



DEPARTMENT OF THE NAVY
NAVAL DISTRICT WASHINGTON
WEST AREA
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND 20640-5035

N00174.AR.000420
NSWC INDIAN HEAD
5090.3a

IN REPLY REFER TO

5090
Ser 044SJ/120
3 Nov 03

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 16, 2003 at the Indian Head Senior Center, which is located at 100 Cornwallis Square, Indian Head, Maryland.

A few questions arose during the meeting that we could not answer at the time. Therefore, as stated in the meeting, we are providing those answers with this letter.

The first question concerned the waste disposed from the cleanup of IR Site 12, the Town Gut Landfill. The question was asked: "What landfill was the waste from Site 12 sent to?" We contacted the Removal Action Contractor, Shaw Environmental, Inc., to determine where the waste was disposed. The waste generated during the cleanup of Site 12 went to the following locations:

Waste Stream	Facility Name	Location
Metal Scrap	Prince George's Scrap	MD
Tires	BFI Landfill	VA
Miscellaneous Debris	King George County Landfill	VA
Hazardous Waste Drums	Cycle Chem, Inc.	PA

In addition, this information will be included in the final completion report for the removal action at this site.

The second question was "How much waste will be removed from Site 42, the Olsen Road Landfill, during the remedial action? The estimate for complete removal is 13,310 cubic yards of material, which is equivalent to approximately 830 truckloads of waste. For comparison, the estimate for partial removal, which will not remove the waste under the steam line or the paved area behind Building 1866, is 11,080 cubic yards. This is equivalent to approximately 690 truckloads of waste.

5090
Ser 044SJ/120

We would like to thank everyone that attended the RAB meeting. We hope to see all of you at the next RAB meeting, which is tentatively scheduled for Thursday, February 19, 2004, at the Indian Head Senior Center.

If you have any comments or questions concerning this matter, please contact Mr. Shawn Jorgensen on (301) 744-2263 or Ms. Heidi Morgan on (301) 744-2265.

Sincerely,



T. L. Honey
Captain, U.S. Navy
Area Operations Officer
NDW, West Area

Encl:

(1) Minutes from RAB Meeting of 16 Oct 03

Copy to:

RAB Members

Meeting Attendees

ATSDR (D. Jackson)

CH2M Hill (A. Estabrook)

NDW (J. Kidwell)

TetraTech (G. Latulippe)

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 16, 2003

Restoration Advisory Board (RAB) Member Participants:

Mr. Elmer Biles (C)	Mr. Shawn Jorgensen (N)**
Mr. Curtis DeTore (S)	Mr. Tom Lewis (N)
CAPT Tara Honey (N)	Mr. Wayne McBain (C)
Mr. Vincent Hungerford (C)*	CDR Peter Webb (N)

RAB Members Not in Attendance:

Mr. Gary Davis (L)	Mr. Dennis Orenshaw (F)
Mr. Stephen Elder (L)	Mr. Fred Pinkney (F)
Mr. Jeff Morris (N)	Ms. Karen Wigger (L)

Additional Attendees:

Ms. Heidi Morgan (N)	Mayor Ed Rice (C)
Mr. Joe Rail (N)	Mr. Alex Schuman (N)

* Co-Chair

** Acting Co-Chair

C = Community
F = Federal Official
K = Contractor
L = Local Official
N = Navy Official
R = Newspaper Reporter
S = State Official

Major Issues Discussed/Accomplished:

1. Arrival/Welcome

Mr. Shawn Jorgensen of the Command, Naval Installations (CNI)/Naval District Washington (NDW) began the meeting by introducing himself and welcoming everyone to the Indian Head Senior Center.

Mr. Jorgensen then presented the meeting agenda, which is included in Attachment A.

2. Command, Naval Installations (CNI) Transition

Mr. Tom Lewis, the Safety and Environmental Program Manager from CNI/NDW, discussed the current changes that the Navy is making to become more effective and efficient. Support functions are being realigned to one area to allow Activities to concentrate on their mission, such as explosive manufacture and research, development, test, and evaluation. As a result, CNI has been formed to manage property and provide support functions. Admiral Jan Gaudio is the Commandant of NDW, which currently has 18 Navy bases located in the District of Columbia, Maryland, and Virginia. Captain Tara Honey is the Area Operations Officer for the western facilities of NDW, which include Indian Head and Dahlgren.

A copy of Mr. Lewis' handouts is included in Attachment B. The first shows the present Navy Regional Commands and the second shows the Naval facilities within the NDW region and their sub areas: north, south, east, west, and central. Indian Head is located in the western sub area. The last sheet shows how the new CNI group interacts with the customers, which are the mission Activities.

3. Update of Site 12 Removal

Mr. Shawn Jorgensen provided an update of the removal action at Site 12 (Town Gut Landfill). The installation of the shallow groundwater monitoring wells was performed and the project is complete. The final completion report will be distributed to the RAB.

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

4. Status of Sites 13 and 25 Proposed Plans

Ms. Heidi Morgan of CNI/NDW discussed the results of the Remedial Investigations for Sites 13 and 25. There were no human health

or ecological risks, so no further action is proposed for these sites. Ms. Morgan presented the tentative schedule for the submittal of the No Further Action Proposed Plans and the Record of Decision for both sites.

A copy of Ms. Morgan's presentation is included in Attachment D.

5. Site 42 Final Feasibility Study (FS) Report

Mr. Shawn Jorgensen stated that the purpose of the FS was to evaluate the alternatives that mitigate potential ecological risks from the landfill and comply with MDE landfill closure requirements. Mr. Jorgensen provided the alternatives and explained the differences between them as well as the costs. He then stated that the FS does not select an alternative. However, the Indian Head Installation Restoration Team (IHIRT) (comprised of the EPA, MDE, and the Navy) decided that a complete removal would be the best remedy for this site based on the evaluation of the alternatives with the nine criteria of the National Contingency Plan. Mr. Jorgensen then presented the tentative schedule for the submittal of the Proposed Plan, Record of Decision and the Removal Action.

A copy of Mr. Jorgensen's presentation is included in Attachment E.

6. Site 57 Pilot Scale Study

Mr. Shawn Jorgensen discussed the injection of Hydrogen Release Compound (HRC) at Site 57 (Trichloroethylene (TCE) Building 292) to remediate the shallow groundwater of TCE. A small area adjacent to Building 292 was selected as the test area. This area has the highest concentration of TCE in the groundwater. The HRC degradation process supplies food and an environment in which microbes are stimulated and break down TCE. Mr. Jorgensen provided preliminary data showing that the TCE is decreasing in the test area. He also discussed the new proposed technology to remediate the vinyl chloride (VC) that is a breakdown product of the TCE. The technology is called In Situ Submerged Oxygen Curtain (ISOC). Mr. Jorgensen explained that an oxygenated environment, which the ISOC technology provides, stimulates the microbes that break down VC. The pilot study will be performed for six months, beginning in early 2004. The submittal of the findings report is expected to be submitted in late 2004.

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

7. IR Budget For Fiscal Year 2004 (FY04)

Mr. Joe Rail from the Engineering Field Activity Chesapeake (EFACHES) discussed the funding that was executed in FY03 and the funding planned for execution in FY04.

Mr. Rail also informed the meeting members that the final report for the Mattawoman Creek Study is being finalized and when it is complete it will be added to the RAB Meeting Agenda as a topic for discussion.

A copy of Mr. Rail's presentation is provided in Attachment G.

8. Comments, Questions, and Answers

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

9. Conclusion

Mr. Shawn Jorgensen presented the tentative agenda for the February 19, 2004 RAB meeting, which is included in Attachment I. Mr. Jorgensen then concluded the meeting by thanking all in attendance.

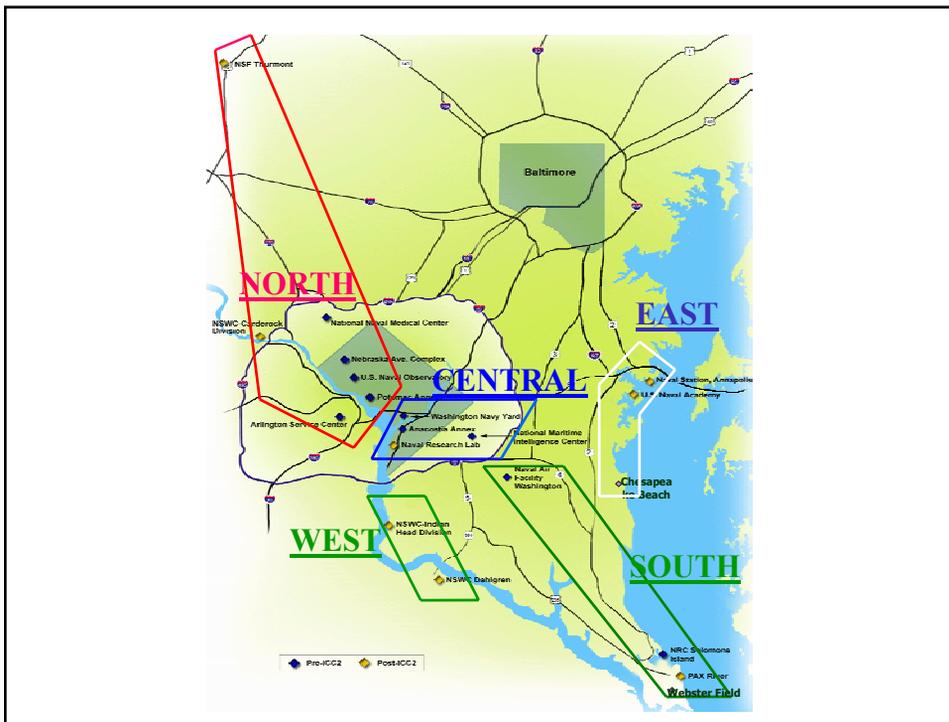
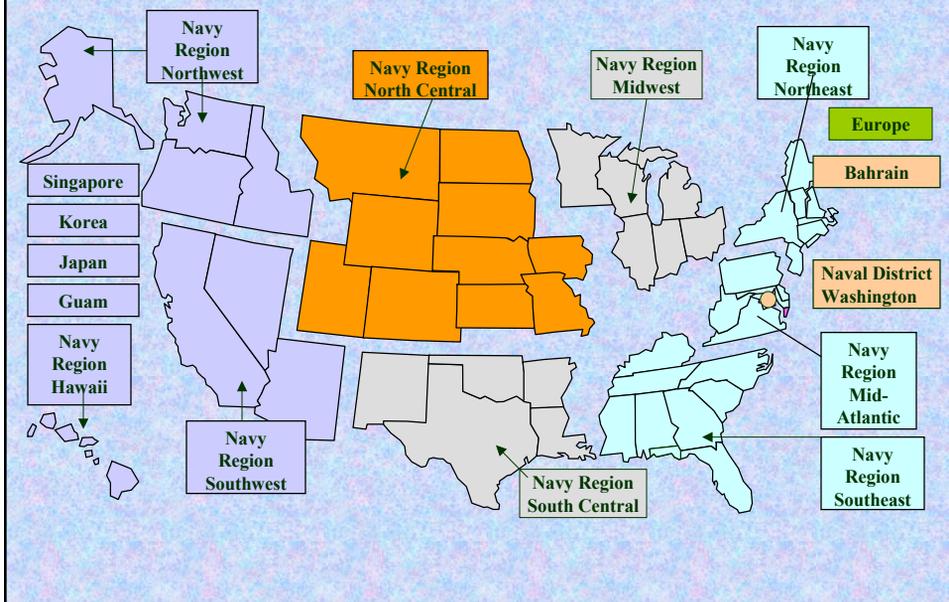
**INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER
INSTALLATION RESTORATION (IR) PROGRAM
RESTORATION ADVISORY BOARD (RAB) MEETING
AGENDA**

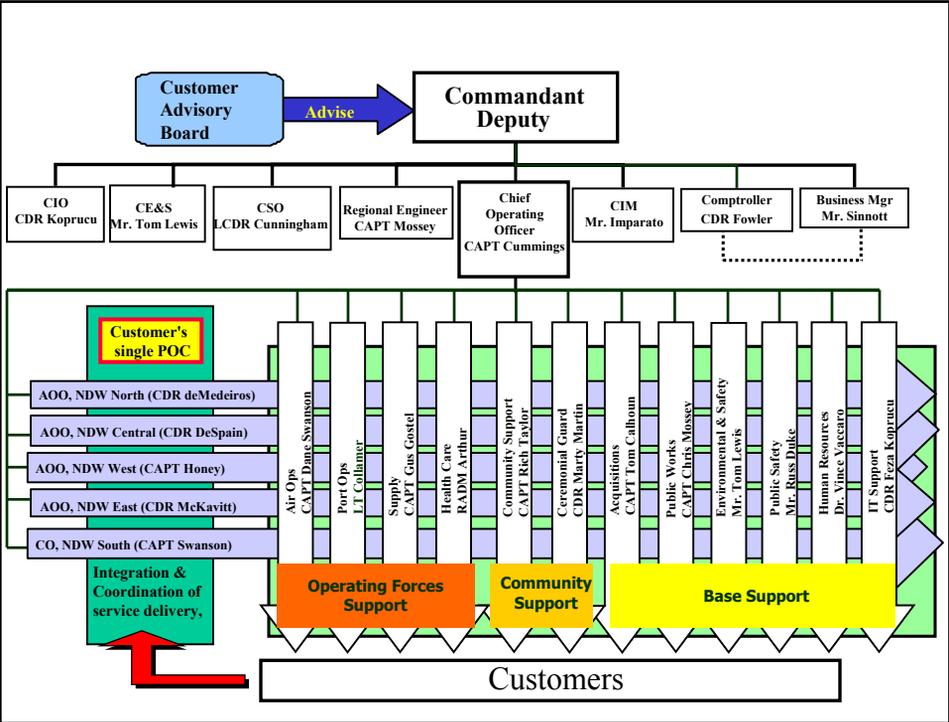
October 16, 2003

- 5:00 - 5:05** **ARRIVAL/WELCOME**
Mr. Shawn Jorgensen
Command, Naval Installations (CNI)/Naval District Washington (NDW)
IR Project Manager/Acting Supervisor
- 5:05 – 5:15** **COMMAND, NAVAL INSTALLATIONS (CNI) TRANSITION**
Mr. Tom Lewis
CNI/NDW
Environmental Manager
- 5:15 – 5:30** **SITE 12 REMOVAL ACTION UPDATE**
Mr. Shawn Jorgensen
- 5:30 - 5:40** **STATUS OF SITES 13 AND 25 PROPOSED PLANS**
Ms. Heidi Morgan
CNI/NDW
IR Project Manager
- 5:40 – 6:00** **SITE 42 FINAL FEASIBILITY STUDY (FS) REPORT**
Mr. Shawn Jorgensen
- 6:00 – 6:20** **SITE 57 PILOT STUDY UPDATE**
Mr. Shawn Jorgensen
- 6:20 – 6:35** **IR BUDGET FOR FISCAL YEAR 2004**
Mr. Joe Rail
Engineering Field Activity Chesapeake (EFACHES)
IR Program Manager
- 6:35 - 7:00** **COMMENTS, QUESTIONS, AND ANSWERS**
- 7:00** **ADJOURN**

Present Navy Regional Commands

16 Regions (10 CONUS, 6 OCONUS)







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



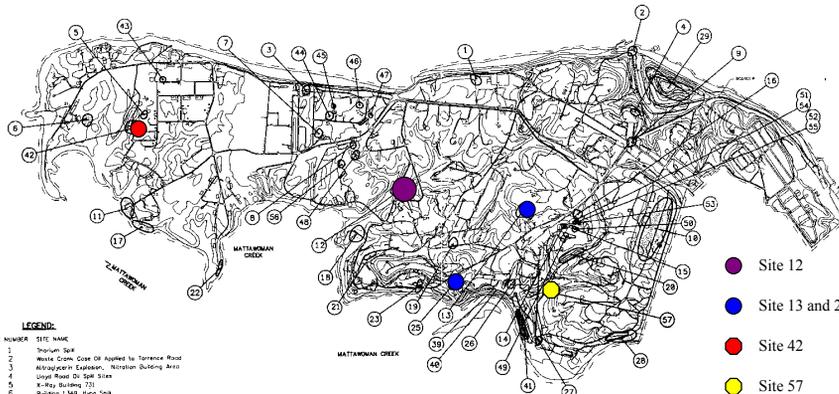
**Site 12 – Town Gut Landfill
Removal Action Update**

Shawn Jorgensen
IR Project Manager

October 16, 2003



**NSWC Indian Head
IR Site Map**



LEGEND:

SITE NUMBER	SITE NAME
1	Thorium Spill
2	Waste Clean Up of Spilled to Terrace Road
3	Asbestos Contaminated - Recreation Building Area
4	Large Road Dr. Spill Sites
5	K-Hey Building 751
6	Building 1345, Pogo Park
7	Building 682, IRM Spill
8	Building 180, Mercury Deposits
9	Waterproof Breach On Spill
10	Single-base Phosphate Oxide Spill
11	Carbon Black Landfill
12	Lean Oil Landfill
13	Paint Spills on Grassy Ground
14	Waste Acid Chemical Pit
15	Mercury Deposits in Washbasin, Pharmacy Lab
16	Laboratory Chemical Spill
17	Disposal Metal Parts Along Shoreline
18	Waste Island

19	Catch Basins at Oil Collection Houses
20	Single-base Phosphate Facilities
21	Ballroom Floor Leaks
22	HQ Waste Burning Site
23	Impoundment of Spill Discharges from Extraction Plant
24	Abandoned Open Lines
25	Waste Discharge at New Building No. 2
26	Thermal Destructor 2
27	Thermal Destructor 1
28	Original Burning Ground

30	Original Plant Outfall
40	Polysulfone Catalyst in Sediments
41	Sludge Vial
42	Open Pore Landfill
43	Yellow Chemical Spill
44	Spill Cont. Area
45	Abandoned Drums
46	Chromium Sulfate Spill
47	Mercury Inactive Disposal Area
48	Asbestos/Lead/PCB/Polysulfone Area

33-38	Sludge Neck Areas (SEE FIGURE 3-2)
49	Chemical Disposal Area
50	Building 180: Crust Spill
51	Building 180: Dry Wall
52	Building 180: Dry Wall
53	Mercury Contamination of the Drainage System
54	Building 180
55	Building 180
56	IRM? - Lean Contamination
57	TGC Building 292 Area

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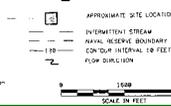
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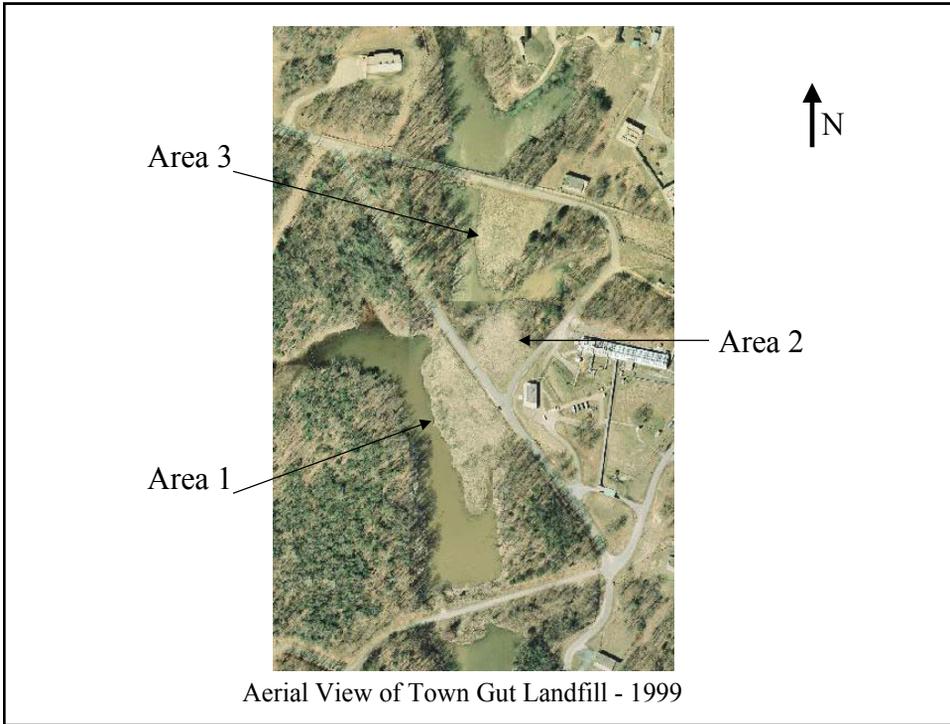
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Site 12 – Town Gut Landfill Removal Action Update



- *Waste Disposed*
 - 10 Tons of Scrap Steel
 - 2 Tons of Tires
 - 104 Tons of Debris (concrete, wood, etc.)
 - 5 85-Gallon Drums of Hazardous Waste
- *Materials Used*
 - 6,180 Tons of Topsoil
 - 21,840 Tons of Select Fill
 - 508 Tons of RC-6 (Recycled Concrete)
 - 302 Tons of Rip Rap
 - 223 Tons of Stone



Site 12 – Town Gut Landfill Removal Action Update



- *Schedule*

- *September 4, 2002 - Removal Action began*
- *February 7, 2003 - Temporarily demobilized due to winter weather*
- *April 4, 2003 - Remobilized*
 - *Planted Wetland Plants*
 - *Paved Atkins Road*
- *April 16, 2003 - Demobilized (too wet to install wells)*
- *July 16, 2003 – Remobilized*
 - *Installed Monitoring Wells*
 - *Fixed Erosion Issues*
- *July 29, 2003 – Demobilized*
- *October 13, 2003 – Investigative Derived Waste Disposed and Removal Action Complete*



One of Seven Monitoring Wells Installed (Well S12MW011)



Site 12 – Town Gut Landfill Removal Action Update



- *Cost to Date of Removal Action*
 - *~\$1.2 M (increased \$243K in FY03 due to weather delays)*
- *Total Cost to Date for Site 12*
 - *~\$1.6 M includes:*
 - *Removal Action*
 - *Remedial Investigation*



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



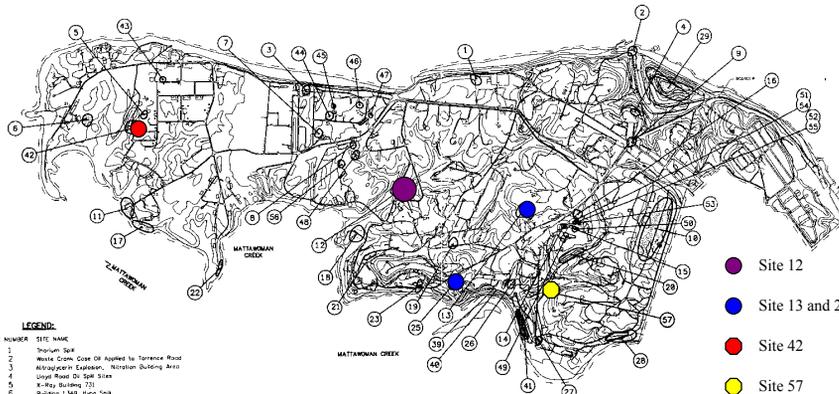
Status of Sites 13 and 25 Proposed Plans

Heidi Morgan
IR Project Manager

October 16, 2003



**NSWC Indian Head
IR Site Map**



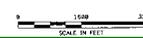
LEGEND:

SITE NUMBER	SITE NAME
1	Thorium Spill
2	Waste Canister Cover Oil Spilled to Terrace Road
3	Anthracene Contaminant - Recreation Building Area
4	Unlabeled Road Dr. Spill Sites
5	K-Hex Building 751
6	Building 1342, Pogo Saw
7	Building 682, Inlet Spill
8	Building 185, Mercury Deposits
9	Waterproof Breach Oil Spill
10	Single-base Propellant Cracks Seal
11	Cracks Road Lined
12	Lean Oil Leach
13	Paint Spillouts (Dioxin) Ground
14	Waste Acid Container PI
15	Mercury Deposits at Washline, Plastics Lab
16	Leakage Chemical Disposal
17	Disposal Metal Parts Along Shoreline
18	Wet Island

19	Crack Beams at Oil Collection Houses
20	Single-base Powder Facilities
21	Ballroom Floor Leach
22	HQ Waste Burning Site
23	Impoundment of Salt Discharges from Extraction Plant
24	Abandoned Open Lines
25	Waste Discharge at New Building No 2
26	Thermal Destructor 2
27	Thermal Destructor 1
28	Original Burning Ground
29	330-38
30	Original Plant Outfall
40	Polonium Catalyst in Sediments
41	Sludge Vial
42	Crack Pore Leach
43	Yellow Chemical Site
44	Spill Cont. Area
45	Abandoned Drums
46	Calcium Sulfide Spill
47	Mercury Inertial Disposal Area
48	Abandoned/Leak/Spill/Disposal Area
49	Chemical Disposal Area
50	Building 180: Crack Seals
51	Building 180: Dry Wall
52	Building 180: Dry Wall
53	Mercury Contamination of the Drainage System
54	Building 180
55	Building 180
56	IMBT - Lean Contamination
57	TDC Building 252 Area

- Site 12
- Site 13 and 25
- Site 42
- Site 57

- APPROXIMATE SITE LOCATION
- INTERMITTENT STREAM
- PERMANENT STREAM
- MAIN RECEIPT BOUNDARY
- 100' CONT'D INTERVAL 100 FEET
- FLOW DIRECTION





Site 13 - Paint Solvents Disposal Ground



- *Background*
 - *Approximately 200 square-foot area located behind Building 870*
 - *Contains paint-related wastes - thinners, solvents, and used paint*
 - *Disposal took place from 1953 to 1979*
 - *Estimated 20,000 pounds of waste disposed (~2,000 gallons)*



Site 13 Paint Solvents Disposal Ground





Site 13

Paint Solvents Disposal Ground



- *Investigation Revealed*
 - *No Unacceptable Risk to Human Health or Ecological Receptors*
- *Tentative Schedule*
 - *November 2003 – Final Remedial Investigation Report*
 - *January 2004 – Final No Further Action Proposed Plan*
 - *2005 – Record of Decision*
- *Cost to Date*
 - *140K (approx.)*



Site 25 - Hypo Discharges From X-Ray

Building No. 2



- *Background*
 - *Drainage swales located behind Building 588*
 - *Contains silver from spent fixer and developer used to process x-ray film*
 - *Discharged from 1944 - 1964*
 - *Estimated 864 pounds of silver discharged*



Site 25

Hypo Discharges From X-Ray Building No. 2



7



Site 25

Hypo Discharges From X-Ray Building No. 2



- *Investigation Revealed*
 - *No Unacceptable Risk to Human Health or Ecological Receptors*
- *Tentative Schedule*
 - *November 2003 – Final Remedial Investigation Report*
 - *March 2004 – Final Proposed Plan*
 - *April 2004 – Record of Decision*
- *Cost to Date*
 - *160K (approx.)*

8



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



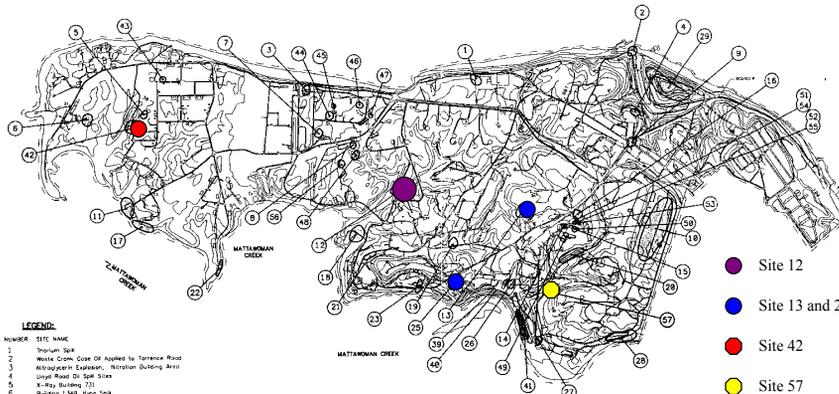
**Site 42 - Olsen Road Landfill
Feasibility Study (FS) Report**

Shawn Jorgensen
IR Project Manager

October 16, 2003



**NSWC Indian Head
IR Site Map**



LEGEND:

SITE NUMBER	SITE NAME
1	Thorium Spill
2	Waste Canister Cover Oil Spilled to Terrace Road
3	Anthracene Contaminant - Recreation Building Area
4	Urethane Road Dr. Spill Sites
5	K-Hex Building 751
6	Building 1345, Pogo Saw
7	Building 682, Inkjet Spill
8	Building 185, Mercury Deposits
9	Waterproof Membrane Oil Spill
10	Single-base Phosphate Oxide Spill
11	Carbon Black Leachate
12	Lean Oil Leachate
13	Paint Spill/Leachate (Pentacene Ground)
14	Waste Acid (Sulfuric Acid)
15	Mercury Deposits in Washbasin, Pharmacy Lab
16	Leachate, Chemical Disposal
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- Site 12
- Site 13 and 25
- Site 42
- Site 57
- APPROXIMATE SITE LOCATION
- INTERMITTENT STREAM
- PERMANENT STREAM
- MAJOR RECEIVING BOUNDARY
- 1:100 CONT'DR. INTERVAL 100 FEET
- FLOW DIRECTION
- 0 1000 2000
- SCALE IN FEET

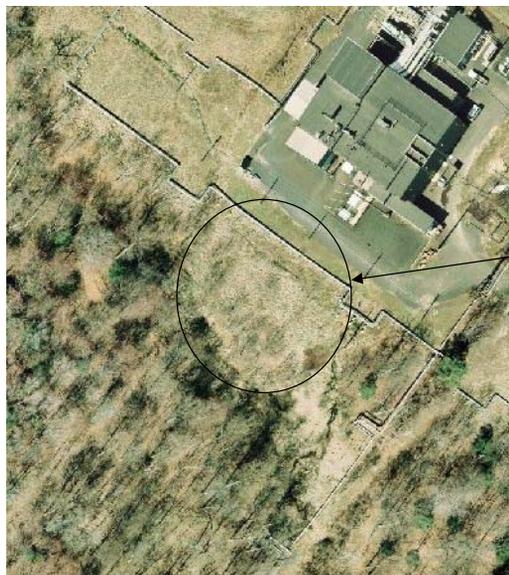


FS Report Site 42



- *Background*

- *Construction debris deposited at the site for a 5-year period ending in 1987*
- *Remedial Investigation (RI) completed in July 1999*
- *Pre-FS Fieldwork (sediment sampling) conducted in September 1999*
- *Toxicity testing conducted in September 1999*
- *Toxicity Identification Evaluation (TIE) conducted October 2000*
- *Additional Fieldwork conducted January 2002 and February 2003 to better define the extent of the landfill (test pits excavated) and ensure contamination is not migrating off-site (three downgradient monitoring wells installed)*



Olsen
Road
Landfill

Aerial View of Olsen Road Landfill - 1999



NSWC Indian Head IR Site 42 Photo



5



FS Report Site 42



- *Purpose of FS*
 - *Evaluate alternatives to mitigate potential ecological risks*
 - *Evaluate alternatives to comply with Maryland Department of the Environment (MDE) landfill closure requirements (Applicable or Relevant and Appropriate Requirements – ARARs)*

6



FS Report Site 42



- *Alternatives Evaluated*
 - *Alternative 1 - No Action*
 - *Alternative 2 - Operational Soil Cover with Land Use Controls*
 - *Alternative 3 - Soil Cover with Land Use Controls*
 - *Alternative 4 - Engineered Cap with Land Use Controls*
 - *Alternative 5a - Partial Landfill Removal with Land Use Controls*
 - *Alternative 5b – Complete Landfill Removal with Land Use Controls*
- *Land Use Controls include items, such as:*
 - *Prohibiting residential use of the land*
 - *Restricting use of shallow groundwater at the site*
 - *Restricting intrusive activities at the site, such as digging*



FS Report Site 42



- *Alternative evaluation and comparison*
- | | | |
|----------------------------|---|--|
| Threshold Criteria | { | <ul style="list-style-type: none">– <i>Overall protection of human health and the environment</i>– <i>Compliance with ARARs</i>– <i>Long-term effectiveness and permanence</i> |
| Primary Balancing Criteria | { | <ul style="list-style-type: none">– <i>Reduction of toxicity, mobility or volume through treatment</i>– <i>Short-term effectiveness</i>– <i>Implementability</i>– <i>Cost</i> |
| Modifying Criteria | { | <ul style="list-style-type: none">– <i>State Acceptance</i>– <i>Community Acceptance</i> |



FS Report Site 42



<i>Alternative</i>	<i>Protect HH&Env</i>	<i>ARAR Comp</i>	<i>LT Effect</i>	<i>Imp</i>	<i>Cost</i>	<i>MDE/ EPA</i>	<i>Community</i>
<i>1-No Action</i>	<i>low</i>	<i>low</i>	<i>low</i>	<i>high</i>	<i>\$ 0</i>	<i>TBD</i>	<i>TBD</i>
<i>3-Soil Cover</i>	<i>med</i>	<i>med</i>	<i>med</i>	<i>med</i>	<i>\$ 1,215,300</i>	<i>TBD</i>	<i>TBD</i>
<i>4-Eng Cap</i>	<i>med</i>	<i>high</i>	<i>med</i>	<i>med</i>	<i>\$ 1,881,000</i>	<i>TBD</i>	<i>TBD</i>
<i>5-Partial Removal</i>	<i>high</i>	<i>high</i>	<i>high</i>	<i>med</i>	<i>\$ 1,858,400</i>	<i>TBD</i>	<i>TBD</i>
<i>5b - Complete Removal</i>	<i>high</i>	<i>high</i>	<i>high</i>	<i>med</i>	<i>\$ 2,355,800</i>	<i>TBD</i>	<i>TBD</i>

Protect HH&Env – Protection of Human Health and the Environment

ARAR Comp – Compliance with ARARs

LT Effect – Long-Term Effectiveness

Imp – Implementability

TBD – To Be Determined

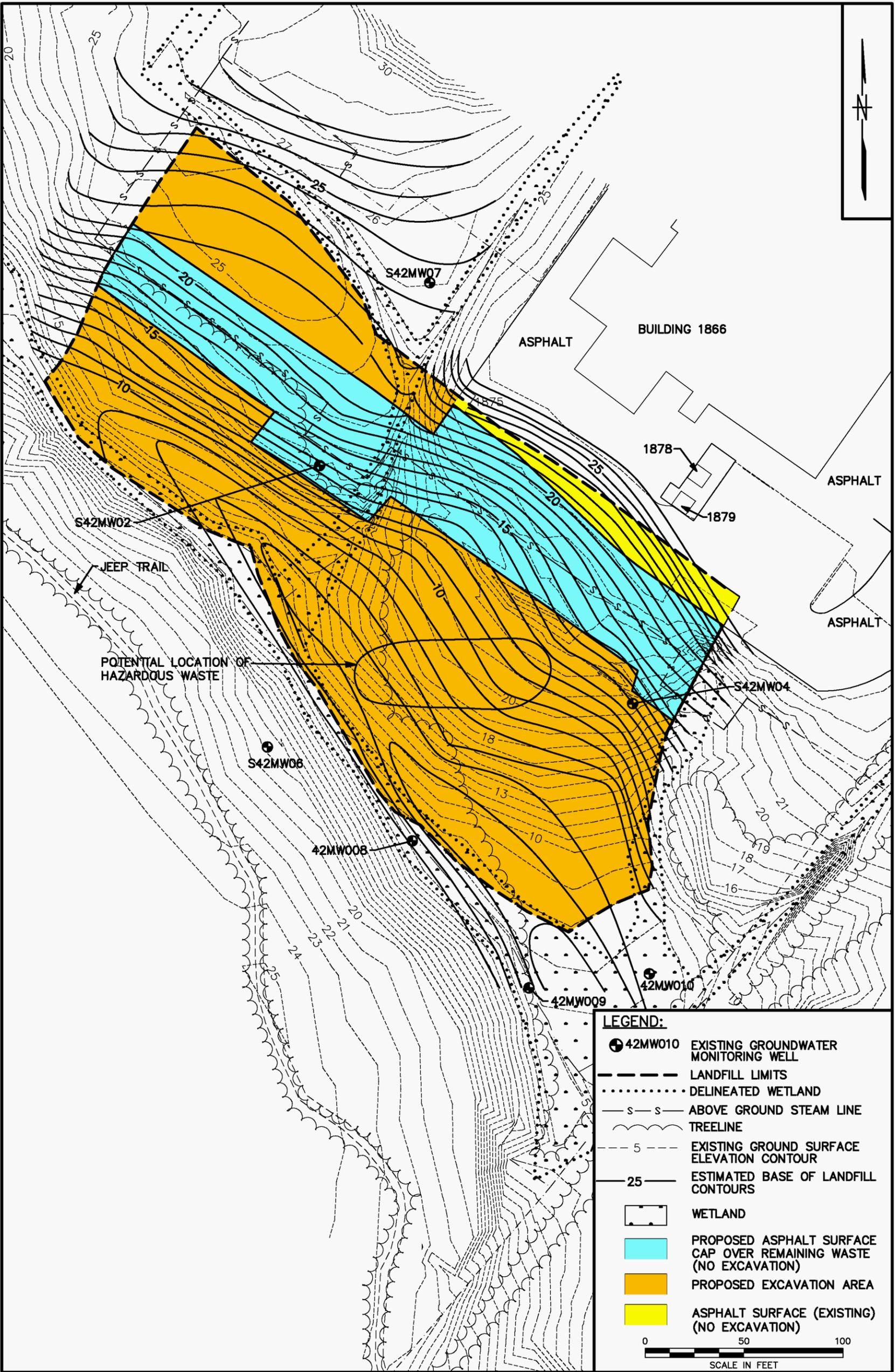
Note: Costs listed are Net Present Worth and include Capital plus
Operation and Maintenance



FS Report Site 42



- *Future Schedule*
 - *Proposed Plans – July 2004*
 - *Public Meeting for Proposed Plans – After July 2004*
 - *Record of Decision – February 2005*
 - *Remedial Action – After June 2005*
- *Cost to Date*
 - *~ \$700,000*



LEGEND:

- 42MW010 EXISTING GROUNDWATER MONITORING WELL
- LANDFILL LIMITS
- DELINEATED WETLAND
- s-s- ABOVE GROUND STEAM LINE
- ~ TREELINE
- 5- EXISTING GROUND SURFACE ELEVATION CONTOUR
- 25- ESTIMATED BASE OF LANDFILL CONTOURS
- WETLAND
- PROPOSED ASPHALT SURFACE CAP OVER REMAINING WASTE (NO EXCAVATION)
- PROPOSED EXCAVATION AREA
- ASPHALT SURFACE (EXISTING) (NO EXCAVATION)

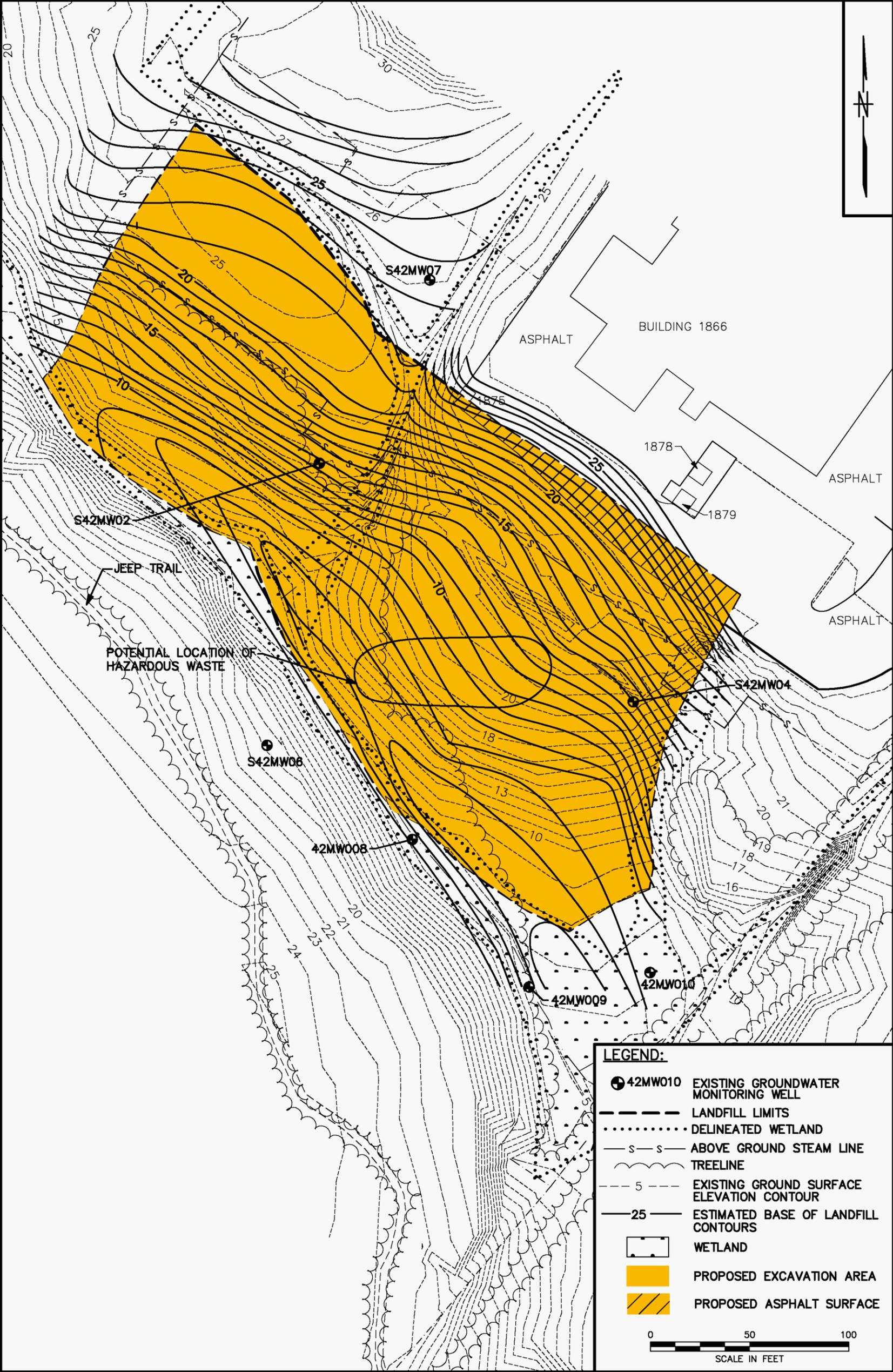
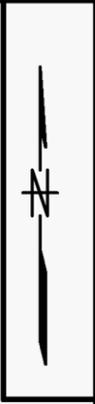
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SCALE IN FEET

DRAWN BY DM	DATE 6/25/03
CHECKED BY TWS	DATE 7/10/03
COST/SCHED-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

PARTIAL LANDFILL REMOVAL ALTERNATIVE 5A
SITE 42-OLSEN ROAD LANDFILL
IHDIV-NSWC
INDIAN HEAD, MARYLAND

CONTRACT NO. 4020	OWNER NO. 0805
APPROVED BY GJL	DATE 7/10/03
APPROVED BY	DATE
DRAWING NO. FIGURE 6-4	REV. 0



DRAWN BY DM	DATE 6/26/03
CHECKED BY TWS	DATE 7/10/03
COST/SCHED-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

COMPLETE LANDFILL REMOVAL ALTERNATIVE 5B
 SITE 42-OLSEN ROAD LANDFILL
 IHDIV-NSWC
 INDIAN HEAD, MARYLAND

CONTRACT NO. 4020	OWNER NO. 0805
APPROVED BY GJL	DATE 7/10/03
APPROVED BY	DATE
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NAVAL SURFACE WARFARE CENTER
INDIAN HEAD DIVISION
RESTORATION ADVISORY BOARD



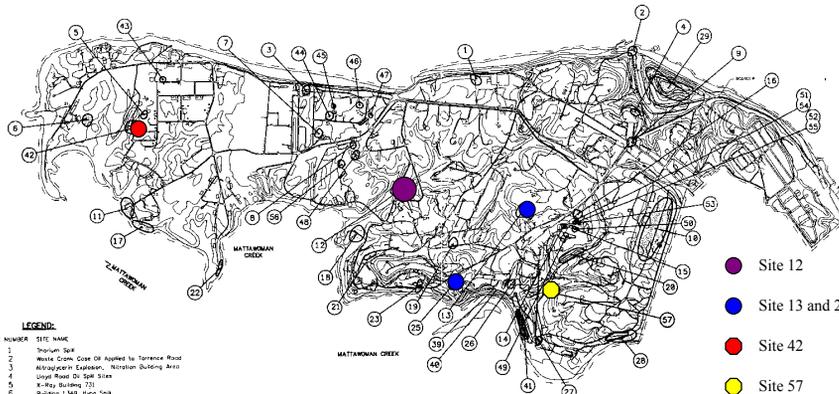
Site 57 – Trichloroethylene
Pilot Study Update
HRC® and ISOCT™

Shawn Jorgensen
IR Project Manager

October 16, 2003



NSWC Indian Head
IR Site Map

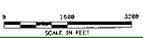


LEGEND:

SITE NUMBER	SITE NAME
1	Thorium Spill
2	Waste Clean Coat Oil Spilled to Terrace Road
3	Anthracene Contaminant - Recreation Building Area
4	Unplanned Road Dr. Spill Sites
5	K-Hey Building 750
6	Building 1340, Pogo Park
7	Building 682, Inlet Spill
8	Building 180, Mercury Deposits
9	Waterproof Membrane Oil Spill
10	Single-base Phosphate Oxide Spill
11	Carbon Black Leachate
12	Lean Oil Leachate
13	Paint Spill on Concrete Ground
14	Waste Acid Disposal Pit
15	Mercury Deposits in Washbasin, Phosphate Lab
16	Laboratory Chemical Disposal
17	Disposal Metal Parts Along Shoreline
18	Waste Island

19	Crutch Beams at Oil Collection Hoop
20	Single-base Phosphate Facilities
21	Ballroom Floor Leachate
22	HQ Waste Burning Site
23	Impoundment of Spill Discharges from Extraction Plant
24	Abandoned Open Lines
25	Waste Discharge at Rear Building No. 2
26	Thermal Destructor 2
27	Thermal Destructor 1
28	Original Burning Ground
29	Crutch Beams at Oil Collection Hoop
30	Original Plant Outline
40	Polysulfone Catalyst in Sediments
41	Sludge Vial
42	Crutch Beams Leachate
43	Yellow Chloride Site
44	Spill Cont. Area
45	Abandoned Drums
46	Calcium Sulfide Site
47	Mercury Inertial Disposal Area
48	Abandoned/Leachate/Disposal Area
49	Chemical Disposal Area
50	Building 180: Crutch Beams
51	Building 180: Dry Wall
52	Building 180: Dry Wall
53	Mercury Contamination of the Drainage System
54	Building 180
55	Building 180
56	IMBT - Lean Contamination
57	TCE Building 202 Area

- APPROXIMATE SITE LOCATION
- INTERMITTENT STREAM
- PERMANENT STREAM
- MAJOR RECEIVING BOUNDARY
- CONTOUR INTERVAL 10 FEET
- FLOW DIRECTION

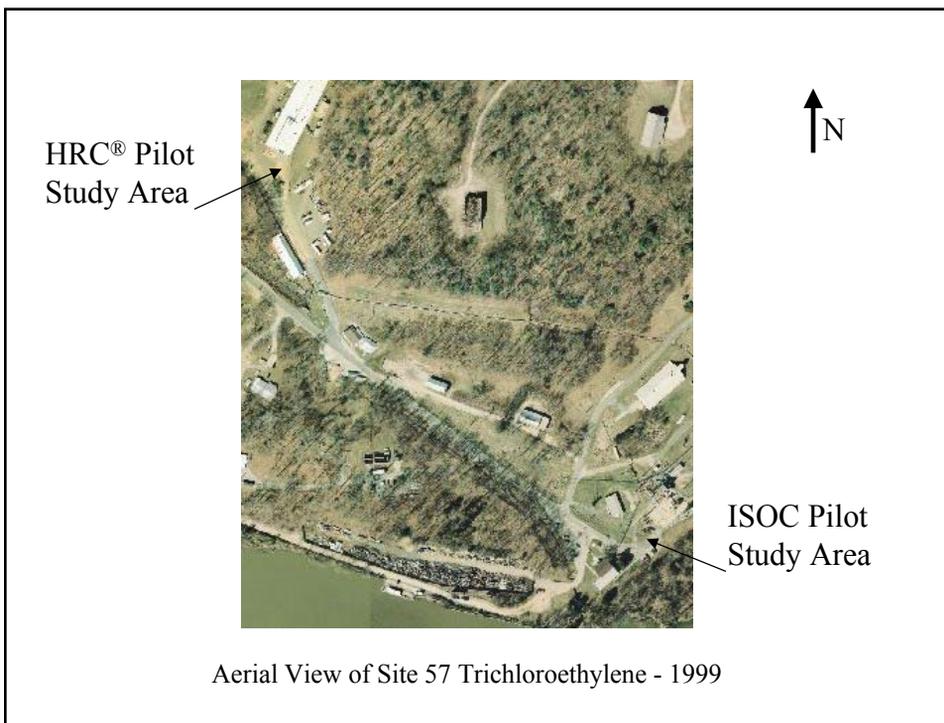




Site 57 HRC[®] Pilot Study



- *Purpose of Pilot Study*
 - *To determine if Hydrogen Release Compound[®] (HRC[®]) could be used to accelerate bioremediation of trichloroethylene in the shallow groundwater at IR Site 57.*
- *HRC[®]*
 - *Degrades in the environment by hydrolysis to lactic acid and glycerol*
 - *Provides food for microbes*
 - *Fosters anaerobic conditions*
 - *Facilitates breakdown of trichloroethylene (TCE) by microbes*
 - *Is Propanoic acid, 2-[2-[2-(2-hydroxy-1-oxopropoxy)-1-oxopropoxy]-1-oxopropoxy]-1,2,3-propanetriyl ester*





HRC[®] Pilot
Study Area

Aerial View of Site 57 Trichloroethylene HRC[®] Pilot Study Area - 1999



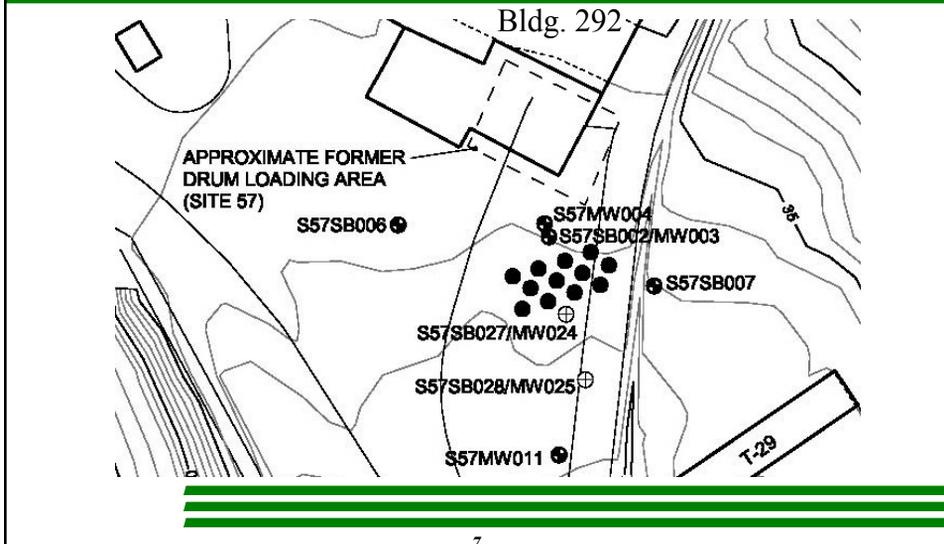
Site 57 HRC[®] Pilot Study



- *Pilot Study included:*
 - *Installing two monitoring wells downgradient of pilot study area*
 - *Sampling shallow groundwater in monitoring wells upgradient and downgradient of pilot study area prior to using HRC[®]*
 - *Injecting HRC[®] into the shallow groundwater (6 to 12 feet deep) at 12 locations in a 10-foot by 28-foot grid downgradient of Building 292*
 - *Resampling wells at predetermined intervals after injection of HRC[®] into the shallow groundwater to determine effectiveness*



Site 57 HRC® Pilot Study



7



Site 57 HRC® Pilot Study



- *Six-month pilot study began week of 12 May 2003*
 - *Groundwater samples taken 13 May 2003 prior to HRC® injection*
 - *Groundwater samples taken or to be taken in the future*
 - *Month 1: 19 and 20 June 2003*
 - *Month 2: 29 and 30 July 2003*
 - *Month 4: 25 and 26 September 2003*
 - *Month 6: 20 and 21 November 2003*
- *Findings report of pilot study expected in early 2004*

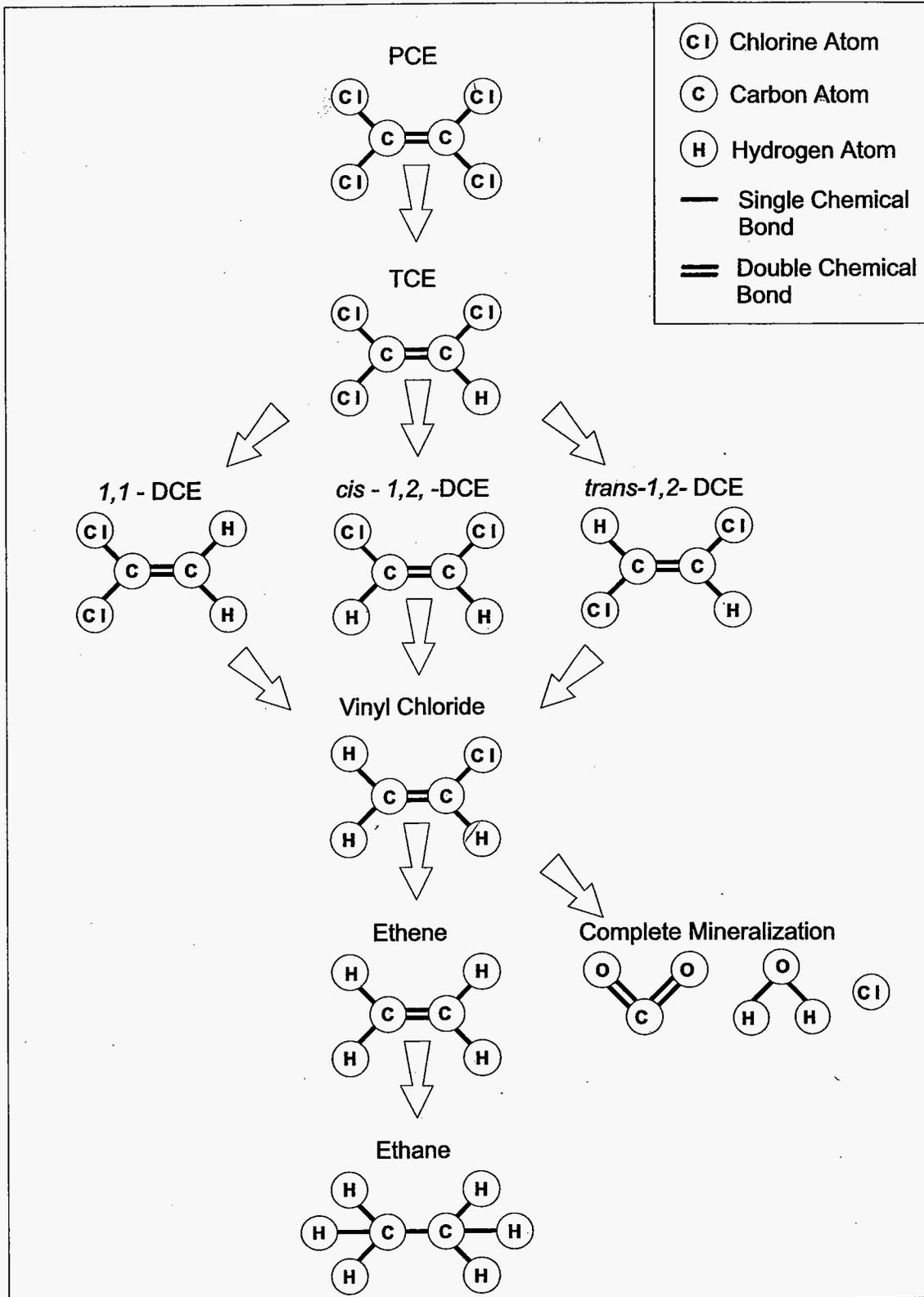
8



Site 57 - Pilot Study Area Prior to HRC® Injection

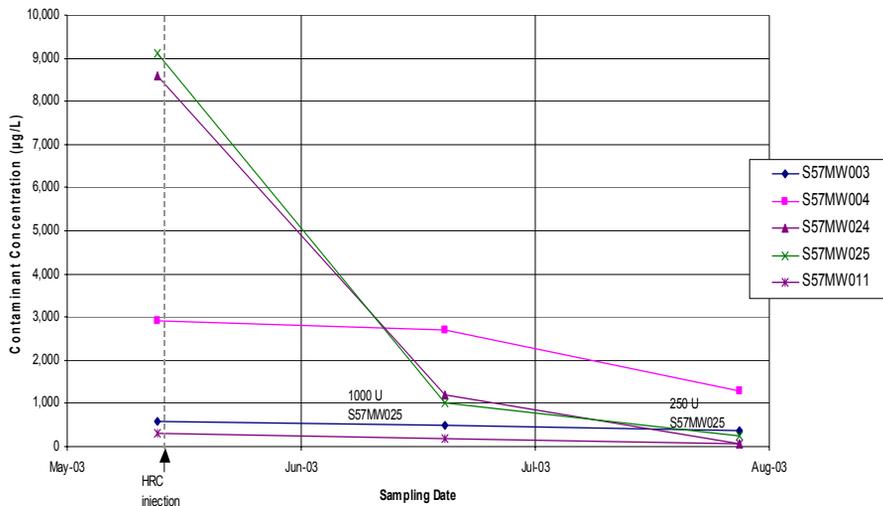


Site 57 - Pilot Study After Fieldwork Completed



Degradation Diagram

Figure 1
Trichloroethene (TCE) in Groundwater at Indian Head Site 57
2003 Data



Site 57 ISOC™ Pilot Study



- *Purpose of Pilot Study*
 - *To determine if In Situ Aerobic Bioremediation could be used to accelerate bioremediation of chlorinated volatile organic compounds (VOCs) in the shallow groundwater downgradient of IR Site 57.*
- *In Situ Submerged Oxygen Curtain (ISOC™)*
 - *Fosters aerobic conditions*
 - *Facilitates breakdown of VOCs by microbes*



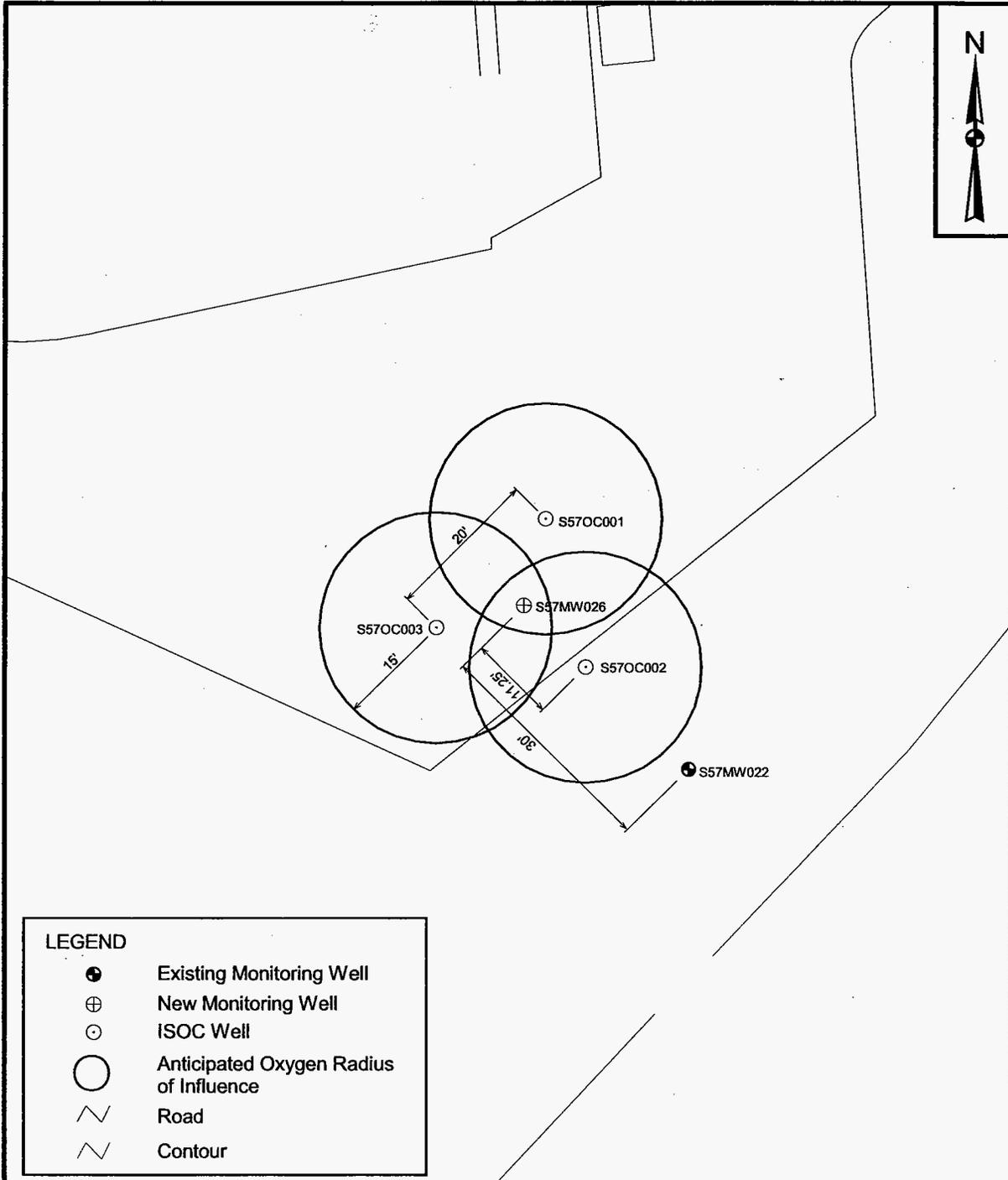
Site 57 – ISOC Pilot Study Area



Site 57 ISOC™ Pilot Study



- *Pilot Study includes:*
 - *Installing one monitoring well and three ISOC wells surrounding the monitoring well*
 - *Sampling shallow groundwater in monitoring well surrounded by ISOC wells and sampling downgradient well prior to injecting oxygen*
 - *Inject oxygen into ISOC wells*
 - *Resampling wells at predetermined intervals after injection of oxygen into the ISOC wells to determine effectiveness*

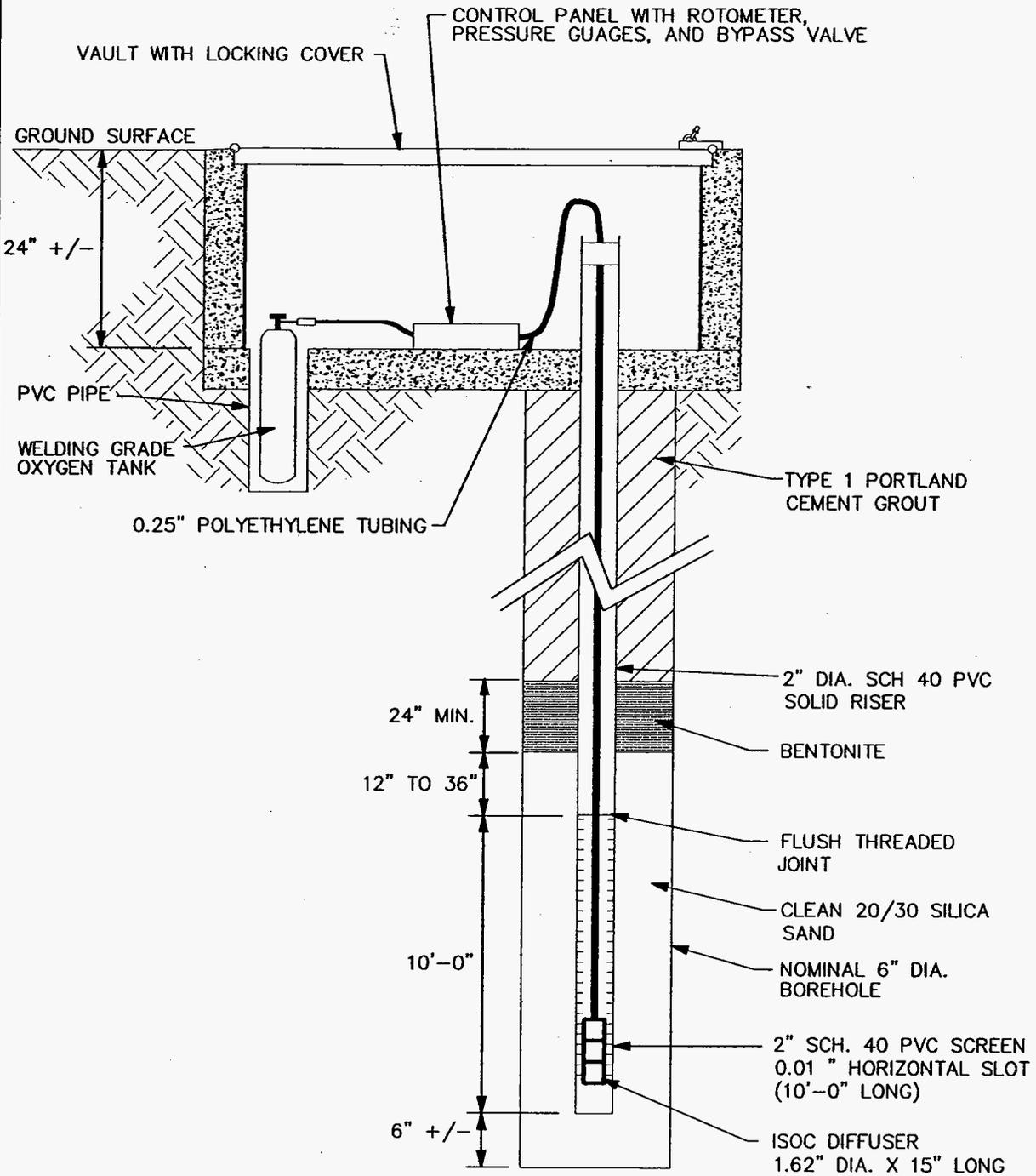


LEGEND	
●	Existing Monitoring Well
⊕	New Monitoring Well
⊙	ISOC Well
○	Anticipated Oxygen Radius of Influence
~	Road
∩	Contour



DRAWN BY K. PEILA CHECKED BY R. JUPIN COST/SCHEDULE-AREA SCALE AS NOTED	DATE 6/20/03 DATE 6/20/03 SCALE AS NOTED	Tetra Tech NUS, Inc. ISOC WELL INSTALLATION SITE 57 - BUILDING 292 TCE CONTAMINATION AREA IH DIV - NSWC INDIAN HEAD, MARYLAND	CONTRACT NUMBER 4020 APPROVED BY G. LATULIPPE APPROVED BY DRAWING NO. FIGURE 2-1	OWNER NO. 805 DATE 6/20/03 DATE REV 0
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ACAD: 4020CD02.dwg 07/10/03 HJB PIT



DRAWN BY HJB DATE 6/7/03	Tetra Tech NUS, Inc.	CONTRACT NO. 4020	OWNER NO.
CHECKED BY GJL DATE 6/10/03	ISOC WELL CONSTRUCTION SITE 57-BUILDING 292 TCE CONTAMINATION AREA IHDIV-NSWC INDIAN HEAD, MARYLAND	APPROVED BY GJL DATE 6/10/03	DATE 6/10/03
COST/SCHED-AREA		APPROVED BY	DATE
SCALE NOT TO SCALE		DRAWING NO. FIGURE 4-1	REV. 0



Site 57 ISOC™ Pilot Study



- *Six-month pilot study to began in 2004*
 - *Groundwater samples to be taken prior to oxygen injection*
 - *Additional groundwater samples to be taken in the future*
 - *One Month after ISOC™ startup*
 - *Two Months after ISOC™ startup*
 - *Four Months after ISOC™ startup*
 - *Six Months after ISOC™ startup*
- *Findings report of pilot study expected in late 2004*



Site 57 HRC® Pilot Study



- *Dollars Spent on Site 57*
 - *HRC® Pilot Study - \$163 K*
 - *Estimate for ISOC™ Pilot Study – 110 K (not yet funded)*
 - *Total Spent to Date - ~\$1.6 M*
 - *Remedial Investigation (RI)*
 - *Soil removal for dock extension*
 - *Soil vapor extraction (SVE) pilot study*
 - *Removal Action – pipe relining*
 - *HRC pilot study*
 - *Feasibility Study (FS)*
 - *Proposed Plan*
 - *Record of Decision (ROD)*



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



**Installation Restoration
Funding and Plans for Fiscal Year 2004**

*Joe Rail
Remedial Project Manager
Engineering Field Activity Chesapeake
October 16, 2003*



**NSWC Indian Head
IR Program FY 2003 Execution**



<u>Sites</u>	<u>Project</u>	<u>Awarded</u>
Site 12	Remedial Action	\$106,362
Sites 12, 41, 42	Design Review/PCAS	\$257,070
Site 57	Pilot Study	\$162,995
Sites 6, 39, 45	Remedial Investigation	\$264,619
Various Sites	Historical Investigation	\$25,000
Various Sites	Risk Assessment Support	\$27,151
Site 17	Drum Removal	\$136,861
Total		\$980,058



NSWC Indian Head FY 2004 Planned Execution



<u>Sites</u>	<u>Project</u>	<u>Planned Award (Est)</u>
Site 12	Long-Term Monitoring	\$60,000
Site 17	Interim Removal Action	\$1,900,000
Site 57	Remedial Design	\$69,000
Sites 14, 15, 16, 49, 50, 53, 54, 55 (Lab Area), 47	Baseline Ecological Risk Assessments	\$244,000
Site 28	Baseline Ecological Risk Assessment, Remedial Design	\$394,000
Total		\$2,667,000

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 16, 2003

Arrival/Welcome

No questions were asked nor comments made during this topic.

Command, Naval Installations (CNI) Transition

No questions were asked nor comments made during this topic.

Update On Site 12 Removal Action

Question: Will we receive a copy of the final report?

Answer: We will send a copy of the final completion report to Restoration Advisory Board members.

Question: Where did the name "Town Gut" come from?

Answer: We are not sure.

Question: Is this landfill located in the Restricted Area?

Answer: Yes.

Update on Site 13 and 25 No Further Action Proposed Plans

Question: What is the process for determining that there are no human health or ecological risks?

Answer: Sampling of surface soil, subsurface soil, and sometimes groundwater are obtained during the Remedial Investigation. A screening risk assessment is performed by comparing the sample results to EPA screening values, which are called Risk Based

Concentrations. If none of the results for the chemicals sampled exceed the screening values, then there are no unacceptable risks posed by the site.

Update on Site 42 Feasibility Study (FS)

Question: If silver was not causing the toxicity in the ditch, then why are we removing the landfill?

Answer: Silver was a concern in the ditch, which is at the toe of the landfill. Trichloroethylene (TCE) is a concern within the landfill. In addition, the Maryland Department of the Environment (MDE) requires us to properly close all landfills.

Question: Where will the waste (material) from the landfill be disposed?

Answer: It will be sent to an approved landfill.

Question: What landfill was the waste from Site 12 sent to?

Answer: We will check on that. The landfill(s) that the waste was sent to will be provided in the final completion report for the removal action that was conducted at Site 12.

Question: How much waste will be removed from Site 42?

Answer: We will look into the estimates in the FS report and provide them in the letter forwarding the meeting minutes.

Question: Is there a requirement for sampling monitoring wells? Are the wells sampled just once?

Answer: The wells that were originally installed for the remedial investigation (RI) at this site have been sampled a few times. It is not uncommon, however, to sample wells that were installed for an RI only once.

Wells that will be installed after the remedial action at this site are for long-term monitoring. These wells will be sampled on a regular basis. For example, all the wells at the site will be sampled every three months for the first year. This time period will extend to once every nine months, as long as groundwater conditions do not change substantially. After five years, the results of all the sampling will be looked at statistically for trends to determine if more or less sampling is needed in the future.

Update of Site 57 Pilot Study

Question: Are the results of the study and the technology published so others are aware of them.

Answer: Yes, technologies are on the EPA's website and the Navy has seminars on innovative technologies twice a year for Navy, contractor, and regulator personnel. In addition, information on innovative technologies is passed on within the environmental community regularly through various meetings and other forums.

IR Budget Update

Question: Is there special funding for the IR Program?

Answer: Yes. The Navy has a separate line item in their budget for this cleanup program. The funding is called Environmental Restoration, Navy.

Question: Is Indian Head competing with other facilities for this funding?

Answer: ER,N funding is provided to the Naval Facilities Engineering Command (NAVFAC) by Congress. NAVFAC splits the money between their divisions, one of which is the Atlantic Division (LANTDIV). The Engineering Field Activity, Chesapeake (EFACHES) is a part of LANTDIV. EFACHES splits the money between the Activities, such as Indian Head, in their region. The sites with the highest priority are provided funding first, regardless of which Activity the site is located.

Question: What about the cleanup of ranges? Will they be cleaned up under the IR Program?

Answer: No. Ranges will be handled under the Military Munitions Response Program. A Preliminary Assessment is currently being performed, but only closed ranges will be addressed. In addition, funding for the cleanup portion of this program will not begin until fiscal year 2006 or 2007.

**INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER**

**INSTALLATION RESTORATION (IR) PROGRAM
RESTORATION ADVISORY BOARD (RAB)
MEETING AGENDA
(Tentative)**

February 19, 2004

- 1. Site 28 Remedial Investigation (RI) Preliminary Results**
- 2. Lab Area and Site 47 Baseline Ecological Risk Assessment (BERA)**
- 3. Site 57 Pilot Study Preliminary Results**
- 4. Site 17 Proposed Removal Action (Hot Spot and Drum Removal)**