PROPOSED PLAN
Site 42, Olsen Road Landfill
U.S. Navy Announces the Site 42 Proposed Plan
Naval District Washington, Indian Head
Indian Head, Maryland

Introduction

This **Proposed Plan** identifies the preferred alternative for a **remedial action** for the Olsen Road Landfill (Site 42) at Naval District Washington, Indian Head (NDW-IH) in Indian Head, Maryland. The Plan also provides the rationale for this recommendation, based on the investigative activities performed at Site 42 to date, and explains how the public can participate in the decision-making process. The location of NDW-IH and Site 42 are shown on Figure 1.

The Department of the Navy (Navy) (the lead agency for the site activities) and the United States Environmental Protection Agency Region 3 (EPA) (support agency), in consultation with the Maryland Department of the Environment (MDE) (support agency), issue this document as part of the public participation responsibilities under Title 40 of the Code of Federal Regulations (CFR), Section 300.430(f)(2). Title 40 CFR 300 is known as the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. This Proposed Plan summarizes information that can be found in greater detail in the **Remedial Investigation (RI)** report, **Feasibility Study (FS)** report, and other documents in the **Information Repository** for this site.

The Navy and EPA will jointly select the final remedy in consultation with MDE and may modify the preferred alternative or select another **remedy** after reviewing and considering all the information and comments submitted during the public **comment period**. Therefore, community involvement is critical, and the public is encouraged to review and comment on this Proposed Plan. After the public comment period has ended and the comments and information submitted during that time have been reviewed and considered, the Navy and EPA, in consultation with MDE, will document the action selected for the site in a **Record of Decision (ROD)**.

A glossary of specialized terms used in this Proposed Plan is attached. Words included in the glossary are indicated in **bold print** the first time they appear in the plan.

Mark Your Calendar for the Public Comment Period

Public Comment Period

July 1 to August 1, 2005

Submit Written Comments

The Navy, EPA, and MDE will accept written comments on the Proposed Plan during the public comment period. To submit comments or obtain further information, please refer to the insert page.

Attend the Public Meeting

Thursday, July 7, 2005 - 6:30 pm to 7:30 pm

Indian Head Senior Center
100 Cornwallis Square
Indian Head, MD

The public comment period will include a public meeting during which the Navy, EPA, and MDE will provide an overview of the site, previous investigative findings, remedial alternatives evaluated, and the Preferred Alternative, answer questions, and accept public comments.

Location of Information Repository

The Information Repository is available for public viewing at the following location:

Naval District Washington, Indian Head
General Library
Building 620 (The Crossroads)
101 Strauss Avenue, Indian Head, MD

Phone: 301-744-2263

Hours:
M-F 9:00 am – 5:30 pm
Sat/Sun closed

Site History

Site 42 comprises approximately 2 acres on the southwestern portion of NDW-IH. The site includes a portion of the paved area south of an operational building and the undeveloped land west, southwest, and south of the building (Figure 2). Between 1982 and 1987 and prior to construction of the building in 1992, the area was used as an unauthorized disposal site for solid wastes. Debris visible in the undeveloped portion of the site includes construction rubble (concrete and asphalt), unlabeled cans and drums, wooden pallets, and branches. Some debris from building construction may have been left at the site. There was no record of hazardous waste disposal nor was such disposal recalled by facility personnel.

NDW-IH was placed on the **National Priorities List (NPL)** in September 1995. Sites on the NPL are subject to the requirements of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, also know as **Superfund**, and the NCP.

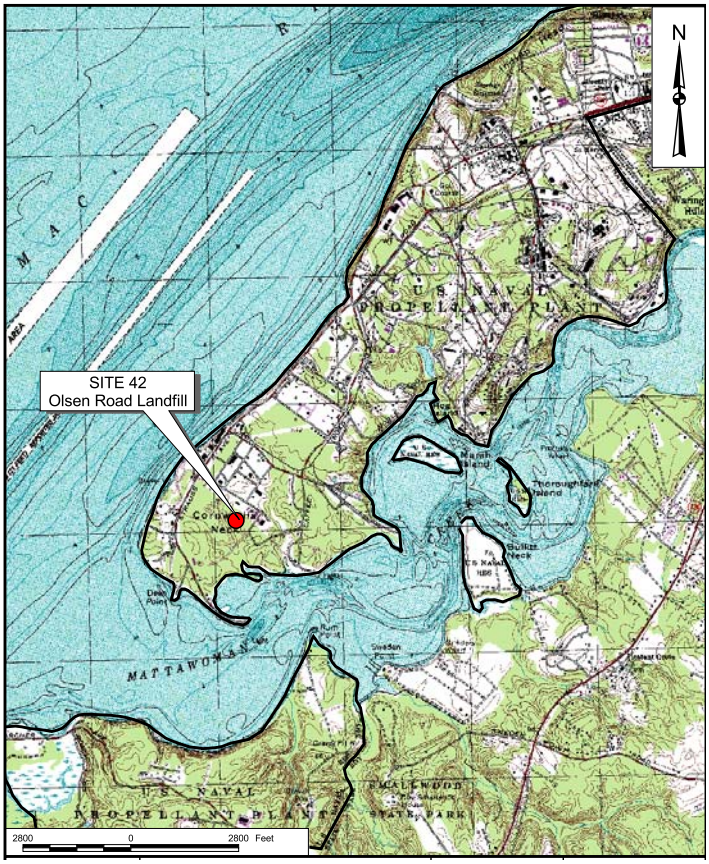

Figure 1. NDW-IH, Indian Head, Maryland

Site Characteristics

The site slopes gently to the south near the building, with much steeper grades to the south, west, and east in the remaining undeveloped portion of the site. Streams border the southeastern and southwestern edges of the site. Another stream runs through the central portion of the site. The streams join south of the site, and the combined flow eventually flows south to Mattawoman Creek. Aboveground steam lines are located south and west of the building associated with this site. Some of the steam lines were installed above the area where waste was buried. A portion of the landfill is located beneath the southwestern edge of the building parking lot.

The depth to **shallow groundwater** ranges from 1.5 to 12 feet below the ground surface.

The undeveloped portion of the site has been an inactive landfill since 1987 and is not currently used for any facility activities. The building associated with this site has been in active use since 1992.

Investigation History

Several investigations were conducted at Site 42 between 1991 and 2003. Below is a chronological description of the investigations.

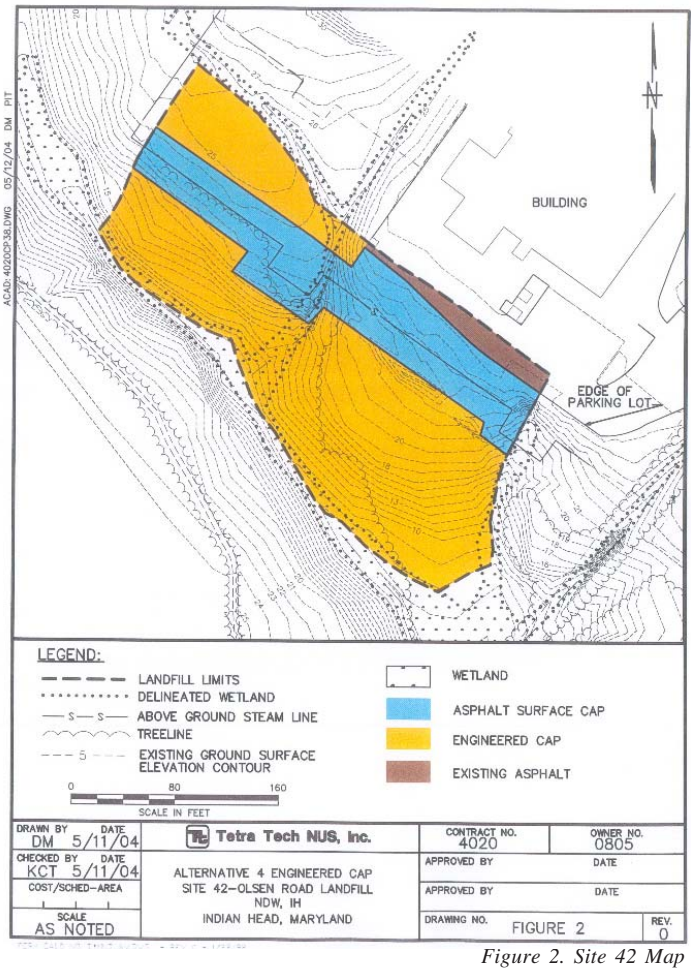

Figure 2. Site 42 Map

Site Inspection (SI) and RI

Soil, shallow groundwater, surface water, and sediment samples were collected during the SI in 1991 and 1992 and the RI in 1997. The following summarizes the results of the SI and RI:

- Two localized areas of **volatile organic compound (VOC)** contamination are present in soil and shallow groundwater. The reported concentrations of ethylbenzene, toluene, and xylenes suggest a release of fuel-related **contaminants** in subsurface soil along the debris perimeter in the undeveloped portion of the site. In addition, trichloroethene (TCE) and its degradation products (cis-1,2-dichloroethene and vinyl chloride) were detected in a sample from a shallow groundwater monitoring well southwest of the southern corner of the building and subsurface soil samples collected near this well.

- **Semivolatile organic compounds (SVOCs)**, primarily phthalate esters, were detected in soil and sediment. Bis(2-ethylhexyl)phthalate was detected in soil and sediment at concentrations ranging from 1,700 parts per billion (ppb) to 28,000 ppb. Except for bis(2-ethylhexyl)phthalate and di-n-butyl phthalate, other SVOCs were infrequently detected in soil. These other SVOCs, primarily **polynuclear aromatic hydrocarbons (PAHs)** were only detected in four subsurface soil samples collected southwest of the building within or near the debris area. SVOCs were infrequently detected in shallow groundwater and were not detected in surface water.

- Several pesticides were detected in soil samples. 4,4'-DDT was detected at concentrations ranging from 4.9 to 23 ppb in five surface soil samples collected near the building. Endosulfan sulfate and 4,4'-DDT were detected in several subsurface soil samples at concentrations ranging from 4 to 24 ppb. The greatest total number and the maximum concentrations of pesticides were associated with subsurface soil from the debris area. Pesticides were infrequently detected in sediment and were not detected in shallow groundwater or surface water.

- The maximum concentrations of several **metals** detected in subsurface soil exceeded basewide **background concentrations**. Except for lead, nickel, and zinc, all concentrations were within the natural concentration ranges in literature for soils in Maryland and/or the eastern United States. Several metals were detected in shallow groundwater. Concentrations of cadmium, silver, and sodium in sediment exceeded basewide background levels.

1999 Data Gap Investigation

Investigations were performed in September 1999 to fill data gaps. This included excavation of test pits, wetland delineation, and sediment sampling. Three test pits were excavated to define the western extent of the landfill west of the building. Sparse landfill material was encountered at depths of approximately 6 inches at all three locations. The landfill material generally consisted of concrete, logs, charred wood, and metal debris. Deteriorated steel drums were detected in some areas.

Wetlands were also delineated to identify areas that may require special consideration during remedial activities. Wetlands are located along the streams in the site area.

Additional sediment samples were collected to define the horizontal and vertical extent of contamination and to conduct toxicity tests.

2002 Data Gap Investigation

Investigations were performed in January 2002 to better define the extent of the landfill and to provide additional shallow groundwater data. The investigations included excavation of a test pit, installation of three shallow (12 to 15 feet deep) groundwater monitoring wells, and collection of shallow groundwater samples from eight (five existing, three new) monitoring wells. The test pit was excavated to define the eastern extent of the landfill south of the building. Landfill material was not encountered in the test pit. Shallow groundwater samples were analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), metals, explosives, nitrocellulose, nitroguanidine, and perchlorate. The following summarizes the results from shallow groundwater sampling:

- VOCs were detected in a sample from the shallow groundwater monitoring well located southwest of the southern corner of the building. Historically, samples from this monitoring well contained the highest concentrations of TCE and its degradation products. During this investigation, TCE and its degradation products were still present, but the TCE appears to be further degrading based on the decrease in TCE concentrations from the SI and RI and continued detection of degradation products. VOCs were infrequently detected at low concentrations (less than 4 ppb) in three of the remaining seven groundwater samples.

- Bis(2-ethylhexyl)phthalate, naphthalene, and phenanthrene were the only SVOCs detected. Historically, SVOCs have not been detected frequently, and the 2002 results are consistent with historical data.

- 2,4-Dinitrotoluene, 1,3,5-trinitrobenzene, and 2-amino-4,6-dinitrotoluene were the only explosives detected. These explosives were detected infrequently at low concentrations (less than 2 ppb).

- Pesticides, PCBs, and perchlorates were not detected.

- Several metals were detected in shallow groundwater.

2003 Test Pit Investigation

Eleven test pits were excavated around the perimeter and in the center of the landfill to better delineate the landfill boundaries and depth of landfill waste. Waste was encountered in 10 of the test pits. The depth to the top of the waste ranged from 6 inches to 4 feet. The depth to the bottom of the waste ranged from 3 to 9 feet. The waste thickness ranged from 1 to 8 feet.

One soil sample was collected from each test pit to help estimate the amount of hazardous and nonhazardous wastes present. The samples were analyzed for VOCs, SVOCs, pesticides, PCBs, metals, cyanide, explosives, nitrocellulose, nitroguanidine, and perchlorate with the following results:

- In general, organic chemicals were infrequently detected and were similar to those detected during previous investigations. Many individual VOCs were detected; however, different chemicals were detected in different samples. In general, individual VOCs were only detected in one or two samples. The VOCs acetone and total xylenes were detected more often. SVOCs that were detected most often were PAHs and bis(2-ethylhexyl)phthalate. Pesticides and PCBs were infrequently detected. Explosives were only detected in one sample. None of the organic chemical concentrations were high enough to indicate the presence of organic hazardous waste in the landfill.

- In general, the concentrations of most metals were similar to those detected during previous investigations. However, the concentrations of cadmium and lead were high enough at one test pit location to indicate that the soil in this localized area could be classified as a hazardous waste that exhibits the **toxicity characteristic**.

Principal Threats

Based on the results of the investigations, studies, and sampling conducted, the waste and soil at Site 42 do not constitute principal threat wastes as defined by the NCP. Principle threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur.

Scope and Role of the Action

This Proposed Plan addresses the evaluation of the preferred alternative for Site 42 only. It does not include or directly impact any other sites at the facility.

The purpose of the Proposed Plan is to present the remedial alternatives considered and the preferred alternative which the Navy and EPA, in consultation with MDE and taking into account public input, propose to select to prevent unacceptable exposure to site contaminants and to reduce movement of contaminants into the environment.

Summary of Site Risks

As part of the RI/FS, the Navy conducted a **baseline risk assessment** to determine the current and future effects of detected chemicals on human health and the environment. It is the current judgment of the Navy, EPA, and MDE that the preferred alternative identified in this Proposed Plan, or one of the other acceptable active remediation alternatives identified in this Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of **hazardous substances** into the environment at Site 42.

Human Health Risks

The human health risk assessment assumed industrial and hypothetical residential land use and hypothetical use of shallow groundwater as a source of drinking water. The risk assessment considered the following receptors and exposure pathways:

- Current/future maintenance workers and current/future full-time employees exposed to surface soil and sediment.

- Current/future adolescent trespassers exposed to surface soil, surface water, and sediment.

- Future construction workers exposed to surface/subsurface soil, shallow groundwater, and sediment.

- Hypothetical future residents exposed to surface/subsurface soil, shallow groundwater, surface water, and sediment.

An incremental cancer risk level is estimated for a potential cancer-causing chemical based on how much of the chemical is present and its strength as a cancer-causing agent. Estimated potential site-related risks greater than 1.0E-4 (1 in 10,000) are considered to be unacceptable. At this risk level, the risk that a male will get cancer would increase from 50 percent (natural lifetime average cancer risk for a male without site-related exposure) to a maximum of 50.01 percent. In addition, the risk that a female will get cancer would increase from 33 percent (natural lifetime average cancer risk for a female without site-related exposure) to a maximum of 33.01 percent. The only unacceptable estimated incremental cancer risks were for the hypothetical future child resident (5.7E-04, or about 6 in 10,000) and the hypothetical future adult resident (1.3E-03, or about 1 in 1,000). These potential risks were

estimated based on exposure to the maximum concentrations of TCE, vinyl chloride, and arsenic in shallow groundwater and use of shallow groundwater as a source of drinking water. Future residential use is unlikely for this site.

The concentrations of chemicals found at the site producing potential harmful effects other than cancer were compared to reference concentrations (highest concentrations not causing harmful effects) to calculate a **Hazard Quotient (HQ)**. For example, if the chemical concentration results in a daily intake of 25 parts per million (ppm) per day and the reference concentration is 10 ppm per day, the HQ would be 2.5. An HQ above 1.0 (a conservative benchmark) is considered to be unacceptable. The only unacceptable noncancer risks were for the hypothetical future child resident (total HQ of 87) and hypothetical future adult resident (total HQ of 37). These estimated potential risks were based on exposure to iron in soil and TCE, arsenic, chromium, and vanadium in shallow groundwater and assume shallow groundwater would be used as a source of drinking water.

These risk assessments were based on current reasonable maximum exposure scenarios and were developed by taking into account various conservative assumptions about the frequency and duration of an individual's exposure to the soil and groundwater, as well as the toxicity of the chemicals detected in soil and groundwater.

Ecological Risks

A preliminary ecological risk assessment indicated that there may be potential risks to **ecological receptors** from silver, zinc, and bis(2-ethylhexyl)phthalate detected in sediment in streams at the site. Further evaluation during the RI indicated that silver was the only contaminant of concern for sediment. Subsequent toxicity testing determined that silver was not the cause of the toxicity. A habitat evaluation concluded that fine soil in the sediment and decaying vegetation in the streams provided a very poor ecological habitat. The poor ecological habitat is the suspected cause of the observed toxicity rather than chemical contamination from the landfill. Therefore, the conclusion could be drawn that sediment is not a medium of concern for Site 42.

There are no endangered species or critical habitats at the site.

Remedial Action Objectives

The remedial action objectives (RAOs) for the site are as follows:

- Prevent future residential use and use of contaminated shallow groundwater.
- Close the landfill in accordance with State of Maryland solid waste management regulations [Code of Maryland Regulations (COMAR) 26.04.07].
- Remove potential hazardous waste (hot spot) that may be a source of groundwater contamination.
- Conduct **monitoring** to confirm that migration of contaminants from the site has not occurred and to determine the need for future actions.

Chemical concentrations in shallow groundwater under the landfill are higher than drinking water standards. Although the expectation, based on the NCP, is that CERCLA remediation will return usable groundwaters to their beneficial uses wherever practicable, the shallow groundwater beneath the landfill is not within the area of attainment which, as defined by EPA, excludes the groundwater directly under the landfill. The discharge of on-site shallow groundwater from beneath the landfill is not currently adversely affecting surface water quality in the adjacent stream or off-site shallow groundwater. In addition, there is no known connection between the shallow water-table **aquifer** and the deeper aquifer which is used for drinking water.

Summary of Remedial Alternatives

Remedial alternatives for Site 42 are presented below. More detailed descriptions of the alternatives can be found in the FS Report. After the FS Report was published, the Navy, EPA, and MDE decided that the area of potentially hazardous waste (hot spot) should be removed. In addition, based on recent Navy requirements, any material removed from the landfill would need to be physically screened to identify potential ordnance. As a result, the cost estimates presented in the FS Report have been updated.

The preferred alternative is Alternative 4 – Hot Spot Removal and Engineered Cap with Land Use Controls and Monitoring.

Alternative 1 – No Action

Estimated Capital Cost: $0
Estimated Annual Operation and Maintenance (O&M) Cost: $0
*Estimated **Net Present Worth**: $0*
Estimated Construction Timeframe: None

Regulations governing the Superfund program require that the no-action alternative be evaluated solely for the purpose of establishing a baseline for comparison. Under this alternative, the Navy would take no action at the site to prevent exposure to the landfill waste and shallow groundwater contamination.

Alternative 2 – Operational Soil Cover with Land Use Controls and Monitoring

A layer of soil would be placed over an area of approximately 1.43 acres to ensure that all waste would be covered with a minimum of 2 feet of soil. Portions of the site may already have sufficient cover. The operational soil cover would consist of common fill, 6 inches of topsoil, and vegetation. The existing parking lot at this site would serve as the cover for any waste under it.

Land use controls would be put in place to prohibit residential development, shallow groundwater use, unauthorized excavation activities, and any other actions that could damage the soil cover or asphalt pavement. Monitoring of shallow groundwater and surface water in accordance with an approved long-term monitoring plan would be conducted to confirm that contaminants have not migrated from the site and determine whether there is a need for future actions. Additional monitoring wells would be installed as needed. Site reviews would be conducted at least every 5 years.

The costs for this alternative were not estimated in the FS. This alternative was screened out because it would not comply with state solid waste management regulations.

Alternative 3 – Soil Cover with Land Use Controls and Monitoring

This alternative is similar to Alternative 2, except that a 2-foot-thick soil cover would be installed over the 1.43-acre site area regardless of the thickness of the existing soil cover. The soil cover for Alternative 3 would consist of the following layers (from bottom to top): geotextile, 18 inches of clean common fill, 6 inches of topsoil, and vegetation. The landfill material under the aboveground steam lines would be covered with an asphalt surface because installation of the soil cover could damage the steam line support foundations.

The costs for this alternative were not estimated in the FS. This alternative was screened out because it would not comply with state solid waste management regulations.

Alternative 4 – Hot Spot Removal and Engineered Cap with Land Use Controls and Monitoring

Estimated Capital Cost: $2,700,000
Estimated Annual O&M Cost: $34,900
Estimated Net Present Worth: $3,200,000
Estimated Construction Timeframe: 5 months
Estimated Time to Achieve RAOs: 5 months

Approximately 1,200 cubic yards of potential hazardous waste (hot spot) would be excavated, physically screened to identify ordnance items, and disposed at an off-site, permitted hazardous waste landfill.

Approximately 1,000 cubic yards of waste and soil that cannot be consolidated under the engineered cap because of potential slope stability issues would be physically screened to identify ordnance items and disposed at an off-site, permitted nonhazardous waste landfill. Common soil would be placed over the landfill to provide uniform grades and a bedding layer for the cap.

An engineered cap with the following components (from bottom to top) would be installed: low-permeability synthetic geomembrane, geocomposite drainage layer, 18 inches of common fill, 6 inches of topsoil, and vegetation. An asphalt surface underlain by a low-permeability synthetic geomembrane would be used to cap the portion of the landfill under the aboveground steam lines and between the steam lines and building parking lot.

The land use controls, monitoring, and 5-year review components are the same as for Alternative 2.

Alternative 5A – Partial Landfill Removal with Land Use Controls and Monitoring

Estimated Capital Cost: $3,500,000
Estimated Annual O&M Cost: $25,800
Estimated Net Present Worth: $3,800,000
Estimated Construction Timeframe: 5 months
Estimated Time to Achieve RAOs: 5 months

The majority of the landfill contents (waste and contaminated soil) would be excavated and hauled off site for disposal. Material beneath the building parking lot and aboveground steam lines would remain in place and capped with asphalt pavement underlain by a low-permeability synthetic geomembrane. Excavated areas would be backfilled with clean material, compacted, graded, covered with 6 inches of topsoil, and **revegetated**. It is estimated that approximately 9,510 cubic yards of material would require excavation, of which 1,200 cubic yards is assumed to be hazardous waste. The nonhazardous material would be disposed at an off-site, permitted nonhazardous waste landfill, and the hazardous material would be disposed at an off-site, permitted hazardous waste landfill. All excavated materials would be physically screened to identify potential ordnance items.

The land use controls, monitoring, and 5-year review components are the same as for Alternative 2.

Alternative 5B – Complete Landfill Removal with Land Use Controls and Monitoring

Estimated Capital Cost: $5,300,000
Estimated Annual O&M Cost: $18,000
Estimated Net Present Worth: $5,500,000
Estimated Construction Timeframe: 9 months
Estimated Time to Achieve RAOs: 9 months

The entire landfill contents (waste and contaminated soil) would be excavated and hauled off site for disposal. This includes areas beneath the building parking lot and aboveground steam lines, which would need to be temporarily supported. The

excavated area would be backfilled, graded, compacted, covered with 6 inches of topsoil, and revegetated. The parking lot would be restored. It is estimated that approximately 13,320 cubic yards would require excavation, of which 1,200 cubic yards is assumed to be hazardous. The excavated nonhazardous material would be disposed at an off-site, permitted nonhazardous waste landfill, and the hazardous material would be disposed at an off-site, permitted hazardous waste landfill. All excavated material would be physically screened to identify potential ordnance items.

After the source of shallow groundwater contamination (i.e., landfill waste) is removed, it is expected that chemical concentrations in shallow groundwater would decrease via natural attenuation, which would be monitored.

Land use controls would be put in place to prohibit shallow groundwater use. The monitoring and 5-year review components are the same as for Alternative 2.

Evaluation of Alternatives

Nine criteria are used to evaluate different remedial alternatives individually and in comparison to each other to select a remedy. This section of the Proposed Plan profiles the relative performance of each alternative with the nine criteria, noting how each compares to the other options under consideration. The detailed analysis of alternatives can be found in the FS Report.

Threshold Criteria

Overall Protection of Human Health and the Environment

This criterion determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through land use controls, engineering controls, or treatment.

All the alternatives, except Alternative 1 (No Action), would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through removal, engineering controls, and/or land use controls. Alternative 5B would provide the most protection because all landfill material would be removed from the site, and land use controls would prevent shallow groundwater use until such time as monitored natural attenuation reduced contaminant concentrations below **Maximum Contaminant Levels (MCLs).**

Alternatives 2 (operational soil cover), 3 (soil cover), 4 (engineered cap), and 5A (partial landfill removal) would protect human health through implementation of land use controls to restrict land use and shallow groundwater use. The cover/cap components of these alternatives would reduce exposure to landfill waste and contaminated soil.

Alternatives 4, 5A, and 5B would remove an area of potential hazardous waste (hot spot) that is a potential source of groundwater contamination.

Because the no-action alternative would not provide adequate protection, it was eliminated from consideration under the remaining eight criteria.

Compliance with Applicable or Relevant and Appropriate Requirements

This criterion evaluates whether the alternative meets federal and state environmental laws, regulations, or other requirements that pertain to the site, or whether a waiver is justified.

Alternatives 4, 5A, and 5B would meet their respective **Applicable or Relevant and Appropriate Requirements (ARARs)** from federal and state solid waste management regulations. The soil covers for Alternatives 2 and 3 do not comply with state landfill closure (capping) requirements and would not qualify for a variance. Neither Alternative 2 nor Alternative 3 can be selected as the preferred alternative because neither can attain ARARs, and these alternatives are not evaluated further.

Primary Balancing Criteria

Long-Term Effectiveness and Permanence

This criterion considers the ability of an alternative to maintain protection of human health and the environment over time.

Alternatives 5A and 5B would be the most protective over the long term because either a portion or all of the landfill waste would be removed. Alternative 4 would be less effective over the long term because landfill waste would remain on site, and land use controls would be needed to restrict land use. However, the effectiveness would be monitored, and corrective measures could be taken if necessary.

The removal of an area of potential hazardous waste under Alternatives 4 and 5A would remove a highly contaminated area that is a potential source of groundwater contamination that could migrate to surface water.

Alternatives 4 and 5A would rely on land use controls to control exposure to contaminated materials and shallow groundwater even though the potential for non-industrial use of the site is low. Alternative 5B would only rely on land use controls to control exposure to shallow groundwater until monitored natural attenuation reduced contaminant concentrations below MCLs because all landfill material would be removed.

For Alternatives 4, 5A, and 5B, monitoring would be effective in determining whether shallow groundwater contaminants have migrated beyond the site boundary or to surface water at unacceptable levels.

Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment

This criterion evaluates an alternative's use of treatment to reduce harmful effects of principle contaminants, their ability to move in the environment, or the amount of contamination present.

None of the alternatives includes treatment to reduce toxicity, mobility, or volume.

Short-Term Effectiveness

This criterion considers the length of time needed to implement an alternative. It also considers the risks the alternative poses to the community, workers, and environment during implementation (construction).

Hauling excavated material off site under Alternatives 4, 5A, and 5B would have a short-term impact on the community because additional truck traffic would be expected. Short-term potential for generation of erosion during construction would be managed and minimized with proper sediment and erosion controls.

Exposure of workers to the contaminated media under Alternatives 4, 5A, and 5B would be controlled by the use of appropriate personal protective equipment, engineered controls, and compliance with a site-specific Health and Safety Plan and Occupational Safety and Health Administration (OSHA) regulations.

Alternatives 4 and 5A would take 5 months to construct. Alternative 5B would take 9 months to construct.

Implementability

This criterion considers the technical and administrative feasibility of implementing an alternative, including factors such as the relative availability of goods and services.

All technologies are readily available and proven. The aboveground steam lines present certain implementability concerns for Alternatives 4, 5A, and 5B. Precautions would need to be taken to avoid damage to the steam lines and other site utilities. For Alternatives 4 and 5A, the steam lines may cause difficulty in extending the existing pavement, especially where there is limited clearance between the ground surface and the steam lines. For Alternative 5B, the steam lines may cause difficulties in excavating all landfill material.

Implementation of Alternatives 4, 5A, and 5B would be subject to restrictions because explosives are handled in nearby buildings. The building parking lot would be temporarily out of service for Alternative 5B.

Cost

This criterion includes capital costs, annual O&M costs, and the present-worth cost. Present-worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

Alternative 5B has the highest present-worth cost; however, all landfill materials would be permanently removed from the site. Alternative 4 has the lowest present-worth cost. The present-worth cost of Alternative 5A is approximately 20 percent higher than for Alternative 4. The present-worth cost of Alternative 5B is approximately 45 percent higher than for Alternative 5A and approximately 70 percent higher than for Alternative 4.

Modifying Criteria

State Acceptance

At this time, MDE concurs with the preferred alternative; however, state acceptance may be re-evaluated based on comments received during the public comment period and will be described in the ROD for the site.

Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period and will be described in the ROD for the site.

Summary of the Preferred Alternative

The preferred alternative for cleaning up Site 42 is Alternative 4, Hot Spot Removal and Engineered Cap with Land Use Controls and Monitoring. The preferred alternative was selected over the other alternatives because it is expected to achieve substantial and long-term risk reduction through a combination of removal of potential hazardous waste, containment, land use controls, and monitoring.

Based on information currently available, the Navy and EPA believe, with concurrence from MDE, that the preferred alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the primary balancing criteria. The Navy expects the preferred alternative to satisfy the following statutory requirements under CERCLA Section 121(b): be protective of human health and the environment, comply with ARARs, be cost effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. However, because treatment of the principle threats at the site was not found to be practicable, the preferred alternative does not satisfy the preference for treatment as a principle element.

The preferred alternative can change in response to public comments or new information.

Community Participation

A Restoration Advisory Board (RAB) made up of community members and Navy, federal, and state officials meets several times per year. The RAB is designed to act as the focal point for the exchange of information between NDW-IH and the local community regarding restoration activities.

The Navy, EPA, and MDE also provide information regarding the cleanup of sites at NDW-IH to the public through public meetings, the Information Repository, and announcements in the *Maryland Independent*. The Navy, EPA, and MDE encourage the public to gain a more comprehensive understanding of the site and the Superfund activities that have been conducted.

The 30-day public comment period is July 1 to August 1, 2005. The public meeting will be held on July 7, 2005, from 6:30 pm to 7:30 pm at the Indian Head Senior Center, 100 Cornwallis Square, Indian Head, Maryland. The location of the Information Repository is also provided on Page 1 of this Proposed Plan.

Minutes of the public meeting will be made available to the public through the Information Repository. A **Responsiveness Summary** will be prepared at the conclusion of the comment period to summarize significant comments submitted to the Navy during the comment period. The Responsiveness Summary will also be included in the ROD for Site 42.

Written comments can be submitted via mail, e-mail, or fax and should be sent to the following addressee:

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Glossary of Terms

Applicable or Relevant and Appropriate Requirements (ARARs): The federal and state environmental laws that a selected remedy must meet. These requirements may vary among sites and alternatives.

Aquifer: An underground formation of material such as sand, soil, or gravel that can store and supply groundwater to wells and springs.

Background Concentrations: Concentrations of chemicals in environmental media that are representative of naturally occurring conditions or that may be attributable to historic, widespread human activity.

Baseline Risk Assessment: A study conducted as a supplement to an RI to determine the nature and extent of contamination at an NPL site and the risks posed to human health and/or the environment.

Comment Period: A time for the public to review and comment on various documents and actions taken, either by the Navy, EPA, or MDE. For example, a comment period is provided when EPA proposes to add sites to the NPL. A minimum 30-day comment period is held to allow community members to review documents in the Information Repository and review and comment on the Proposed Plan.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and modified in 1986 by the **Superfund Amendments**

and Reauthorization Act (SARA). The act created a special tax that goes into a trust fund (Superfund) to investigate and clean up abandoned or uncontrolled hazardous waste sites. CERCLA established prohibitions and requirements concerning closed or abandoned hazardous waste sites and created the liability scheme for those responsible for releases of hazardous substances at these sites. An important provision of SARA included federal facilities in the CERCLA process.

Contaminant: Any physical, biological, or radiological substance or matter that, at a high enough concentration, could have an adverse effect on human health or the environment.

Ecological Receptor: A plant or animal that can be exposed to a contaminant in the environment.

Feasibility Study (FS): See Remedial Investigation/Feasibility Study.

Groundwater: Water beneath the ground surface that fills spaces between materials such as sand, soil, or gravel to the point of saturation. In aquifers, groundwater occurs in quantities sufficient for drinking water, irrigation, or other uses. Groundwater may transport chemicals that have seeped downward from the ground surface as it flows towards its point of discharge.

Hazard Quotient (HQ): The ratio of the daily intake of a chemical from on-site exposure divided by the reference dose for that chemical. The reference dose represents the highest daily intake of a chemical that is not expected to cause adverse health effects.

Hazardous Substance: Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Information Repository: A file containing information, technical reports, and reference documents regarding an NPL site.

Maximum Contaminant Levels (MCLs): National standards for acceptable levels of contaminants in public drinking water systems.

Metals: Metals are naturally occurring elements in the earth. Aluminum, arsenic, iron, lead, nickel, silver, and zinc are examples of metals. Exposure to some metals, such as arsenic and silver, can have toxic effects. Other metals, such as iron, are essential to the metabolism of humans and animals.

Monitoring: Ongoing collection of information about the environment that helps measure the effectiveness of a remedial action. This includes the collection of samples with laboratory analysis for the chemicals of interest.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The purpose of the NCP is to provide the organizational structure and procedures for preparing for and responding to discharges of oil and releases and threatened releases of hazardous substances, pollutants, or contaminants.

National Priorities List (NPL): The EPA list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term **remedial response**.

Net Present Worth: A present-worth analysis is used to evaluate costs that occur over different time periods by discounting all future costs to a common base year. It represents the amount of money that, if invested in the base year and dispersed as needed, would be sufficient to cover all costs associated with the remedial action over its planned life. Net present worth considers both capital (construction) costs and costs for annual operation and maintenance.

Polynuclear Aromatic Hydrocarbons (PAHs): A group of chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances. PAHs can be man-made or occur naturally.

Proposed Plan: A public participation requirement of SARA in which the lead agency summarizes for the public the preferred strategy for cleanup of a site and rationale for preference and reviews the alternatives presented in the detailed analysis of the FS. The Proposed Plan may be prepared either as a fact sheet or as a separate document. In either case, it must actively solicit public review and comment on all alternatives under consideration.

Record of Decision (ROD): An official public document that explains which remedial alternative(s) will be used at NPL sites. The ROD is based on information and technical analysis generated during the RI/FS and consideration of public comments and community concerns. The ROD explains the remedy selection process and is issued by the Navy and EPA following the public comment period.

Remedial Action: The actual construction or implementation phase that follows the **remedial design** for the selected alternative at a site on the NPL.

Remedial Design: The technical analysis and procedures that follow the selection of a remedy for a site and result in a detailed set of plans and specifications for implementation of the remedial action.

Remedial Investigation/Feasibility Study (RI/FS): Investigation and analytical studies usually performed at the site in an interactive process and together referred to as the "RI/FS." They are intended to gather data needed to determine the type and extent of contamination, establish criteria for cleaning up the site, identify and screen alternatives for remedial action, and analyze in detail the technology and costs of the alternative.

Remedial Response: A long-term action that stops or substantially reduces a release or threatened release of hazardous substances that is serious but does not pose an immediate threat to public health or the environment.

Remedy: Actions taken to deal with a release or threatened release of hazardous substances that could affect public health or the environment.

Responsiveness Summary: A summary of significant public comments received during a comment period and the responses to these comments prepared by the lead agency. The responsiveness summary is an important part of the ROD, highlighting community concerns for decision-makers.

Revegetate: To replace topsoil, seed, and mulch on prepared soil to prevent wind and water erosion.

Risk Assessment: Evaluation and estimation of the current and future potential for adverse human health or environmental effects resulting from exposure to contaminants.

Semivolatile Organic Compounds (SVOCs): Chemical compounds that evaporate more slowly than volatile organic compounds at normal temperatures and pressures.

Shallow Groundwater: Groundwater that is found just below the earth's surface which is not confined or covered by an impermeable layer, such as clay.

Superfund: An informal name for CERCLA.

Superfund Amendments and Reauthorization Act (SARA): The public law enacted to reauthorize the funding provisions and amend the authorities and requirements of CERCLA and associated laws. Section 120 of SARA requires that all federal facilities be subject to and comply with this act in the same manner and to the same extent as any non-government entity.

Toxicity Characteristic: One of the characteristics of a hazardous waste. A liquid waste is classified as a hazardous waste if the chemical concentration(s) is higher than the toxicity characteristic level(s) specified in the hazardous waste regulations. For a solid material, the waste is first subjected to a laboratory procedure known as the Toxicity Characteristic Leaching Procedure (TCLP), which simulates what might happen within a landfill that has been subjected to acid rain. The liquid (leachate) resulting from the TCLP is analyzed, and the results are compared to the toxicity characteristic regulatory levels.

Volatile Organic Compounds (VOCs): Chemical compounds that evaporate readily at normal temperatures and pressures.

Mark Your Calendar for the Public Comment Period

Public Comment Period

July 1 to August 1, 2005

Submit Written Comments

Written comments must be post-marked no later than the last day of the public comment period, which is August 1, 2005. Based on the public comments or on any new information obtained, the Navy and EPA may modify the Preferred Alternative. The insert page of this Proposed Plan may be used to provide comments, although use of the form is not required. If the form is used to submit comments, please fold page, seal, add postage where indicated, and mail to addressee as provided.

Attend the Public Meeting

Thursday, July 7, 2005
6:30 pm to 7:30 pm

Indian Head Senior Center
100 Cornwallis Square
Indian Head, MD 20640

The public comment period will include a public meeting during which the Navy, EPA, and MDE will provide an overview of the site, previous investigaton findings, remedial alternatives evaluated and the Preferred Alternative; answer questions; and accept public comments on the Proposed Plan.

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Please print or type your comments for Site 42 here