



DEPARTMENT OF THE NAVY

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

5090  
Ser 046/103  
10 Jun 98

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

Dear Mr. Biles:

The purpose of this letter is to remind you of the next Installation Restoration (IR) Program Restoration Advisory Board (RAB) meeting that is scheduled for Thursday, June 18, 1998, from 7:00 p.m. to 9:00 p.m. at the General Smallwood Middle School. **Please mark this date on your calendars.** A tentative agenda for the meeting is included for your information.

We are also forwarding the minutes from the RAB tour that was held on Thursday, April 30, 1998. We would like to thank those RAB and community members who were able to attend the tour. However, we are sorry that not everyone was able to be present.

During the tour, a question arose concerning the differences in the quality of water that is used for drinking, and water that is used for our Powerhouse. This brought up two issues: salinity (salt) and silica (sand) content. It is important to note that all of our wells are deep wells (greater than 100 feet) and many are screened at more than one depth. In addition, salinity refers to salts of metals, such as sodium, calcium, and magnesium.

All of our potable wells are in compliance with the standards set forth by the Safe Drinking Water Act and can be used for drinking water. However, we have two separate systems of piping based on silica (sand) content: the low silica system and the high silica system. Both the low silica and high silica systems are used to provide drinking water at our Activity. However, only water from the low silica system is used for the Powerhouse. The use of low silica water reduces scaling in the boilers and the need for additional maintenance to keep the boilers running efficiently.

There does not appear to be a direct correlation between the silica systems and the salinity. For example, the table below shows the ranges for sodium (Na), calcium (Ca), and magnesium (Mg) for each system. The values shown are in milligrams per liter (mg/L).

	Na	Ca	Mg
Low Silica System	86-110	1.4-6.7	0.48-1.2
High Silica System	68-140	0.56-2.4	0.3-1.3

As a final note, we are currently in the design phase of a project to use river water, rather than groundwater, for our steam production. The new river water treatment system will include a sedimentation trap and ion exchange unit to purify the water. The new system will not be functional at all times during the year, especially during large storm events when the sediment content of river water is high. However, it will greatly reduce the amount of groundwater that we are currently using for steam production.

If you have any comments or questions, you may contact Mr. Shawn Jorgensen on (301) 743-6745. In addition, you may FAX your comments/questions to (301) 743-4180 or submit them in writing to the address above, attention Code 046.

Sincerely,



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

Encl:

- (1) Tentative Agenda for RAB Meeting of 18 Jun 98
- (2) Minutes from RAB Tour of 30 Apr 98

Copy to:

RAB Members  
EFACHES (Code 181)

5090  
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Blind copy to:  
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Writer: S. Jorgensen, Code 046C, X6745  
Typist: S. Jorgensen, 1 Jun 98

# 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: April 20, 1998

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

Ms. Susan Adams (N) \*                      Mr. Gary Davis (L)  
Mr. Elmer Biles (C)                         Mr. Brent Meredith (N)

### RAB Members Not in Attendance:

Ms. Celia Carroll (C)                      Mr. Vincent Hungerford (C) \*  
Ms. Lynn Covington (C)                    Ms. Donna Lynch (S)  
Mr. Stephen Elder (L)                        Mr. John McDevitt (C)  
Mr. Charles Ellison (C)                     Mr. Dennis Orenshaw (F)  
Ms. Patricia Haddon (L)                     Mr. Fred Pinkney (F)

### Additional Attendees:

Ms. Sherry Deskins (N)                     Ms. Elaine Magdinec (N)  
Mr. William Hudson (F)                     Mr. Mark Yeaton (C,N)  
Mr. Shawn Jorgensen (N)

\* Co-Chair

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

### Major Issues Discussed/Accomplished:

A tour was conducted of the Installation Restoration Sites at the Indian Head Division, Naval Surface Warfare Center. Sites visited included those that are currently undergoing a Remedial Investigation (RI) or will undergo an RI in fiscal year 1999. The agenda for the tour is included as Attachment (A).

ENCL (1)

**INSTALLATION RESTORATION (IR) SITES**

**FOR**

**RESTORATION ADVISORY BOARD (RAB) TOUR**

**30 April 1998**

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**OLSON ROAD LANDFILL  
(IR Site 42)  
Fact Sheet**

**1. Contamination**

Unknown

**2. Location:**

Near Building 1728

**3. From:**

Disposal of various solid wastes from all over Station

**4. When:**

A period of approximately 5 years ending in 1987

**5. Generated By:**

Normal operations. Whether hazardous wastes were disposed at the landfill cannot be confirmed or denied by activity records or personnel. Analysis of the former topography suggests that earth moving equipment was used to fill the area.

**6. Amount:**

Unknown

**7. Work Completed:**

A Site Inspection was performed under the Navy Installation Restoration Program, as recommended in the Preliminary Assessment, as described below:

a. Branches, pallets, and other visible debris that was located on the site were removed to facilitate sampling efforts.

b. A Magnetometer and Ground Penetrating Radar (GPR) were used to scan the subsurface of the landfill for any buried obstructions that would impede drilling or present a potential hazard.

c. Approximately 75 soil samples were collected at various depths from 24 soil borings and analyzed for VOCs, TCLs, TALs, and TPHs.

d. Four of the soil borings were completed as permanent groundwater monitoring wells and two soil borings were completed as temporary groundwater monitoring wells.

e. Nine groundwater samples were obtained from the six monitoring wells and three grab groundwater samples were taken from 3 bore holes. These samples were analyzed for VOCs, TCLs, TALs, and TPHs.

**OLSON ROAD LANDFILL  
(IR Site 42)  
Fact Sheet  
(continued)**

f. Fifteen sediment samples were collected from the swale located to the northwest and south of the landfill and were analyzed for VOCs, TCLs, TALs, and TPHs.

g. Four surface water samples were taken in the swale and analyzed for VOCs, TCLs, TALs, and TPHs.

**8. Current Status:**

Additional sampling was recommended in the SI. A Remedial Investigation/Feasibility Study is currently being conducted at the site.

**SOAK OUT AREA  
(IR Site 44)  
Fact Sheet**

**1. Contamination:**

An unknown nonflammable solvent, believed to be Pennchem 901A, a polysulfide solvent containing mercaptan.

**2. Location:**

Area approximately 75 feet east of Building 1363 and 40 feet south of Building 907.

**3. From:**

Removal of propellant from rocket motor catapult tubes

**4. When:**

Late 1960's to early 1970's

**5. Generated By:**

Rocket motor catapult tubes were allowed to soak in the solvent contained in two 55 gallon drums that were welded together. The tubes soaked for 2 to 3 days and were then removed without regard to solvent spillage. However, a smaller catch tank was placed in the larger tank to collect pieces of propellant that would fall out of the tubes.

**6. Amount:**

Unknown

**7. Work Completed:**

A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. This inspection included:

- a. Obtaining 15 soil samples from 15 borings for soil gas analysis of VOCs.
- b. Taking nine soil boring samples, three samples per boring at approximately 5 foot intervals, from three soil borings.
- c. Installing two monitoring wells and obtaining four groundwater samples, two from each well. These samples were analyzed for VOCs, BNAs, and TPHs.
- d. Obtaining 6 soil samples, three per boring at approximately 5 foot intervals, during the installation of monitoring wells. These samples were analyzed for VOCs, BNAs, and TPHs.
- e. Taking two soil boring samples using a hand auger to a depth of 1 foot and analyzing for VOCs, BNAs, and TPHs.

**SOAK OUT AREA  
(IR Site 44)  
Fact Sheet  
(Continued)**

**8. Current Status:**

Additional sampling was recommended in the SI. A Remedial Investigation/Feasibility Study is currently being conducted at the site.

**MERCURIC NITRATE DISPOSAL AREA  
(IR Site 47)  
Fact Sheet**

**1. Contamination:**

Mercuric Nitrate

**2. Location:**

South of the concrete pad behind Building 856

**3. From:**

Disposal of mercuric nitrate dissolved in nitric acid

**4. When:**

From 1957 through 1965

**5. Generated By:**

Mercuric nitrate is a catalyst that was used to produce hydrazinium nitroformate, an oxidizer used in the propellants for the Polaris missile. The spent solution, one ounce of mercuric nitrate dissolved in 98% nitric acid, was poured from 55 gallon drums onto a 6 x 4 foot bed of limestone chips.

**6. Amount:**

Assuming enough limestone was present to neutralize the nitric acid, 274 pounds of mercuric nitrate (equivalent to 169 pounds of elemental mercury) would have precipitated out as a salt.

**7. Work Completed:**

a. A Preliminary Assessment was performed and a Site Inspection was recommended under the Navy Installation Restoration program to determine if contamination is actually present.

b. A Site Inspection under the Navy Installation Restoration Program was conducted. This inspection included taking two soil samples with a hand auger in the ditch where the mercuric nitrate may have settled, and analyzing for VOCs, BNAs, and TALs. In addition, 10 soil samples were taken with a hand auger at the south edge of the concrete pad. The samples were taken at various depths from zero to one foot and were analyzed for VOCs, BNAs, and TALs. No limestone was found during the sampling.

**8. Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

**TOWN GUT LANDFILL  
(IR Site 12)  
Fact Sheet**

**1. Contamination:**

Construction debris, including scrap metal, empty cans and drums containing paint and varnish residue; demolition debris, such as asphalt, concrete, and rubble. Possible chemical waste

**2. Location:**

Approximately 3.3 acres bisected by Atkins Road extension

**3. From:**

Disposal of landscaping waste, fill material, rubble, and construction debris.

**4. When:**

1968 to 1980

**5. Generated By:**

Disposal of various wastes

**6. Amount:**

Unknown

**7. Work Completed:**

a. The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program.

b. A Confirmation Study, the NACIP equivalent of an IR Site Inspection (SI) was completed in 1985 to determine if contamination was actually present at the site. Low levels of metals were found in the sediment at this site. The CS recommended monitoring the site for five years to ensure that no contamination is migrating from the landfill.

c. The five year monitoring results did not show that any contamination is migrating from this area.

**8. Current Status:**

Continuation of Remedial Investigation/Feasibility Study phase

**BRONSON ROAD LANDFILL (MAP GRID N21 AND O21)**

**IR Site 21**

**Fact Sheet**

**1. Contamination:**

Solid waste including various quantities of paint sludges, asbestos, and barium sulfate

**2. Location:**

2-acre abandoned gravel mining pit located near the terminus of Bronson Road, directly across the street from Building 1384

**3. From:**

Dumping of solid waste from facilities in the explosives manufacturing area

**4. When:**

Between 1975 and 1982

**5. Generated By:**

Solid waste from facilities in the explosives manufacturing area

**6. Amount:**

1500 tons of solid waste, 2.5 tons of Barium sludge, 3.3 tons of Asbestos and 3 tons of paint sludge

**7. Work Completed:**

The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program. The IAS recommended that a Confirmation Study not be performed for Site 21.

**8. Current Status:**

Initiation of the Remedial Investigation/Feasibility Study phase

## HYP0 DISCHARGES FROM X-RAY BUILDING NO. 2 (MAP GRID P27)

### IR Site 25

### Fact Sheet

**1. Contamination:**

Silver from spent fixer and developer

**2. Location:**

Drainage swales behind Building 588 which flow to the Mattawoman Creek

**3. From:**

Discharge of spent fixer and developer for X-Ray film

**4. When:**

1944 to 1964

**5. Generated By:**

Fixer and developer are used in developing X-Ray film. Some of the silver, which is on the film, gets "fixed" to the X-Ray and the remainder of the silver is washed off. Both the fixer and developer, which contain silver, were discharged behind Building 588 and discharged into IW46.

**6. Amount:**

Estimated 864 pounds of silver.

**7. Work Completed:**

a. The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program. The IAS recommended that a confirmation study be conducted at Site 25 if the study at Site 5 indicated a danger to aquatic life.

**8. Current Status:**

Initiation of the Remedial Investigation/Feasibility Study phase

**SILVER RELEASE TO SEDIMENTS  
(IR Site 39)  
Fact Sheet**

**1. Contamination:**

Elemental silver and possibly silver nitrate, dinitropropanol (DNPOH), ethylene dichloride, methyl chloride, and formaldehyde.

**2. Location:**

Mattawoman Creek southeast of Building 497

**3. From:**

Production of Bis-2,2-Dinitropropyl Acetal/Formal

**4. When:**

1961 to 1965.

**5. Generated By:**

Release of silver and silver nitrate during production of Acetal/Formal. Silver nitrate was used as a catalyst in the production of Acetal/Formal, a plasticizer, or propellant binder, used in Polaris rocket motors. In the reaction, the silver nitrate catalyst was converted to elemental silver. The silver was recovered from the reaction vessel and was returned to the supplier to undergo nitration back to silver nitrate. However, interviews with Navy personnel revealed that a significant amount of silver, as well as the other chemicals listed above, may have entered the creek through spills and human error, such as valves mistakenly left open.

**6. Amount:**

Unknown.

**7. Work Completed:**

A Site Inspection (SI) under the Navy Installation Restoration (IR) Program was conducted as recommended by the Preliminary Assessment to determine if contamination is actually present. This inspection included taking four ponar grab samples from the top sediment of the Mattawoman Creek and two sediment samples in the Creek near Industrial Wastewater Outfall 05 (IW05). These samples were analyzed for Acetal/Formal, Pelletized Nitrocellulose (PNC), Unsymmetrical Dimethylhydrazine (UDMH), High Bulk Density Nitroguanidine (HBNQ), TALs, VOCs, and BNAs.

**8. Current Status:**

Additional sampling was recommended in the SI. A Remedial Investigation/Feasibility Study is currently being conducted at the site.

**SCRAP YARD  
(IR Site 41)  
Fact Sheet**

**1. Contamination:**

Polychlorinated Biphenyls (PCBs)

**2. Location:**

Scrap Yard behind Building 436

**3. From:**

Storage of PCB and PCB contaminated transformers. By definition, PCB transformers contain oil with greater than 500 parts per million (ppm) of PCBs, while PCB contaminated transformers contain oil within 50 to 500 ppm PCBs.

**4. When:**

From the 1960's to 1988.

**5. Generated By:**

Before Building 1440 was dedicated to the storage of removed PCB equipment, transformers containing PCBs were stored at the Scrap Yard. Transformers, some in poor condition, which leaked PCB oil on the ground were stored at the northwest end of the Scrap Yard near the Creek.

**6. Amount:**

Unknown

**7. Work Completed:**

A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. This SI included:

- a. Obtaining eight samples for soil-gas analysis of VOCs from eight locations.
- b. Taking 15 soil samples, three samples per boring at approximately 5 foot intervals, from five soil borings and analyzing for TCLs, TALs, and TPHs.
- c. Installing three monitoring wells and obtaining six groundwater samples, two from each well. These samples will be analyzed for TCLs, TALs, and TPHs.
- d. Obtaining nine soil samples, three per boring at approximately 5 foot intervals, during the installation of monitoring wells. These samples will be analyzed for TCLs, TALs, and TPHs.
- e. Taking 11 sediment samples from the Mattawoman Creek and analyzing for TCLs, TALs, and TPHs.

**SCRAP YARD  
(IR Site 41)  
Fact Sheet  
(Continued)**

**8. Current Status:**

Additional sampling was recommended in the SI. A Remedial Investigation/Feasibility Study is currently being conducted at the site.

**TRICHLOROETHYLENE  
(IR Site 57)  
Fact Sheet**

**1. Contamination:**

Trichloroethylene (TCE)

**2. Location:**

Building 292

**3. From:**

Possible discharges and spills from drainage of vapor degreasing tank

**4. When:**

1964 to 1989

**5. Generated By:**

Emptying of 2000 gallon vapor degreasing tank. The cleaning system used TCE vapors to clean metal parts. The 2000 gallon tank of TCE was emptied and refilled approximately every six months.

**6. Amount:**

Unknown. Extent of contamination to be determined

**7. Work Completed:**

A limited subsurface investigation was conducted in Mar 1996. This investigation indicated elevated levels of TCE in the soil and groundwater in the area south of Building 292.

A Draft EE/CA was completed in Oct 1996. Prior to completing the EE/CA, a Treatability study was conducted to determine if Soil Vapor Extraction (SVE) was an effective remedy. The results of the Treatability study indicated that SVE would not work at the site due to the geology and location of the groundwater table.

**8. Current Status:**

A Draft Final EE/CA was completed in Oct 1997 and is under review. Upon finalization and public comment, a removal action will be conducted in FY 1998.

This site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

**PAINT SOLVENTS DISPOSAL GROUND (MAP GRID K31)**

**IR Site 13**

**Fact Sheet**

**1. Contamination:**

Kerosene, Mineral Spirits, Lacquer thinners, and Solvents

**2. Location:**

200-square-foot depressed area located 50 feet behind the Paint Shop, Building 870

**3. From:**

Dumping of thinners, solvents and spent paint behind the building

**4. When:**

Between 1953 and 1979

**5. Generated By:**

Shop activities included painting various items by hand, aerosol sprays, or in paint spray booths and wastes were generated during paint equipment cleaning operations.

**6. Amount:**

Estimated at over 20,000 pounds of waste

**7. Work Completed:**

The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program. The IAS recommended that a Confirmation Study not be performed for Site 13.

**8. Current Status:**

Initiation of the Remedial Investigation/Feasibility Study phase

**MERCURY CONTAMINATION OF THE SEWAGE SYSTEM  
(IR Site 53)  
Fact Sheet**

**1. Contamination:**

Mercury

**2. Location:**

Storm and Sanitary Sewer Pipes

**3. From:**

Building 102

**4. When:**

1909 through 1986

**5. Generated By:**

In 1969, approximately 10 pounds of mercury were discovered in a storm sewer manhole and in 1989, approximately one pound of mercury was discovered in a sanitary sewer manhole. Both manholes have drain line connections to Building 102. Laboratory equipment that contain mercury, such as nitrometers, were used extensively in Building 102. Mercury often entered drains during the cleaning of laboratory equipment. In 1986, when mercury traps were placed on all sinks in Building 102, mercury was discovered in the U-joints of the sinks.

**6. Amount:**

The Draft Preliminary Assessment Report states that only about ten percent of the mercury sent to Building 102 was returned to the Building 444 storage vault for reclamation. Laboratory workers estimated that approximately one liter of mercury was lost per month. Therefore, it is possible that 28,000 pounds of mercury could have been discharged to the drain lines over the 77 year period that the building operated without mercury traps on the sinks.

**7. Work Completed:**

a. The ten pounds of mercury discharged in the storm sewer manhole in 1969 was recovered.

b. The one pound of mercury discharged in the sanitary sewer manhole in 1989 was recovered.

c. A television inspection of the gravity sewer lines was conducted in late 1988. The vitrified clay and terra-cotta pipes were broken, cracked, sagging, separated and, in some cases, collapsed. Mercury contamination of the sewage sludge rose to 150 parts per million while the television inspection was being conducted. This suggests that the sewer cleaning, which was done prior to the television inspection, washed mercury down to the Sewage Treatment Plant. Mercury levels have since dropped to approximately 25 parts per million, the concentration typically measured in the sludge prior to 1988.

**MERCURY CONTAMINATION OF THE SEWAGE SYSTEM**  
**(IR Site 53)**  
**Fact Sheet**  
**(continued)**

d. A Site Inspection under the Navy Installation Restoration Program was conducted and included:

1) Taking 26 soil samples from 13 borings. One sample per boring was located below the level of the sewer line. These samples were analyzed for mercury and nitrate esters. In addition, some samples were analyzed for VOCs, BNAs, TAL, and TPH.

2) Obtaining 4 sediment samples from sanitary and storm sewer manholes and analyzing for mercury and nitrate esters.

e. In addition, during the SI, six monitoring wells were to be installed. However, at a depth of approximately 41 feet, a marker bed was encountered that was subsequently identified as a unit of the Tertiary Brandywine Formation, which is on top of the Patapsco Formation. The Upper Patapsco Formation is a confining unit which is estimated to be 100 feet thick. Therefore, no shallow water-bearing zones were present.

**8. Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

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

June 18, 1998

- 7:00 - 7:10 ARRIVAL/WELCOME  
Ms. Susan P. Adams  
Director, Environmental Division
- 7:10 - 7:20 Technical Assistance for Public Participation  
Mr. Brent Meredith, Remedial Project Manager  
Engineering Field Activity, Chesapeake
- 7:20 - 7:30 Remedial Investigation Plans for IR Sites 47 and 53  
Mr. Robert Sadorra, Remedial Project Manager  
Engineering Field Activity, Chesapeake
- 7:30 - 8:00 IR Site 57 Update (Video Survey, RI Work Plan,  
Removal Action)  
Mr. Brent Meredith
- 8:00 - 8:40 Remedial Investigation Results for Sites 12, 39/41,  
42, 44  
Mr. Robert Sadorra, Remedial Project Manager  
Engineering Field Activity, Chesapeake
- 8:40 - 9:00 COMMENTS, QUESTIONS, AND ANSWERS
- 9:00 ADJOURN

ENCL (2)