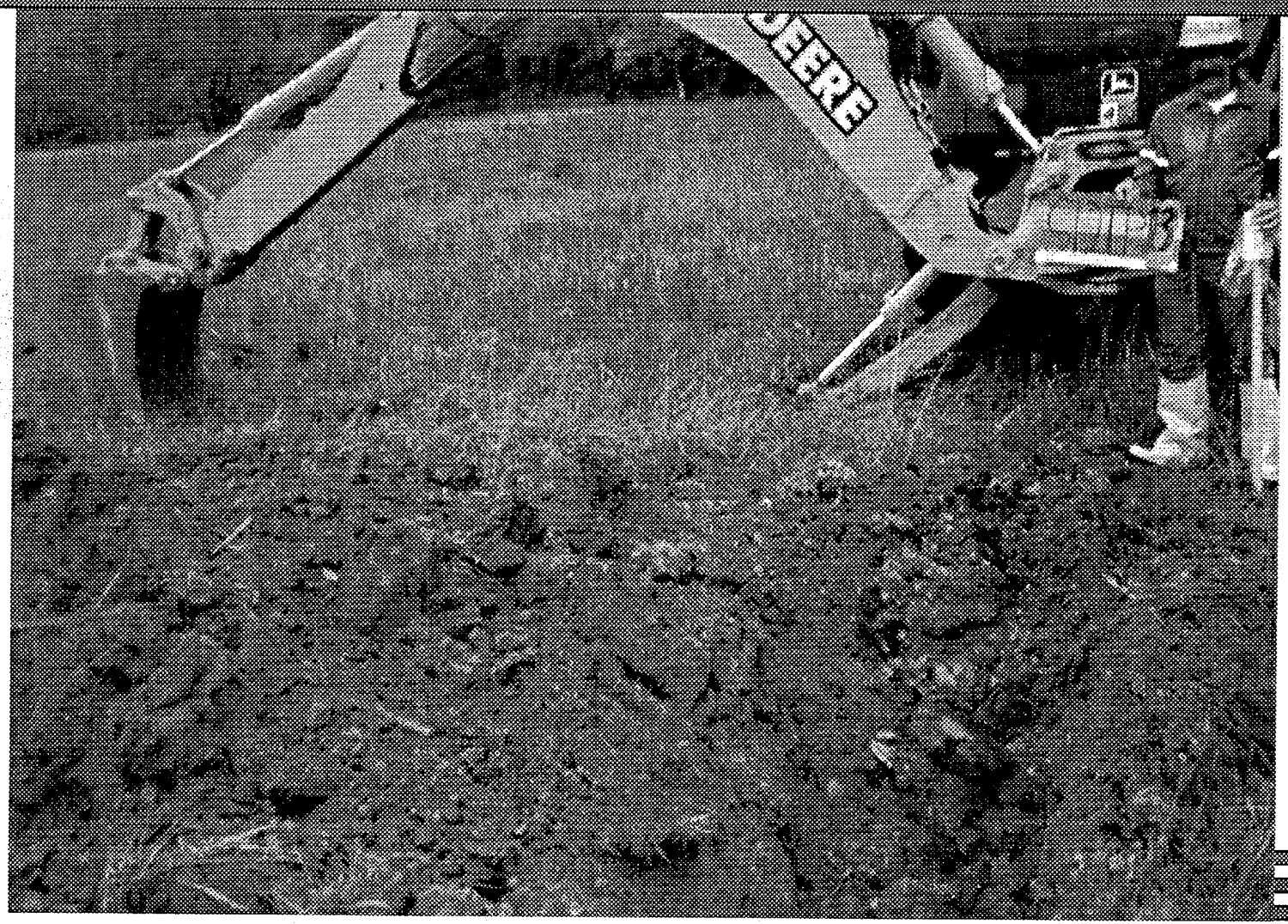
# Feasibility Study Project Status
# Site 12 - Town Gut Landfill

- *What is the horizontal extent of the landfill and how much of an existing soil cover is present above the underlying debris?*
  - *Test Pits*
- *What is the horizontal extent of wetlands that may be affected by a remedial action?*
  - *Onsite visual determination*

# Feasibility Study Project Status
# Site 12 - Town Gut Landfill



# *Feasibility Study Project Status*
# *Site 12 - Town Gut Landfill*
# *TP - 13*



# *Feasibility Study Project Status*
# *Site 12 - Town Gut Landfill*
# *TP - 18*

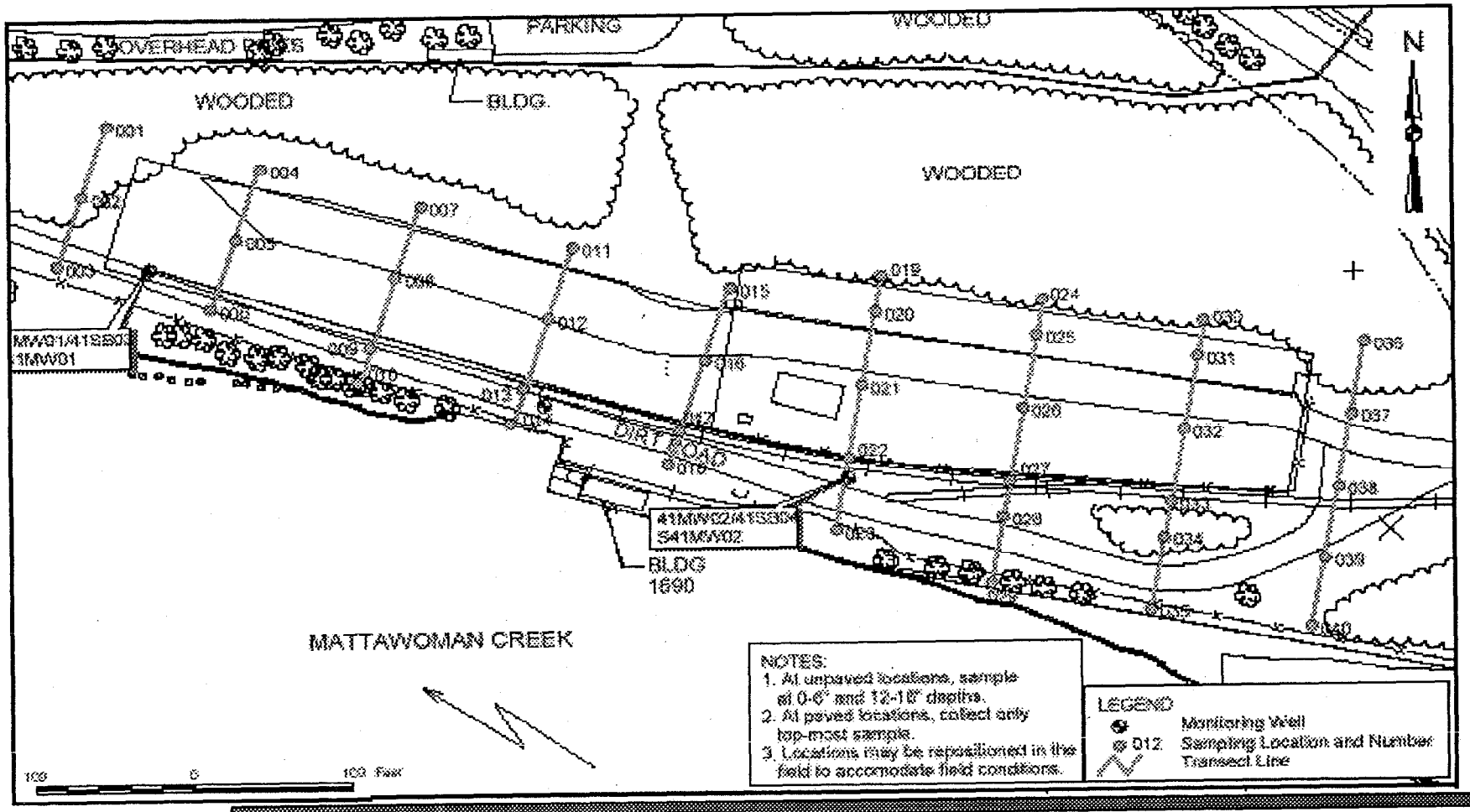
# *Feasibility Study Project Status*
# *Site 12 - Town Gut Landfill*
# *TP - 03*

# Feasibility Study Project Status
# Site 12 - Town Gut Landfill
# TP - 14

# *Feasibility Study Project Status*
# *Site 41 - Scrap Yard*

- *What is the extent of the surface soil contamination at the Scrap Yard?*
  - *Delineation with chemical specific sampling*
- *What is the horizontal extent of paved surface within the Scrap Yard perimeter?*
  - *Drive points selected in the field*

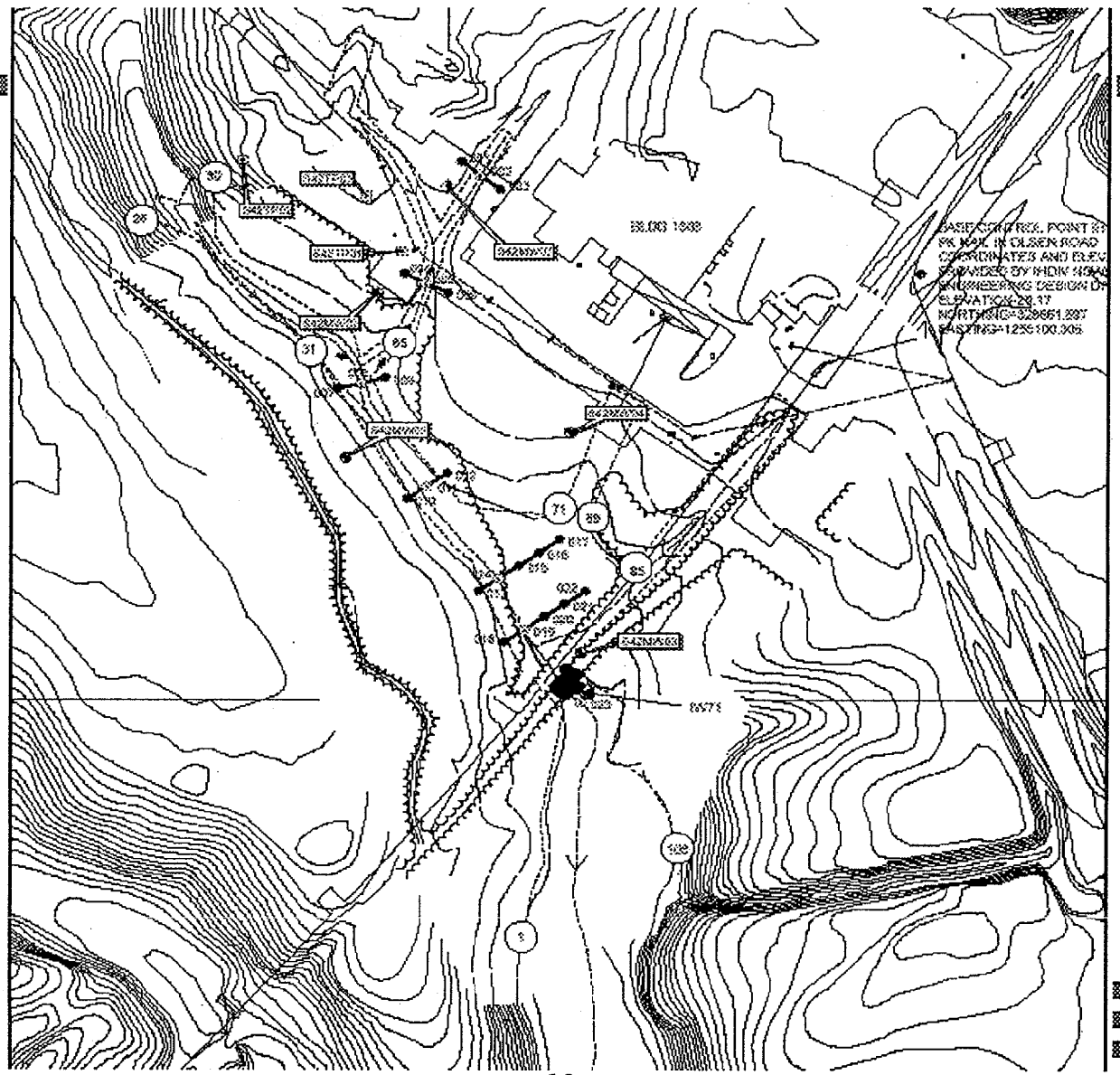
# Feasibility Study Project Status
# Site 41 - Scrap Yard



# *Feasibility Study Project Status*
# *Site 42 - Olson Road Landfill*

- *What is the horizontal extent of the landfill?*
  - *Test pits*
- *What is the extent of silver contamination in the creek?*
  - *Delineation with chemical specific sampling*
- *What concentration of silver is toxic to organisms?*
  - *Site specific toxicity testing*
- *What is the horizontal extent of wetlands that may be affected by a remedial action?*
  - *Onsite visual determination*

# Feasibility Study Project Status
# Site 42 - Olson Road Landfill



# *Feasibility Study Project Status*
# *Site 42 - Olson Road Landfill*
# *TP - 03*

# *Feasibility Study Project Status*
# *Sites 12, 41, 42*

- *Fieldwork completed October 4*
- *Draft report will be completed in approximately 3 months*

# FY 00 Planned Schedule and Budget

## NAVAL SURFACE WARFARE CENTER INDIAN HEAD DIVISION RESTORATION ADVISORY BOARD

*October 21, 1999*

*Robert Sadorra, RPM*
*Engineering Field Activity Chesapeake*

Attachment E

# FY 00 Planned Schedule and Budget

| Project Title | Expected Award | Budgeted Cost |
|---|---|---|
| Ecological Assessment of Mattawoman Creek<br>Work Plan / Field Work | 11/15/99 | $ 307,496 |
| Remedial Investigation – Sites: 49<br>Field Work / Report | 11/15/99 | $ 102,018 |
| Remedial Investigation – Sites: 53,15,16<br>Work Plan / Field Work / Report | 12/15/99 | $ 400,000 |
| Remedial Investigation – Sites: 11,13,17,21,25<br>Work Plan / Field Work / Report | 12/15/99 | $ 1,190,000 |
| Records of Decision and Remedial Design<br>Sites: 12, 41, 42, 44 | 12/15/99 | $ 750,000 |
| Feasibility Study – Site 57<br>Work Plan / Field Work / Report | 12/15/99 | $ 125,000 |
| Remedial Investigation – Sites: 6,39, 45,50, 54,55<br>Work Plan / Field Work / Report | 6/15/99 | $ 240,000<br>* swing |
| **Total** | | **$ 3,114,514** |

# Mattawoman Creek Schedule and Budget

- *Expected Award: 11/15/99*
- *Budget: $307,496*
- *Evaluate the effects of IR sites and other sources on the ecological health of Mattawoman Creek.*
- *Phase I - Chemical Screening*
- *Phase II - Toxicity and Benthic Analysis*

# RI Site 49
# Schedule and Budget

- *Expected Award: 11/15/99*
- *Budget: $102,018*
- *Site 49 - Chemical Disposal Pit*
  - *Located in the northeastern laboratory area*
  - *Circular concrete pit 2.5 feet in diameter and 3 feet deep*
  - *Pit was used to dispose of laboratory containers*
  - *Contents of the containers were collected in the bottom of the pit and drained from the pit via a drain line to the sanitary sewer system*
  - *RI will include smoke test to identify drainage outlets, sediment sampling around drainage outlets, removal of the concrete pit, and soil sampling beneath the pit.*

# RI Sites 53, 15, 16 Schedule and Budget

- *Expected Award: 12/15/99*
- *Budget: $400,000*
- *Site 53 - Mercury in the Sewage System*
  - *1909 - 1986, mercury was reported loss in the sewage system in the general laboratory area in the northeastern part of the Activity*
  - *RI will be phased to include research of the layout, video taping of the sewers, sampling plan development, field work and reporting.*
- *Site 15 - Mercury Deposits in Manhole, Fluorine Lab*
- *Site 16 - Laboratory Chemical Disposal*

# RI Sites 11,13,17,21,25 Schedule and Budget

- *Expected Award: 12/15/99*
- *Budget: $1,190,000*
- *Site 11 - Caffee Road Landfill*
- *Site 13 - Paint Solvents Disposal Ground*
- *Site 17 - Disposal of Metal Parts along the Shoreline*
- *Site 21 - Bronson Road Landfill*
- *Site 25 - Hypo Discharge X-ray Bldg. No. 2*

# ROD/RD Sites 12,41,42,44 Schedule and Budget

- *Expected Award: 12/15/99*
- *Site 12 - Town Gut Landfill*
- *Sites 41 - Scrap Yard*
- *Site 42 - Olson Road*
- *Site 44 - Soak Out Area*
- *Budget: $750,000*

# FS Site 57
# Schedule and Budget

- *Expected Award: 12/15/99*
- *Budget: $125,000*
- *Site 57 - Building 292 TCE Contamination*
  - *Begin a feasibility study to evaluate alternatives for final remediation of the site*

# RI Sites 6,39,45,50,54,55 Schedule and Budget

- *Expected Award: 6/15/99 swing*
- *Budget: $240,000*
- *Site 6 - Building 1349, Hypo Spill*
- *Site 39 - Organics Plant*
- *Site 45 - Abandoned Drums*
- *Site 50 - Building 103 Crawl Space*
- *Site 54 - Building 101*
- *Site 55 - Building 102*

# INSTALLATION RESTORATION PROGRAM

INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035

## RESTORATION ADVISORY BOARD (RAB) MEMBERSHIP FACT SHEET

**RAB Membership Requirements:**

RAB members should live or work in or near the Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC). To ensure opinions about environmental restoration reflect diverse interests within the local community, RAB membership should include, but is not limited to:

* Local residents and community members
* Local reuse committees
* Local officials/agencies
* Business community
* School districts
* IHDIV-NSWC employees/residents
* Local environmental groups/activities
* Civic/public interest organizations
* Religious community
* Other regulatory agencies
* Labor organizations
* Local homeowners organizations
* Federal and State environmental agencies

The majority of RAB members should be from the local community in keeping with the goal of increased public involvement.

Once selected, RAB members will be provided initial orientation to enable them to perform their duties.

**Responsibilities of RAB Members:**

RAB members are expected to:

- Identify and review project requirements
- Provide comments on actions and proposed actions involving releases or threatened releases at IHDIV-NSWC from past operations
- Review documents and provide timely comments
- Recommend priorities among sites or projects
- Identify applicable standards
- Review budget information
- Attend RAB meetings. If a member fails to attend two consecutive meetings, he/she may be asked to relinquish his/her membership
- Report back to organized groups to which they belong or represent and serve as a conduit for information flow to and from the community
- Serve in a voluntary capacity for two years
- Be available to community members and groups to facilitate the exchange of information and/or concerns between the community and the RAB

**Responsibility of the RAB Community Co-Chair**

The RAB Community Co-Chair shall:

- Ensure community issues and concerns related to environmental restoration/cleanup are discussed
- Assist IHDIV-NSWC in communicating technical information in understandable terms
- Assist in passing on information to the public
- Coordinate with IHDIV-NSWC to prepare and distribute meeting agendas prior to each RAB meeting
- Work with the Navy Co-Chair to review and distribute RAB meeting minutes

# INSTALLATION RESTORATION PROGRAM

**INDIAN HEAD DIVISION,**
**NAVAL SURFACE WARFARE CENTER**
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035

## RESTORATION ADVISORY BOARD (RAB) FACT SHEET

### Background

The Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC) has always been committed to ensuring that Indian Head is a safe and healthy place to work and live. In 1981, although not required by Federal law, the Navy began its own cleanup campaign to restore sites impacted by past operations to their original condition. This program ultimately became known as the Navy Installation Restoration (IR) program.

As part of the Navy's IR Program, a Technical Review Committee (TRC) was formed at IHDIV-NSWC in 1991, to inform members of our local community about the cleanup of former operating sites and to solicit their opinions and concerns with these issues. The TRC served as a forum to discuss problems with restoration efforts, and more importantly, to discuss concerns and obtain workable solutions that were satisfactory to all members of the TRC.

In 1994, the Department of the Navy expanded community participation by converting TRCs into Restoration Advisory Boards (RABs).

### What is a RAB?

The RAB is a group established to allow individuals the opportunity to give advice to IHDIV-NSWC on their restoration program and to act as a focal point for the exchange of information between IHDIV-NSWC and the Indian Head community. The RAB is intended to bring together community members who reflect the diverse interests of the area, enabling the early and continued two-way flow of information, concerns, values, and needs between the community and IHDIV-NSWC.

The RAB works in partnership with IHDIV-NSWC on cleanup issues and related matters.

RABs do not make decisions on environmental restoration activities, but provide information, suggestions, and community input to be used by IHDIV-NSWC in making decisions on actions and proposed actions involving releases or threatened releases and cleanups of former operating sites.

### How the RAB was Established

The RAB was established from the TRC by:

* Expanding the TRC to include additional community representatives;
* Establishing Co-Chairs, one from the community and one from IHDIV-NSWC; and
* Opening meetings to the public.

### Responsibilities of a RAB

The RAB shall:

- Conduct regular meetings, open to the public, at convenient times and locations;
- Keep meeting minutes, make them available to interested parties, and announce their availability in a local newspaper;
- Develop and use a mailing list of names and addresses of interested parties who wish to receive information on the cleanup program;
- Provide a forum for individual members to give advice and make recommendations on environmental restoration issues to IHDIV-NSWC (RABs will not vote on issues or make recommendations as a body); and
- Establish a procedure for public participation

# RESTORATION ADVISORY BOARD

## MEMBERSHIP APPLICATION

NSWC
Naval Surface Warfare Center
INDIAN HEAD DIVISION

## Indian Head Division, Naval Surface Warfare Center

**Conditions for Membership:**

Restoration Advisory Board (RAB) members shall serve a term of two years (if possible) and attend all RAB meetings. Members who miss two or more consecutive meetings may be asked to resign. Members must be able to attend approximately three meetings per year on Thursday evenings and agree to have their name, address, home and work phone numbers provided to the community. Duties and responsibilities will include reviewing and commenting on technical documents and activities associated with the environmental restoration of the Indian Head Division, Naval Surface Warfare Center. Members will be expected to be available to community members and groups to facilitate the exchange of information and/or concerns between the community and the RAB.

*NOTE: Local residents will be preferred for RAB membership. The number of RAB members is limited.*

Name: _____

Address: _____
Street Apt. # City State ZIP

Phone: ( ) _____ ( ) _____ Fax: ( ) _____
Work Home

Profession: _____

1. Please list any organizations or group affiliations with which you are associated. (Volunteer, church, etc.)

_____

_____

2. Are you able to meet the requirements of the Conditions for Membership above? ____Yes ____No

3. How long have you lived in this community? _____ Years
How long have you worked in this community? _____ Years
Have you ever worked at IHDIV, NSWC? ____Yes ____No

4. Briefly state why you would like to be considered for membership on the Restoration Advisory Board (RAB):

_____

_____

5. By submitting this signed application, you willingly agree to work cooperatively with other members of the committee to ensure efficient use of time for addressing community issues related to environmental restoration of the Indian Head Division, Naval Surface Warfare Center.

_____ _____
Applicant Signature Date

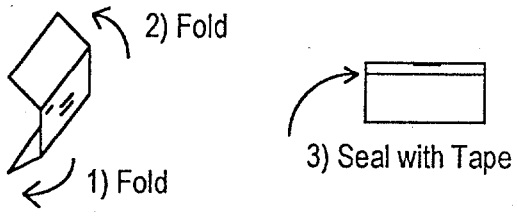
NOTE: Applications must be completed and returned by **December 24, 1999,** to be considered for membership on the RAB!

**Please fold, as shown on reverse side, add stamp, seal, and drop in any mailbox, or FAX to (301) 744-4180.**

2) Fold Here

INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER
ATTN: CODE 046, BLDG D-327
101 STRAUSS AVENUE
INDIAN HEAD, MD 20640-5035

1) Fold Here 3) Seal Here



# Installation Restoration Information Repositories

NAVAL SEA SYSTEMS COMMAND
NSWC
Naval Surface Warfare Center
Indian Head Division

## Location of Information Repositories

Indian Head Division
Naval Surface Warfare Center
Building 620 (Powder Keg)*
101 Strauss Avenue
Indian Head, MD
20640-5035

Charles County Public Library
La Plata Branch
Charles & Garrett Streets
La Plata, MD 20646

* New location scheduled to open November 1, 1999.

Attachment G

# EPA Facts About *Carbon Tetrachloride*

June 1992

## What is carbon tetrachloride?

Carbon tetrachloride ($CCl_4$) is a clear, heavy liquid with a sweet odor. Because it evaporates very quickly, most $CCl_4$ that escapes into the environment is found in the air as a gas. Small amounts can also be found dissolved in water.

$CCl_4$ does not occur naturally. It is produced in large quantities to make refrigerants and propellants for aerosol cans. Since these products have been found to affect the earth's ozone layer, production of these chemicals is being phased out. Consequently, the manufacture and use of $CCl_4$ will also tend to decline.

In the past, $CCl_4$ was widely used as a cleaning fluid, both in industry, where it served as a degreasing agent, and in the household, where it was used to remove spots from clothing, furniture, and carpeting. Because $CCl_4$ does not burn, it was also used in fire extinguishers. These uses were discontinued in the mid-1960s. Until recently, $CCl_4$ was used to fumigate grain, but this was stopped in 1986.

$CCl_4$ is very stable and, therefore, remains in the environment. Although it is broken down by chemical reactions in air, this happens so slowly that it takes between 30 and 100 years for one-half of the original amount of $CCl_4$ to be destroyed.

## How might exposure to carbon tetrachloride occur?

Past and present releases of $CCl_4$ have resulted in low levels of this compound being dispersed throughout the environment. In air, concentrations of 0.1 parts per billion (ppb) are common around the world, with somewhat higher values (0.2 to 0.6 ppb) in cities. The term "parts per billion" is a way of expressing the concentration of a contaminant in a liquid or air. One part per billion is equal to one inch in a distance of about sixteen thousand miles, or a penny in ten million dollars, a very small amount. $CCl_4$ is also found in some drinking water supplies, usually below 0.5 ppb. Exposure to levels of $CCl_4$ higher than these typical *background levels* may occur at industrial locations where $CCl_4$ is still used or near waste sites where releases into air, water, or soil are not properly controlled. Exposure from such sites could occur by breathing $CCl_4$ in air, by drinking water contaminated with $CCl_4$, or by getting contaminated soil on the skin. $CCl_4$ has been found in water or soil at about 7% of the waste sites investigated under *Superfund*, at concentrations from less than 50 to over 1,000 ppb.

## How can carbon tetrachloride affect human health?

Exposure to high levels of $CCl_4$ can cause a number of harmful health effects, including death. The most immediate health effects usually involve the brain. Common effects are headaches and dizziness, along with nausea and vomiting. In severe cases, stupor or even coma may result. These effects usually disappear within a day or two following exposure, but permanent damage to nerve cells may occur in severe cases.

The liver is especially sensitive to $CCl_4$. In mild cases, the liver becomes swollen and tender, and fat tends to build up inside the tissue. In severe cases, many cells may be killed, leading to decreased liver function.

The kidneys are also sensitive to $CCl_4$, with the main effect being a decrease in urine formation. This can lead to accumulation of water in the body (especially in the lungs) and buildup of waste products in the blood. Kidney failure is often the main cause of death in people who die as a result of exposure to $CCl_4$.

Fortunately, if injuries to the liver and kidneys are not too severe, these effects disappear once exposure ceases. This is because both organs can repair damaged cells and replace dead tissue. Function is often nearly normal within a few days or weeks following exposure. $CCl_4$ also causes harm to other tissues in the body, but this is not usually as important as the effects on the liver, kidneys, and brain. Limited information from animal studies indicates that $CCl_4$ does not cause birth defects, but might decrease the survival rate of newborn animals. Most information on the health effects of $CCl_4$ in humans stems from cases in which individuals have been exposed only once or for a short period of time to relatively high levels of the chemical. Studies of the effects of long-term exposure to low levels of $CCl_4$ on humans have not been performed and the effects of such exposures are unknown.

Attachment H

## Is there a medical test to identify carbon tetrachloride exposure?

Several very sensitive and specific tests can detect $CCl_4$ in exposed persons. The most convenient way is simply to measure $CCl_4$ in exhaled air; $CCl_4$ can also be measured in the blood, fat, or other tissues. Because special equipment is needed, these tests are not routinely performed in doctors' offices. Although these tests can identify exposure to $CCl_4$, the test results cannot yet be used to predict harmful health effects. Because $CCl_4$ is removed from the body fairly quickly, these methods are best suited to detection of exposures that have occurred within the past several days.

## How can carbon tetrachloride enter and leave the body?

Carbon tetrachloride can enter the body through the lungs by breathing air containing $CCl_4$, or through the stomach by swallowing food or water containing $CCl_4$. Liquid $CCl_4$ can also pass through the skin into the body. Most $CCl_4$ is exhaled through the lungs within a few hours. Some $CCl_4$ in the body is temporarily absorbed by fat, and is then removed more slowly by the lungs.

## What recommendations has the federal government made to protect human health?

The federal government has limited or banned the use of $CCl_4$ in most common household products and fire extinguishers, and has discontinued its use as a grain *fumigant*. The U.S. Environmental Protection Agency (EPA) has also set limits on the amount of $CCl_4$ released from an industrial plant into waste water, and is preparing to set limits on the amounts of $CCl_4$ released into outside air. One additional case of cancer may result in a group of 100,000 people exposed to $CCl_4$ in concentrations above 4 parts per billion in air or water over a period of 70 years.

## What levels of exposure have resulted in harmful health effects?

Not all people are affected equally by exposure to $CCl_4$. Individuals who drink alcohol are usually much more susceptible than people who do not. Most serious or fatal cases of $CCl_4$ *toxicity* have involved people who have had several alcoholic drinks before or during exposure to $CCl_4$.

### GLOSSARY

*Background Levels:* The concentration of any substance which would normally be found in an area. This level is used as a basis of comparison in identifying contamination levels.

*Fumigant:* Substance producing fumes used to disinfect or to destroy pests.

*Superfund Program:* The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) that funds the EPA solid waste emergency and long-term removal and remedial activities.

*Toxicity:* The degree to which a substance acts as a poison.

For more information about Carbon Tetrachloride, please contact EPA at the following address:

*U.S. Environmental Protection Agency*
*ATTN: Superfund Hotline*
*401 M Street, S.W.*
*Washington, D.C. 20460*
*1-800-424-9346 or 1-800-535-0202*

The information contained in this fact sheet was compiled from the Toxicological Profile for Carbon Tetrachloride, Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, in collaboration with the U.S. Environmental Protection Agency, December 1989. *This fact sheet focuses on the impact of hazardous wastes on human health; however, EPA does evaluate these impacts on the environment, including plants and animals.*

# EPA Facts About *Chloroform*

June 1992

## What is chloroform?

Chloroform is a colorless liquid with a pleasant odor. It is both a naturally-occurring and a man-made compound, or combination, of several chemicals. Most of the chloroform manufactured in the United States (93%) is used to make fluorocarbon-22, which is used in the production of fluoropolymers and as a cooling fluid in air conditioners. It is also used in the manufacture of pesticides and dyes, and in such products as fire extinguishers, dry cleaning spot removers, and various solvents.

## How might exposure to chloroform occur?

Chloroform released to soil will either vaporize rapidly from the surface or *leach* readily through the soil, eventually entering groundwater. It is believed to persist for relatively long periods of time in groundwater. Exposure to chloroform can result from breathing air or ingesting drinking water, beverages, or foods contaminated with chloroform. Exposure may also occur during skin contact with various consumer products containing this compound or from exposure to chlorinated waters, for example, bath water and swimming pool water.

The primary sources of chloroform release to the environment are pulp and paper mills, drug and chemical manufacturing plants, chlorinated wastewater from sewage treatment plants, and chlorinated drinking water. Pulp and paper mills emit more chloroform to the environment than any other single source. Most of the chloroform released to the environment eventually enters the atmosphere. Once in the atmosphere, chloroform may be transported long distances before ultimately being degraded by *photochemical reaction*. Much smaller amounts enter groundwater as the result of filtration through the soil. Chloroform leaches into groundwater primarily from spills, landfills, and industrial sources. Chloroform in soil may come from improper land disposal of waste materials containing chloroform or other chlorine-containing compounds that are broken down to form chloroform.

## How does chloroform enter the body?

Chloroform can enter the body by breathing air, eating food, or drinking water that contains chloroform. Chloroform readily penetrates the skin, therefore, chloroform may also enter the body by bathing in water containing chloroform. Foods such as dairy products, seafood, meat, vegetables, bread, and beverages may contain small, but measurable, amounts of chloroform. Drinking-water supplies containing organic contaminants may contain chloroform as a by-product of chlorination of the water supply for disinfection purposes.

## Is there a medical test to identify chloroform exposure?

Chloroform can be detected in blood, urine, and body tissues; however, because chloroform is rapidly eliminated from the body, these methods are not very reliable. In addition, the presence of chloroform may have resulted from the biological breakdown of other chlorine compounds. An elevated level of chloroform may reflect exposure to these other compounds.

## How can chloroform affect human health?

Chloroform affects the central nervous system, liver, and kidneys. It was once used as a surgical anesthetic before its harmful effects on the liver and kidneys were recognized. Short-term exposure to high concentrations of chloroform in the air causes tiredness, dizziness, and headaches. Longer-term exposure to high levels of chloroform can affect liver and kidney function. Toxic effects may include jaundice and burning urination. High doses of chloroform have also been found to cause liver and kidney cancer in experimental animals. The risks of cancer, if any, from low-level exposures to chloroform in drinking water as a result of chlorination, however, are far outweighed by the benefits of chlorination in terms of the greatly decreased incidence of *waterborne diseases.*

## What levels of exposure have resulted in harmful health effects?

Based on available data for animals, the U.S. Environmental Protection Agency (EPA) has estimated that exposure to 1 part per billion (ppb) chloroform in air may result in 2.3 additional cases of cancer in a population of 100,000 people exposed over a period of 70 years. Exposure to drinking water containing 10 ppb chloroform may result in 17 additional cases of cancer in a population of 100,000 people exposed over a period of 70 years. The term "parts per billion" is a way of expressing the concentration of a contaminant in a liquid or air. One part per billion is equal to one inch in a distance of about sixteen thousand miles (or a penny in ten million dollars), a very small amount.

## What recommendations has the federal government made to protect human health?

EPA sets rules for the amount of chloroform allowed in water. EPA has established a drinking water *Maximum Contaminant Level (MCL)* for total trihalomethanes, a group of chemicals which includes chloroform, of 0.1 ppm as a technically and economically feasible level for municipal water supplies which serve 10,000 people or more. In addition, the Agency requires that chloroform spills of 10 pounds or more be reported to the National Response Center.

## What are the methods of treatment and disposal of chloroform?

EPA requires that individuals who generate, transport, treat, store, or dispose of this compound comply with the regulations of the Resource Conservation and Recovery Act. One method used to dispose of chloroform involves *sedimentation* followed by filtration and *adsorption* onto activated carbon. Chloroform can be disposed of by incineration, preferably after it is mixed with another combustible fuel.

## GLOSSARY

*Adsorption:* A treatment method which uses activated carbon to remove organic matter from wastewater.

*Leach:* To pass through the soil due to rain or groundwater moving through contaminated materials. The process by which substances are released from the soil by dissolving in fluids, usually rain and surface water, and are carried down through the soil. Leaching can cause hazardous substances to enter the soil, surface water, or groundwater.

*Maximum Contaminant Level (MCL):* EPA evaluates the health risks associated with various contaminant levels to ensure that public health is adequately protected. The MCL, as it is commonly known, is the maximum allowable concentration of a specific contaminant in public drinking water.

*Photochemical Reaction:* A chemical change caused by the action of light on a substance.

*Sedimentation:* The settling of solids out of wastewater by gravity during wastewater treatment.

*Waterborne Diseases:* Diseases caused by organisms spread in water; for example, amoebic dysentery and cholera.

For more information regarding Chloroform, please contact EPA at the address shown below:

*U.S. Environmental Protection Agency*
*ATTN: Superfund Hotline*
*401 M Street, S.W.*
*Washington, D.C. 20460*
*1-800-424-9346 or 1-800-535-0202*

The information contained in this fact sheet was compiled from the Toxicological Profile for Chloroform, Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, in collaboration with the U.S. Environmental Protection Agency, January, 1989. *This fact sheet focuses on the impact of hazardous wastes on human health; however, EPA does evaluate these impacts on the environment, including plants and animals.*

NAVAL SEA SYSTEMS COMMAND

NSWC

Naval Surface Warfare Center

Indian Head Division

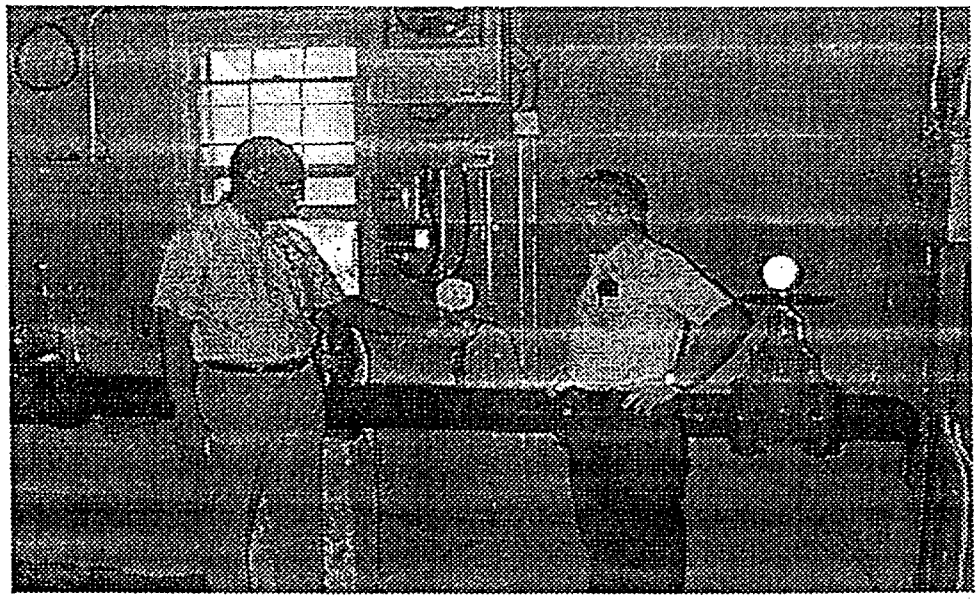
# 1999 CONSUMER CONFIDENCE REPORT

A Closer Look at Water Quality

Indian Head Division, Naval Surface Warfare Center
Indian Head, Maryland 20640-5035

## Our water is safe, it is reliable and we are working to make it even better.

Our tap water, provided by the Public Works Department, Utilities Division, is safe to drink and is of higher quality than required by all state and federal standards for drinking water.



Public Works personnel, D. Stewart and B. Coulby check gauges at well #18.

♦ The primary regulation that ensures that public health and safety is protected in drinking water supplies is the Safe Drinking Water Act (SDWA). This Consumer Confidence Report, part of the provisions of the Safe Drinking Water Act Amendments of 1996, has been developed to keep you informed about the quality of your drinking water and will be updated yearly.

♦ This Consumer Confidence Report will explain where your water comes from and how it is treated. It contains charts to show that your water meets all state and federal standards.

♦ Groundwater from 9 Indian Head wells and 2 Stump Neck wells supply our water needs. The groundwater sources of these 285 to 500 feet deep wells are the Patapsco and Patuxent aquifers.

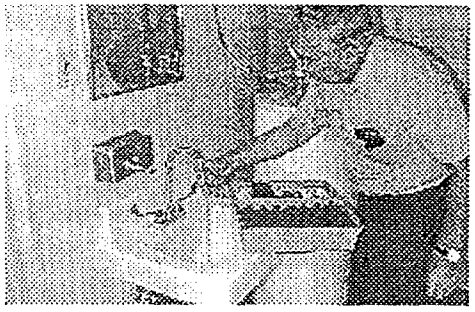
♦ An aquifer is an underground geologic formation of sand, gravel or rock through which water can pass and is stored. Because the layers of sand, gravel and rock provide a natural filtration, groundwater is usually clear when it is pumped out of the ground; thus, it can be disinfected without prior treatment. Our wells are deep wells and are protected by these layers from most contaminants and bacteria.

♦ As water is pumped from the well, chlorine is added as a disinfectant to protect water from any bacteria in the distribution system. Water from several of the wells passes into sedimentation basins to remove excess sand and particles. Then the water flows to storage tanks and into the pipes of the distribution system, where it is delivered to the tap and you, the consumer.



Attachment I

♦ Public Works Department Water Operators collect and test water samples from throughout the system several times a day. These tests ensure that the proper chlorine levels are maintained



Mr. Coulby tests for chlorine residual.

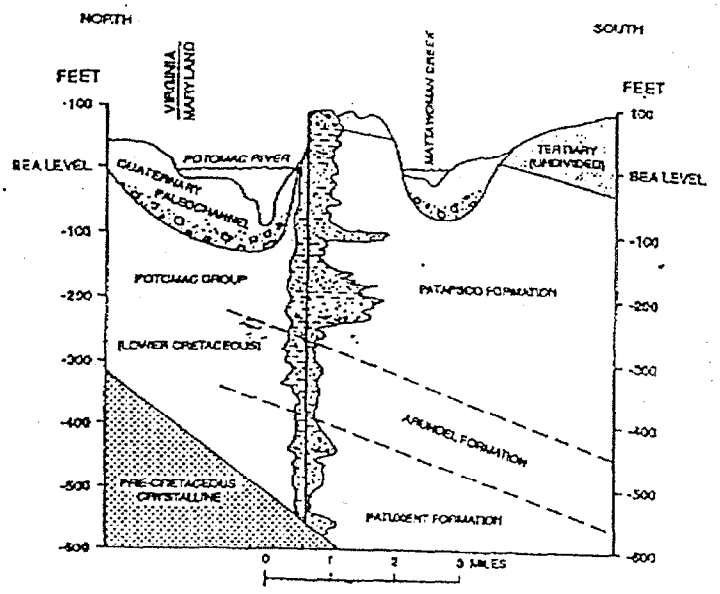
♦ Pelletized chlorine feed systems are being installed at the well houses to eliminate the risk to the operators of a chemical leak from gas cylinders and to provide consistent levels of disinfectant.

♦ We are working to find ways to conserve our water, to further ensure its quality, and to promote the safety of our operators. A water treatment plant for river water is nearing completion and will replace the use of groundwater currently used in the Indian Head Division's Goddard Power Plant.

♦ Also, additional drinking water hydrants are being installed to promote the flushing of pipes and reduce stagnation of water in low use areas. And, sensors are being installed in low use and dead-end areas to ensure the proper chlorine residual levels are maintained.

**Sources of Your Drinking water include the Patapsco and Patuxent Aquifers.**

PATAPSCO & PATUXENT AQUIFERS




# DEFINITIONS

**Action Level** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Inorganic Chemicals** – Chemical substances of mineral origin, such as lead and copper.

**Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG)** – The level of contaminant in drinking water below which there is no known or expected risk to health.

**Microbiological Contaminants** – Tiny organisms, such as bacteria, algae, plankton, and fungi.

**Organic Contaminants** – Naturally occurring or synthetic substances containing mainly carbon, hydrogen, nitrogen, and oxygen. This includes most pesticides and industrial chemicals.

**pCi/l** – picocuries per liter; a measure of the radioactivity in water.

**µg/l** – micrograms per liter; parts of contaminant per billion parts of water.

**mg/l** – milligrams per liter; parts of contaminant per million parts of water.

**Radionuclides** – Contaminants giving off ionizing radiation.

**Secondary Maximum Contaminant Level** – These levels represent reasonable goals for drinking water quality and are not federally enforceable.

**TON (Threshold Odor Number)** – A standardized test method for measuring odors in water.

**Trihalomethanes** – Compounds formed during the disinfection of drinking water by adding chlorine.

# WATER QUALITY DATA CHART

(Of contaminants detected, the highest level detected is listed. A zero means no contaminants were detected in that category.)

| Substance | Unit | MCL (Highest Level Allowed) | MCLG (EPA Goal) | Highest Level Detected | Major Source |
|---|---|---|---|---|---|
| **MICROBIOLOGICAL CONTAMINANTS** | | | | | |
| Total Coliform Bacteria | Samples | 1 positive | 0 positive | 0 positive | Naturally present in the environment |
| **RADIONUCLIDES** | | | | | |
| Gross Alpha | pCi/l | 15 | 0 | 2 | Geology |
| Gross Beta | pCi/l | 50 | 0 | 4.4 | Decay of natural and man-made deposits |
| **INORGANIC CHEMICALS** | | | | | |
| Barium | mg/l | 2 | 2 | 0.016 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| Fluoride | mg/l | 4 | 4 | 1.09 | Erosion of natural deposits; discharge from fertilizer and aluminum factories |
| Nitrate (as Nitrogen) | mg/l | 10 | 10 | 2.76 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| **SYNTHETIC ORGANIC CONTAMINANTS (SOCs))** | | | | | |
| All SOCs | µg/l | Varies per contaminant | Varies per contaminant | None Detected | Pesticides and herbicides |
| **VOLATILE ORGANIC CONTAMINANTS VOCs)** | | | | | |
| Total Trihalomethane | µg/l | 100 | 0 | 6.3 | Treatment process (by-product of chlorine disinfection) |

**1996* LEAD AND COPPER – Regulated at Consumer Tap**

| Contaminant | Unit | Action Level** | MCLG | 90th Percentile Contamination Level | Major Source |
|---|---|---|---|---|---|
| Copper (IHD) | mg/l | 1.3 | 1.3 | 0.468 | Consumer plumbing and service connection |
| Copper (Stump Neck) | mg/l | 1.3 | 1.3 | 0.194 | Consumer plumbing and service connection |
| Lead (IHD) | mg/l | 0.015 | 0 | <0.005 | Consumer plumbing and service connection |
| Lead (Stump Neck) | mg/l | 0.015 | 0 | <0.005 | Consumer plumbing and service connection |

** Sampling required every 3 years – 1999 samples will be posted in year 2000 Consumer Confidence Report*

*** Action Level – 90% of samples must be below this level*

**SECONDARY CONTAMINANTS – (Not Federally enforceable – affect aesthetic qualities of water)**

| Contaminant | Unit | SMCL | MCLG (Does not apply) | Highest Level Detected | Major Source |
|---|---|---|---|---|---|
| Sulfate | mg/l | 250 | N/A | 12 | Natural deposits |
| Chloride | mg/l | 250 | N/A | 31.5 | Erosion of natural deposits; saltwater intrusion |
| Zinc | mg/l | 5 | N/A | 0.043 | Erosion of natural deposits |

| SECONDARY CONTAMINANTS – Continued | | | | | |
|---|---|---|---|---|---|
| **Contaminant** | **Unit** | **SMCL** | **MCLG** (Does not apply) | **Highest Level Detected** | **Major Source** |
| pH | N/A | 6.5-8.5 | N/A | 7.7 | Erosion of natural deposits; algae blooms |
| Sodium | mg/l | N/A | N/A | Range 50.4 - 128 | Geology (See "Important Health Information" section for additional information about sodium in drinking water.) |
| Iron | mg/l | 0.3 | N/A | Range 0.056 – 4.735 | Erosion of natural deposits; leaching from pipes (See "FAQs"page for additional information on iron in drinking water.) |
| Total Dissolved Solids | mg/l | 500 | N/A | 243 | Erosion of natural deposits; runoff |
| Color | Units | 15 | N/A | Range 10 - 33 | Leaching from vegetation (See "FAQs" page for additional information on color in drinking water.) |

**NOTE:** The EPA requires monitoring of over 80 drinking water contaminants. Those listed above are the only contaminants detected in your drinking water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Water that is not properly treated may contain disease-causing organisms such as bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Although these organisms are typically found in surface water, it is very rare that groundwater from deep wells is affected by such organisms

♦ Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium (a microscopic organism found in rivers and streams) and other microbial contaminants are available from the Safe Drinking Water Hotline.

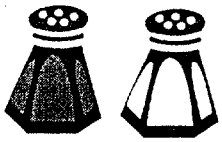
♦ In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Any bottled water that is labeled "drinking water" has to meet EPA's drinking water regulations.

**Safe Drinking Water Hotline**
**1-800-426-4791**
**www.epa.gov/OGWDW**

♦ Although sodium is an essential nutrient, individuals concerned with hypertension or pregnant women may need to limit their salt intake. To reduce the risks of adverse health effects due to sodium, consult a physician or registered dietitian to plan a healthy diet that reduces

the sodium content in your total food intake. The sodium levels in your drinking water are listed on the Water Quality Data Chart in this report.

♦ The EPA has not set any regulations on the levels of sodium in drinking water. However, sodium is included on the EPA's Contaminant Candidate List (CCL). The CCL is a list of contaminants that are not subject to any proposed or promulgated national primary drinking water regulation, are known to occur in public water systems, and may require regulation in the future. Sodium is on the CCL as a priority for further research.



♦ A Food and Drug Administration publication states that most American adults tend to eat between 4,000 and 6,000 mg of sodium per day. It lists nutrient guidelines for food labeling as follows:

Low-sodium: 140 mg or less per serving

Very low-sodium: 35 mg or less per serving

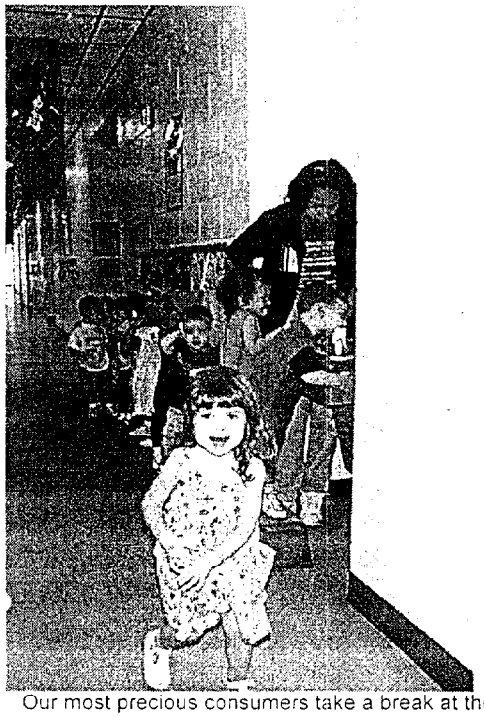
Sodium free: Less than 5 mg per serving.

For additional information on sodium in drinking water visit EPA's Office of Ground Water and Drinking Water on the internet.

**Office of Ground Water and Drinking Water**
**http://www.epa.gov/OGWDW/ccl/sodium/html**

♦ The Indian Head Division has been monitoring its water system for contaminants since before 1956. However, testing became mandatory in 1995 and the EPA currently has established regulations for over 80 contaminants.

♦ We are pleased to report that our water systems are in full compliance with all current monitoring requirements. The natural quality of our water has allowed us to reduce our monitoring requirements of certain contaminants. We are required to test for cyanide and nitrite only when directed by the state because previous testing did not detect these contaminants. We have received a waiver from monitoring for asbestos because we have no pipes containing asbestos and there are no natural outcroppings of asbestos in our area. Our record of complete compliance has reduced testing for arsenic, fluoride, lead, copper, and metals to every three years; radionuclides every four years; volatile organic compounds every six years; and synthetic organic compounds when directed by the state. We test monthly for bacteria and yearly for nitrates.



Our most precious consumers take a break at the Children's Development Center

♦ Our Public Works Water Operators are committed to providing you with quality water and test chlorine residuals and check well equipment daily.

# Just For Kids

CIRCLE THE CORRECT WORD TO COMPLETE THE SENTENCE.

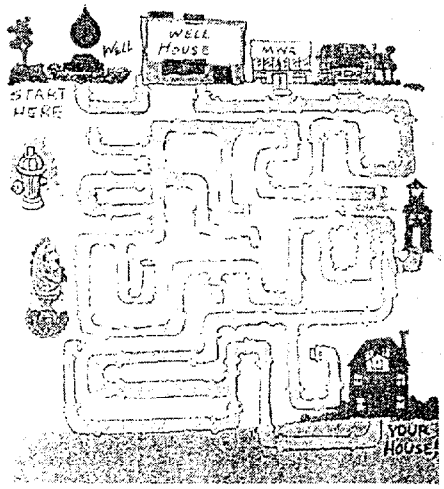
1. Water in rivers or lakes may look _____ when it is not.
   *Clean* *muddy* *dirty*

2. People work all day and all night in the _____.
   *Water treatment plant* *school* *river*

3. Germs can make us very _____.
   *Healthy* *sick* *smart*

4. Groundwater comes from a_____.
   *fruit* *cloud* *well*

Follow a drop of water through the pipes from the Well to your house.




Answer to Word Puzzle: 1. clean 2. Water treatment plant 3. Sick 4. well

# ??? FAQs ??

**Why are contaminants in my drinking water?**

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and radioactive material and can pick up substances resulting from the presence of animal or human activity. Therefore, all drinking water, including bottled water, may reasonably be expected to contain naturally-occurring minerals and at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate there is a health risk.

**My drinking water is reddish or brown. What causes this?**

Most often this discoloration is caused by changes in flow inside the pipes. Repairing leaks upstream, hydrant usage, or changes in valve positioning can disturb sediment and cause discolored water. Also, iron, a harmless chemical, may be dissolved in your drinking water. When iron is dissolved in water, it is colorless, but when this iron combines with air as you take water from your faucet, the iron turns reddish brown. Flush the piping (use the water for your plants). If the problem persists, call the Utilities Division and our operators will investigate.

**Why does my water have a "funny" taste?**

Some of our wells have a higher level of iron than others. Although iron is not a health risk, it does affect the taste of the water. Also, consumers located closer to the wells may notice a slight chlorine taste in their water. Chlorine dissipates and loses its ability to kill bacteria as it travels down the pipeline. In order to ensure that consumers located far from the treatment plant get water that is adequately disinfected, the dosage of chlorine received by consumers close to the plant is higher.

**Why is my water cloudy?**

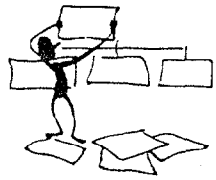
Often, the water is cloudy because many of the faucets on Base are equipped with aerators to prevent water from splashing. Aerators cause tiny air bubbles in the water similar to the gas bubbles in beer and soda. After a while, the bubbles rise to the top of the water and are gone.

**How can I conserve water?**

Employees on Base can help conserve water. Check your water supply for leaks and report them to the Trouble Desk on x4591.

If you notice any outside, underground water leaks; report them to the Utilities Division, Code 0941 on x4818. Turn off any unnecessary flows. When making coffee in the morning, save the water when you rinse the coffee pot and use it to water office plants or flowers and shrubs outside your building. Reduce the load on air conditioning units by shutting off air conditioning when and where it is not needed. Repair drips promptly.

At home, you can conserve water by not watering the lawn or washing off paved surfaces. Keep a pitcher of water in the refrigerator for drinking rather than running the faucet to get a cold glass of water. Wait until the dishwasher is full before turning it on. Rinse utensils and dishes in ponded water. Take showers instead of baths and limit shower time to 15 minutes or less. Don't let the water run when brushing your teeth. Install water-saving faucets, showerheads, and toilets.



The Maryland Department of the Environment website has additional information on conservation. Be sure to visit the site and see many additional ways you can help conserve water.

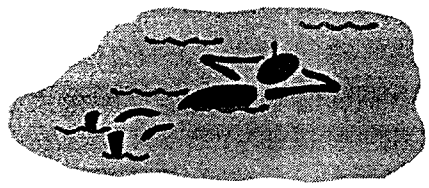
MDE Drought Website
**http://www.mde.state.md.us**

## For Additional Information

♦ **For more information on the Consumer Confidence Report or water quality, please contact the persons listed below.**

**Consumer Confidence Report:**
**Kathy Frey, Code 045H**
**Safety Department**
**Air, Water & Natural Resources Management Division**
**Phone: 301-744-4320**
**FAX: 301-744-4180**
**E-mail:** frevmk@ih.navy.mil

**Water Quality:**
**Dave Stewart, Code 0941**
**Public Works Department**
**Utilities Division**
**Phone: 301-744-4818**
**FAX: 301-744-4179**
**E-mail:** stewartdj@ih.navy.mil



# INSTALLATION RESTORATION PROGRAM

**INDIAN HEAD DIVISION,**
**NAVAL SURFACE WARFARE CENTER**
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035

## RESTORATION ADVISORY BOARD (RAB) MEETING COMMENTS, QUESTIONS AND ANSWERS

October 21, 1999

**Installation Restoration (IR) Site 57 Remedial Investigation (RI) Report Status**

Question: The concentration of trichloroethylene (TCE) at the outfall has been consistent at 20 parts per billion (ppb)?

Answer: Yes. However, during the initial sampling of points along the pipe, the concentration of TCE varied. For example, near the building, the concentration of TCE in the pipe was around 20 ppb. At the next sampling point down from there, the result was about 8 ppb. Then, at the next sampling point down from there, the concentration was 15 ppb.

If TCE-contaminated groundwater were still entering the pipe, you might expect a steady increase in the concentration of TCE along the length of the pipe. If TCE-contaminated groundwater is not entering the pipe, you might expect a steady decrease in the concentration of TCE along the length of the pipe, due to the dilution of water from other storm sewer lines entering the pipe. Neither of these scenarios was observed from the results obtained during the first round of sampling. Therefore, the second round of samples was needed to determine what is actually happening with respect to groundwater and possible infiltration into the pipe.

Question: What happens when you start the Feasibility Study (FS) in March?

Answer: An FS is conducted to determine the best method for remediating the site. Therefore, geophysical data is required, such as the soil type in the area and the level of the groundwater, etc. Cost data for various



**Attachment J**

as much TCE has been removed as possible by other methods.

**IR Site 47 Remedial Investigation (RI) Status**

Question: Wouldn't you expect to find mercury at this site?

Answer: Yes. Although it is not listed on the overhead, mercury is one of the heavy metals that we found at this site, but not in any appreciable quantity.

Question: How far from the building in the ditch did you sample?

Answer: The ditch is located 50 to 75 feet from the building. Samples were obtained an additional 50 feet along the ditch.

Question: Will the FS address removal of carbon tetrachloride and chloroform and mercury and will this require any soil removal?

Answer: The FS will definitely address alternative for removing the carbon tetrachloride and the chloroform. Some of the heavy metals, such as mercury, may need to be removed, too, depending on the results of the risk assessment.

Question: Is this sampling performed in-house?

Answer: No. Contractors for the Navy take these samples.

**IR Sites 12, 41, and 42 Feasibility Study (FS) Update**

Question: Is contamination leaching into the wetlands?

Comment: We have placed permanent shallow-groundwater monitoring wells around the edge of the landfill where it meets the pond. We did not find contamination leaching into the wetlands at levels that pose an unacceptable risk.

Question: What happened to the other sites that are not on the map?

Answer: The overhead that shows the locations of sites does not contain all of the sites. However, the Site Management Plan (SMP), a copy of which can be found in the Information Repositories, contains a map with all

of the IR sites on it. We are currently updating the SMP and a copy will be given to all RAB members, and copies will be placed in the Repositories.

Question: Will there be any restriction on the use of the landfill after cleanup?

Answer: Yes. Unless all of the waste is removed from a landfill, some restrictions must be placed on its future use.

Comment: I recently saw on the EPA website that the EPA is trying to get owners to cleanup sites, not just put them on hold. The land should be available for later use.

Response: The Navy must consider cost versus risk and future land use when choosing a remedial alternative. Currently, since there are no plans to transfer property, we must look at industrial use for site cleanup purposes. However, if the land were to be transferred or sold, we would have to revisit sites that are cleaned to industrial levels and most likely perform additional remedial activities.

Question: When was the concrete slab poured at the Scrapyard?

Answer: We are not certain of the date. The Scrapyard was originally used for coal storage, which is shown on older maps and was evidenced by the coal that was dug up during the installation of shallow-groundwater monitoring wells at the site.

Question: What does site-specific toxicity testing mean?

Answer: Sediment/soil samples from the site are taken and organisms are subjected to these samples at varying concentrations to determine the toxicity of the contaminants in the sediment.

Question: Are the organisms specific to the area where the samples were taken?

Answer: We are not sure. However, this sampling was recommended by the EPA Biological Technical Assistance Group (BTAG) and testing is being performed per the EPA guidance.

Question: Does the Maryland Department of the Environment (MDE) require specific agencies, such as the Army Corps of Engineers to delineate the landfill?

Answer: The MDE does not require any particular group or agency to delineate the landfill.

Comment: During the next RAB meeting we will expand on toxicity testing, i.e., what it is and how it is done.

**Fiscal Year (FY) 2000 Schedule and Budget**

Question: Can we review the scopes of work for these projects, in particular, the one for the ecological assessment of the Mattawoman Creek?

Answer: Yes.

Question: The cost for the RI on Site 49 is $102,000 as shown in your overhead. Is this cost for the entire RI and will the RI extend past the year 2000?

Answer: Site 49, the Chemical Disposal Pit, will actually be studied as part of IR Site 53 (Mercury Contamination of the Sewage System). The cost shown is for the entire RI on the site, which includes sampling the site and preparing a report. It typically takes a year from time of award until the final RI report is completed. Therefore, the RI will definitely extend through FY 2000.

Question: I see some Records of Decision (RODs) for FY2000 and then preparations of Remedial Designs (RDs). Isn't the preparation of the RDs dependent on the signing of the RODs?

Answer: Not really. The ROD is just the formal way of stating what the Navy, the EPA and the MDE have agreed upon for cleanup of a site.

Question: Is the funding for each item, such as the RI and FS, separate?

Answer: Yes. The funding for the RI, FS, ROD and RD is separate. For example, let's say a site was scheduled for an FS, ROD, and RD. If the budget was cut, we could just perform the FS and prepare a ROD, without preparing the RD. The actual schedules for all of the

IR sites are in the SMP. We plan to finalize the SMP in the next three weeks.

Question: Is the $3M a confident figure, or are we dreaming? Looking at last year, only half of the budgeted amount of $1M actually made it into the Indian Head IR Program.

Answer: Indian Head is in a much better position this year to receive funding since Bainbridge is being wrapped up, which took half of Indian Head's funding last year.

Question: How will we prioritize the sites if we do not get all of the scheduled funding?

Answer: Site priorities have already been set. We are currently performing work on the high priority sites. If funding is decreased, the Navy, the EPA, and the MDE will have to reevaluate the schedule.

**New RAB Member Drive**

Question: Can we summarize the accomplishments of the RAB and the work completed at Indian Head?

Answer: Yes. We plan to publish this information in our base newspaper, *Flash Point*. We also may put information in the Maryland Independent an Indian Head - La Plata Independent.

# INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER

## INSTALLATION RESTORATION PROGRAM RESTORATION ADVISORY BOARD (RAB) MEETING AGENDA (Tentative)

**February 17, 2000**

1. **IR Site 57 Remedial Investigation (RI) Report Update**

2. **IR Site 47 RI Report Update**

3. **Mattawoman Creek Study**

**Attachment K**