Site Management Plan
for
Installation Restoration Program
Indian Head Division
Naval Surface Warfare Center
Indian Head, Maryland

Engineering Field Activity, Chesapeake
Naval Facilities Engineering Command

For Fiscal Years
2001 - 2003

REVISED:
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SITE MANAGEMENT PLAN
FOR
INSTALLATION RESTORATION PROGRAM
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

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LIST OF ACRONYMS

ACM	Asbestos Containing Material
AOCs	Areas of Concern
BNA	base-neutral acids
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CRQL	Contract Required Quantitation Limits
DERA	Defense Environmental Restoration Account
DOD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
EOD	Explosive Ordnanace Disposal
EPA	United States Environmental Protection Agency
EPTox	Extraction Procedure Toxicity
FDWS	Federal Drinking Water Standards
FFA	Federal Facilities Agreement
FS	Feasibility Study
GC/FID	Gas Chromatograph/flame ionization detector
GPR	Ground Penetrated Radar
HMX	A chemical (C4H8N8O8) component of plastic explosives
HSWA	Hazardous and Solid Waste Amendments
IAS	Initial Assessment Study
IAS	Initial Assessment Study
IHDIV-NSWC	Indian Head Division, Naval Surface Warfare Center
IR	Installation Restoration
IW	Industrial Wastewater
IWTP	Industrial Wastewater Treatment Plant
MCL	Maximum Contaminant Levels
MDE	Maryland Department of the Environment
NACIP	Naval Assessment for the Control of Industrial Pollutants
NAVEODTECHDIV	Naval Explosives Ordnance Technology Division
NAVSCOLEOD	Naval School Explosive Ordnance Disposal
NC	Nitrocellulose
NEESA	Naval Energy and Environmental Support Activity
NG	Nitroglycerin
NOS	Naval Ordnance Station
NPL	National Priorities List

PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PBX	Plastic Bonded Explosives
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PR	Preliminary Review
PSPAS	Point-Source Pollution Abatement Study
RAC	Removal Action Contractor
RCRA	Resource Concentration and Recovery Act
RD/RA	Remedial Design/Remedial Action
RFA	RCRA Facilities Assessment
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SI	Site Investigation
SMP	Site Management Plan
SSP	Site Screening Process
STP	Sewage Treatment Plant
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TPH	Total Petroleum Hydrocarbons
UDMH	Unsymmetrical Dimethyl Hydrazine
UST	Underground Storage Tank
VI	Verification Investigation
VOC	Volatile Organic Compound
VSI	Visual State Inspection

EXECUTIVE SUMMARY

This Site Management Plan (SMP) was updated by Engineering Field Activity Chesapeake to present the activities that were conducted and those that are planned for sites at the Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC). This SMP addresses 48 Installation Restoration (IR) sites and 15 Areas of Concern (AOCs) on the Main Area of IHDIV-NSWC, and 17 IR sites and 13 AOCs at the Stump Neck Annex. Previous SMPs for IHDIV-NSWC did not include the Stump Neck Annex because the Annex was being addressed by a separate program under a Resource Conservation and Recovery Act (RCRA) Corrective Action Permit. However, upon finalization of the Federal Facilities Agreement (FFA) between the Department of the Navy and United States Environmental Protection Agency (EPA) the RCRA sites at the Stump Neck Annex were included under the Comprehensive Environmental Response, Compensation and Liability act of 1980 (CERCLA) program of the Main Area.

The schedules in this SMP were prepared to include the traditional steps for addressing contaminated sites under CERCLA. Existing documentation published in connection with past investigations and studies were used to describe completed activities and recommendations for future work. This SMP should be considered a "living document" because the information and schedules that are provided will be updated periodically as the work progresses at each site and more definitive information becomes available.

As a result of previous investigations and recommendations for sites within the Main Area of IHDIV-NSWC, 26 of the 48 IR sites have been included in the category of Remedial Investigation/Feasibility Study (RI/FS). Twenty-one of these sites are currently undergoing the RI/FS process, and five (Sites 40, 43, 46, 48, and 56) are scheduled for future RI/FS work. The remaining 22 IR sites within the Main Area fall under the Site Screening Process (SSP), four of which are currently undergoing Site Screening Investigations (SSI). As indicated above, the Main Area also includes 15 AOCs. These AOCs have undergone a desk-top audit. As a result of the desk-top audit, two of the sites will be incorporated into ongoing Remedial Investigations (RIs). A third site will be subjected to its own remedial investigation. One of the AOC sites will remain an AOC, and the remaining 11 sites are expected to be closed with a No Action decision document.

As a result of previous investigations and recommendations for the sites within the Stump Neck Annex, all of the 17 IR sites have been included in the category of SSP. Five of these sites are undergoing the SSI stage of the SSP. The remaining IR sites within the Stump Neck Annex fall under the verification inspection (VI) category (6 sites, all are currently undergoing the VI) and the RCRA facilities investigation (RFI) category (3 sites, all are currently undergoing the RFI). The Stump Neck Annex also includes 13 AOCs. During a desk-top audit, these AOCs were categorized to either remain AOCs (3 sites), remain

RCRA facilities (1 site), be closed with a No Further Action decision documents (5 sites), or undergo an RI (2 sites) or an SSP (2 sites).

With the finalization of the FFA, these areas are addressed under the CERCLA Program, and the SMP provides the schedules for these areas.

1.0 INTRODUCTION

This Site Management Plan (SMP) for the Indian Head Division Naval Surface Warfare Center (IHDIV-NSWC), Indian Head, Maryland, was prepared by Engineering Field Activity Chesapeake. The purpose of this SMP is to provide site-specific background information, present the activities that are currently being conducted or are planned at IHDIV-NSWC during Fiscal Years 2003 through 2005, and project the long-term progress of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) program at the IHDIV-NSWC in accordance with the Department of Navy Installation Restoration (IR) Program.

1.1 DESCRIPTION OF THE INSTALLATION

IHDIV-NSWC, formerly called the Naval Ordnance Station (NOS), the Naval Propellant Plant, the Naval Powder Factory, and the Naval Proving Grounds, is located in Charles County, Maryland, 30 miles south of Washington, D.C. The site is positioned along the Potomac River at the confluence of Mattawoman Creek, as shown on Figure 1-1. The site comprises of about 3,500 acres. The Main Area, on the Cornwallis Neck Peninsula, is approximately 2,500 acres. The Stump Neck Annex is approximately 1,000 acres and is separated from the Main Area by Mattawoman Creek. IHDIV-NSWC has been active since 1890 and assumed its current name in 1992.

IHDIV-NSWC operations are primarily located on the Main Area. The principal mission on the Main Area of the Station is to

- Provide services in energetics for all warfare centers through engineering, fleet and operational support, manufacturing technology, limited production, and industrial base support.

- Provide research, development, testing, and evaluation of energetic materials, ordnance devices and components, and other related ordnance engineering standards, including chemicals, propellants and their propulsion systems, explosives, pyrotechnics, warheads, and simulators.

- Provide support to all warfare centers, military departments, and the ordnance industry for special weapons, explosive safety, and ordnance environmental issues.

The Stump Neck Annex of IHDIV-NSWC is primarily occupied by tenant commands. Until recently, the Stump Neck Annex was occupied by two tenant commands, the Naval School Explosive Ordnance Disposal (NAVSCOLEOD) and the Naval Explosive Ordnance Disposal Technology Division (NAVEODTECHDIV). The mission of NAVSCOLEOD was the training of active military personnel in

performing explosive ordnance disposal (EOD) operations. In 1998, most operations at NAVSCOLEOD were relocated to Pensacola, Florida. Currently, NAVEODTECHDIV is the primary tenant command at the Stump Neck Annex. The mission of NAVEODTECHDIV is as follows:

- Provide EOD technology and logistics management.

- Develop war-essential elements of intelligence, equipment, and procedures to counter munitions, both United States and foreign, as required to support Department of Defense (DOD) components and the peacetime security needs of other agencies.

1.2 ENVIRONMENTAL HISTORY

Environmental studies at IHDIV-NSWC and all other Naval facilities are conducted under the DOD IR Program. The IR Program was authorized by the Chief of Naval Operations under Instruction, OPNAVINST 5090.1, dated May 2, 1983. Funding to pay for these environmental studies is allocated for DOD sites under the Environmental Restoration, Navy Account.

The IR Program parallels CERCLA (see Figure 1-2). Under CERCLA, abandoned waste sites that potentially contained hazardous constituents undergo several phases of environmental study that would ultimately determine the need for a remedy and, if necessary, the selection and implementation of the remedy for the site. The phases of investigation include the Preliminary Assessment/Site Inspection (PA/SI), Remedial Investigation/Feasibility Study (RI/FS), Record of Decision (ROD), and Remedial Design/Remedial Action (RD/RA). CERCLA also provides for removal actions if a site poses an immediate threat to human health or the environment.

The IHDIV-NSWC IR Program includes a total list of 65 sites. Sites numbered 1 through 29 and 39 through 57 are located on the Main Area of the facility. Sites numbered 30 through 38 and 58 through 65 are located on the Stump Neck Annex (see Figure 1-1).

Between 1990 and 2001, the sites at the Stump Neck Annex were managed under a Resource Conservation and Recovery Act (RCRA) Corrective Action Permit that provided for a process similar to CERCLA for site investigation and remediation. However, in 1998 the United States Environmental Protection Agency (EPA) Region III made the determination that the Stump Neck Annex was included under the National Priorities Listing of IHDIV-NSWC. As a result of the finalization of the Federal Facilities Agreement (FFA) between the Department of the Navy and EPA, the RCRA sites at the Stump Neck Annex are now included under the CERCLA program of the Main Area. Section 1.2.1 below describes the environmental history of the IR Program at the main area of the facility. Section 1.2.2

describes the environmental history of the Stump Neck Annex sites. Table 1-1 provides a list of all of the IR sites and Areas of Concern (AOCs) at the Main Area and the Stump Neck Annex.

1.2.1 IHDIV-NSWC MAIN AREA

Initial Assessment Study (IAS) (Sites 1-29)

The first IR Program objective is the collection and evaluation of data and historical evidence of hazardous constituents that might have contaminated the facility or that pose an imminent health hazard on or off the facility. The Navy completed an IAS of IHDIV-NSWC in May 1983 (NEESA, 1983). The IAS is equivalent to the Preliminary Assessment (PA) in the CERCLA process. The IAS examined a total of 38 potentially contaminated sites. Sites numbered 1 through 29 are located on the Main Area of the facility. Sites numbered 30 through 38 are located on the Stump Neck Annex. The 29 identified Main Area sites are listed below. Stump Neck Sites 30 through 38 are discussed in Section 1.2.2.

Site 1	Thorium Spill
Site 2	Waste Crankcase Oil applied to Torrense Road
Site 3	Nitroglycerin Explosion, Nitration Building Area
Site 4	Lloyd Road Oil Spill
Site 5	X-ray Building, Building 731
Site 6	Radiographic Facility, Building 1349
Site 7	HMX Spill, Slurry Mix Building
Site 8	Mercury Deposits, Building 766
Site 9	Patterson Avenue, Oil Spill
Site 10	Single-Base Propellant Grains Spill Area
Site 11	Caffee Road Landfill
Site 12	Town Gut Landfill
Site 13	Paint Solvents Disposal Area
Site 14	Waste Acid Disposal Pit
Site 15	Mercury Deposits in Manhole, Fluorine Lab
Site 16	Laboratory Chemical Disposal
Site 17	Disposed Metal Parts along Shoreline
Site 18	Hog Island
Site 19	Catch Basins at Chip Collection Houses
Site 20	Single Base Powder Facilities
Site 21	Bronson Road Landfill
Site 22	NG Slums Burning Site
Site 23	Hydraulic Oil Discharges from Extrusion Plant

Site 24	Abandoned Drain Lines
Site 25	Hypo Discharges from X-Ray Building No. 2
Site 26	Thermal Destructor 2
Site 27	Thermal Destructor 1
Site 28	Original Burning Ground
Site 29	The Valley

Of the 38 sites, the IAS recommended further study at Sites 5, 8, and 12 based on the available historical information. Because historical operations at Sites 6 and 25 were similar to those at Site 5, the IAS also recommended additional study at these two sites if further investigation of Site 5 indicated a problem.

The Navy completed a Confirmation Study at IHDIV-NSWC in September 1985. The Confirmation Study was designed to evaluate the presence or absence of contamination at Sites 5, 8, and 12. The results of the study are documented in the Naval Assessment for the Control of Industrial Pollutants (NACIP) Confirmation Study, Naval Ordnance Station, Indian Head, MD. Sites 5 and 8 were determined to have extensive levels of silver and mercury, respectively. Contamination in the pond adjacent to Site 12, however, was not found to be attributable to the landfill and is suspected to be the result of contamination from farther upstream.

The Navy completed removal actions at Sites 5 and 8 and continued investigations at Site 12. The removal actions involved the excavation of contaminated soils to prevent further transport and migration of the contamination, and risk to ecologically sensitive receptors. At Site 5, the Navy removed silver-contaminated soil from one swale on the site in 1992 and additional contaminated soil from another swale on the site in 1995. The soils from the first excavation were encapsulated and placed in the base of a large earthen explosion barrier expansion (the soils represent less than 4 percent of the total volume of the expansion). The soils from the second excavation were used to reclaim a gravel borrow pit on the Stump Neck Annex at IHDIV-NSWC. At Site 8, the Navy removed mercury-contaminated soil in 1984 and 1995. The soils removed in 1984 were disposed off-site, and soils removed in 1995 were disposed by encapsulating them in the earthen berm of Building 606 and covering them with a 1-foot thick layer of clay.

The Navy conducted a five-year biomonitoring program which demonstrated that contamination is not migrating from the landfill to the adjacent pond. A Remedial Investigation (RI) was completed in 1999. The RI recommended the preparation of a Feasibility Study (FS) to evaluate methods for mitigating environmental risks and to address regulatory concerns connected with landfill closure requirements. An FS for Site 12 was completed in January 2001. Subsequently, a Proposed Plan and fact sheet were published for the installation of a 2-foot thick soil cover over the Town Gut Landfill, and a public meeting

was held on January 23, 2001. The final design for the remediation of Site 12 was completed in February 2002.

In 1996, after further review of the original 29 IAS sites of the Main Area, the Navy, EPA and Maryland Department of the Environment (MDE) decided to subject Sites 6, 11, 13, 15, 16, 17, 21 and 25 to a RIs because of the potentially higher risks associated with these sites. RIs for those sites are currently ongoing. An RI is also planned for Site 28. Site 5 is currently undergoing a site screening investigation. The remainder of the original 29 IAS sites, including Site 8, will enter the Site Screening Process (SSP), which will provide for a second evaluation, potentially including some additional sampling, to confirm the presence or absence of contamination at the sites and the need for further action.

Supplemental Preliminary Assessment (PA) (Sites 39 –55)

The Navy completed a Supplemental PA Report for IHDIV-NSWC in January 1992. The PA was an addendum to the IAS and examined an additional 17 sites located on the Main Area. The 17 additional sites are listed below. All but Sites 51 and 52 were recommended for further action (i.e., additional investigation, contaminant removal, etc.).

Site 39	Silver Release to Sediments
Site 40	Palladium Catalyst in Sediment
Site 41	Scrap Yard
Site 42	Olsen Road Landfill
Site 43	Toluene Disposal
Site 44	Soak-Out Area
Site 45	Abandoned Drums
Site 46	Cadmium Sandblast Grit
Site 47	Mercuric Nitrate Disposal Area
Site 48	NG Plant Disposal Area
Site 49	Chemical Disposal Pit
Site 50	Building 103 Crawl Space
Site 51	Building 101 Dry Well
Site 52	Building 102 Dry Well
Site 53	Mercury Contamination of the Sewage System
Site 54	Building 101
Site 55	Building 102

As a follow-up to the Supplemental PA, the Navy conducted a Site Investigation (SI) on Sites 39 through 50 and Sites 53 through 55 in two phases. SI Phase I focused on Site 42, Olsen Road Landfill

and SI Phase II focused on the remainder of the sites. Based on the results of the SI, all the sites were recommended for further study to determine the nature and extent of contamination and to identify the appropriate remedial action.

The Navy completed work plans for the RI of these sites in 1997. RI Reports for Sites 41, 42 and 44 were completed in 1999. At Site 41, the RI recommended an FS to evaluate methods for mitigating human health and environmental risks posed by the contaminated surface soil at the site. The FS for Site 41 was completed in January 2001. Subsequently, a Proposed Plan and fact sheet were published for removing contaminated soil and removing polychlorinated biphenyl (PCB) contamination from the surface of the concrete slab within the Scrap Yard (Site 41), and a public meeting was held on February 20, 2001. The final design for the remediation of Site 41 is scheduled for completion in mid-2002. At Site 42, the RI recommended an FS to evaluate methods to address regulatory concerns connected with landfill closure requirements. The Site 42 FS has progressed to the draft final stage. Additional field investigations were conducted during January and February 2002 to better define the extent of the landfill and to assess the possibility that groundwater contamination may have migrated downgradient from the landfill. The RI for Site 44 recommended no further action, and no FS was prepared. Following the final RI for Site 44, a Proposed Plan and fact sheet for no action were published, and a public meeting was held on February 20, 2001. RODs for Sites 12, 41, and 44 have been prepared and are under review by the Navy and regulatory agencies.

Site screening investigations were conducted at Sites 51 and 52 during January and February 2002. RIs continue for the remainder of the 1992 PA sites.

Additional Sites (56- 57)

Since the 1992 PA, two additional sites have been discovered on the Main Area of IHDIV-NSWC.

Site 56	IW-87 Lead Outfall
Site 57	Building 292 TCE Contamination

Based on site sampling, the Navy performed Engineering Evaluations/Cost Analyses (EE/CAs) in 1994 and 1997 respectively to evaluate the removal action options at Site 56 and Site 57. The Navy conducted a removal action at Site 56 in 1996 that involved the removal of lead-contaminated sediments at IW–87 and the lining of the outfall pipe. These soils were properly disposed off-site. In 1998, the Navy completed a removal action at Site 57 to address infiltration of trichoroethene (TCE) contaminated groundwater into a storm sewer leading to outfall IW-80. Approximately 700 feet of storm sewer were lined to inhibit the accelerated migration of TCE. The Navy completed the RI at Site 57 in July 2000. During August 2001, a field investigation was conducted at Site 57 to collect field data to aid in the

evaluation of remedial alternatives during the preparation of an FS. Preparation of the FS is ongoing at this writing.

Areas of Concern (AOC)

In addition to the 48 sites discussed in this section, 15 AOCs in the Main Area are also being evaluated under the IR Program. These AOCs were originally identified as RCRA solid waste management units (SWMUs) and they are currently inactive. These AOCs have undergone a desk-top audit, which involves a thorough review and evaluation of all existing or easily obtainable documentation on the identified areas. Based on this evaluation, the Navy, EPA Region III, and MDE decided which AOCs should proceed to the SSP, and which AOCs will require no action and can be closed out. A summary of the results of the desk-top audit appears in Table 1-2.

1.2.2 STUMP NECK ANNEX

In November 1980, IHDIV-NSWC submitted a RCRA Part A permit application to the EPA for designation of specific Stump Neck operations as hazardous waste management facilities with interim status. On October 6, 1981, EPA advised Naval Explosive Ordnance Technology Center (now NAVEODTECHDIV) that, pursuant to Section 3005 of RCRA regulations, the application did not demonstrate that the facility was required to have a permit under Section 3005 of the Act, and the application was returned. However, the EPA did issue an identification (EPA I.D. No. MD4170090001) and the state of Maryland subsequently issued an interim permit (No. A223A).

The 1983 IAS of 38 sites at IHDIV-NSWC had identified nine sites (Sites 30 through 38). These nine sites are listed below, are addressed as site screening areas and will continue under the SSP. The SSP will provide for a second evaluation, potentially including some additional sampling, to confirm the presence or absence of contamination at the sites and the need for further action. Sites 32, 33, 34, 36, and 37 are currently part of an ongoing site screening field investigation. The remaining sites, Sites 30, 31, 35, and 38 will begin the SSP in the future.

Site 30	Stump Neck Impact Area
Site 31	Old Demolition Range
Site 32	Suspected Tool Burial Site
Site 33	Scrap Metal Pit
Site 34	Tool Burial Site
Site 35	Torpedo Burial Site
Site 36	Inactive Disposal Site

Site 37	Causeway
Site 38	Rum Point Landfill

Because the facility was identified as a RCRA operating facility, the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA authorized EPA to require corrective action for releases of hazardous waste or hazardous constituents from SWMUs and other AOCs. The first phase of the corrective action program, as established by EPA, is to conduct a RCRA Facilities Assessment (RFA). The RFA includes a preliminary review (PR) of all available relevant documents, and a visual site inspection (VSI). The EPA Office of RCRA Programs conducted a RCRA SWMU Investigation of the NAVEDOTECHDIV at the NSWC-IHDIV and issued a draft RCRA Facilities Assessment in July 1990. The RFA identified 24 SWMUs at the Stump Neck Annex:

SWMU 1	Rum Point Landfill
SWMU 2	Range 3 Burn Point
SWMU 3	Chicamuxen Creek's Edge Site A
SWMU 4	Chicamuxen Creek's Edge Site B
SWMU 5	Range 6
SWMU 6	Air Blast Pond
SWMU 7	Scrap Metal Pit
SWMU 8	Tool Burial Site
SWMU 9	Torpedo Burial Site
SWMU 10	Inactive Disposal Site
SWMU 11	Suspected Tool Burial Site
SWMU 12	Waste Oil Storage Site
SWMU 13	Pink Water Treatment Tank
SWMU 14	Photographic Lab Septic Tank System
SWMU 15	Spent Photographic Solution Storage
SWMU 16	Thermal Treatment Tank
SWMU 17	Building 2015 - Chem Lab Accumulation Area
SWMU 18	Waste Pile
SWMU 19	Disposal Area No. 1
SWMU 20	Disposal Area No. 2
SWMU 21	Drum Storage Area
SWMU 22	Stump Neck Impact Area
SWMU 23	Old Demolition Range
SWMU 24	Causeway

In December 1990, EPA issued a RCRA Permit for Corrective Action (effective January 24, 1991 and expiring on January 23, 2001). Of the 24 SWMUs, the following six SWMUs were required by permit conditions to undergo further investigation. SWMU 1 had previously been designated as Site 38 during the IAS. SWMUs 2 through 6 were assigned IR site numbers 58 through 62. The permit required verification investigations (VIs) at Sites 38, 60, and 62 and RCRA Facilities Investigations (RFI) at Sites 58, 59, and 61. Draft reports for these investigations were completed in January 1998. These sites are addressed as site screening areas, and information and conclusions from these draft reports will be used in the SSP.

Site 38	SWMU 1	Rum Point Landfill
Site 58	SWMU 2	Range 3 Burn Point
Site 59	SWMU 3	Chicamuxen Creek's Edge Site A
Site 60	SWMU 4	Chicamuxen Creek's Edge Site B
Site 61	SWMU 5	Range 6
Site 62	SWMU 6	Air Blast Pond

Pursuant to the requirements of the RCRA Corrective Action Permit, IHDIV-NSWC notified the EPA Region III RCRA Programs Branch in 1991 of three additional SWMUs that were not originally identified in the RFA but warranted further investigation. These three sites are listed below. These SWMUs were associated with operations of the Naval School Explosive Ordnance Disposal. The three “school” sites included Sites 63, 64, and 65 (SWMUs 25, 26, and 27), which would become inactive with the relocation of the school. The Navy completed a VI report on the three sites in June 1996. The Navy will address these three sites as site screening areas, and will continue under the SSP.

Site 63	SWMU 25 Area 8
Site 64	SWMU 26 IED
Site 65	SWMU 27 IOD

Areas of Concern (AOC)

In 1991, the Navy discovered a fourth SWMU (SWMU 30), which was associated with a dry well that was connected to a laboratory located in Building 2015. SWMU 30 and 10 of the 24 originally identified SWMUs will be evaluated under the IR Program as AOCs. These ten SWMUs are listed below. These AOCs were subjected to a desk-top audit on November 28, 2001. The audit involved a thorough review of all existing or easily obtainable documentation/information on the identified areas.

SWMU 12 Waste Oil Storage Site SWMU 13 Pink Water Treatment Tank
SWMU 14 Photographic Lab Septic Tank System,

SWMU 15 Spent Photographic Solution Storage
SWMU 16 Thermal Treatment Tank
SWMU 17 Building 2015 - Chem Lab Accumulation Area
SWMU 18 Waste Pile
SWMU 19 Disposal Area No. 1
SWMU 20 Disposal Area No. 2
SWMU 21 Drum Storage Area
SWMU 30 Building 2015 Dry Well

In 1992, IHDIV-NSWC notified EPA of two additional sites at the Stump Neck Annex, which later became SWMUs 28 and 29. These units were also included in the desk-top audit of AOCs conducted for the ten sites listed above.

SWMU 28 Old Skeet and Trap Range
SWMU 29 Pistol Range

A total of 13 Stump Neck AOCs were included in the desk-top audit. Table 1-3 provides a summary of the results of the audit.

The FFA officially incorporated the Stump Neck SWMUs from the RCRA Program into the IHDIV-NSWC CERCLA Program. This results from an FFA clause requiring that any cleanups needed for RCRA SWMUs due to past releases will be addressed under the FFA and CERCLA, but, otherwise, the SWMUs will be handled under RCRA. At this point, 17 of the 30 total SWMUs at the Stump Neck Annex are being addressed within the SSP to evaluate if any action needs to be taken at the sites. The remaining SWMUs have been evaluated under the IR Program as AOCs. As with the Main Area, these AOCs were subjected to a desk-top evaluation, which involved a thorough review of all existing or easily obtainable documentation/information on the identified areas. Based on this evaluation, decisions were made by the Project Managers as to which AOCs will proceed to the SSP, and which AOCs will require no action and can be closed out.

1.3 PURPOSE OF THE SITE MANAGEMENT PLAN

The SMP is intended to be a living document. It serves as a tool to support planning, scheduling, and budgeting future activities at sites located on the IHDIV-NSWC. The SMP will be updated annually, as required by the FFA.

In addition to providing a record of the milestones achieved in connection with each site, the SMP presents the anticipated milestones for the future work necessary to address the potential adverse impacts of contamination at each site.

1.4 FORMAT OF THE SITE MANAGEMENT PLAN

This SMP document is organized into four sections and three appendices. Section 1.0 presents a brief description of the IHDIV-NSWC, a summary of the facility's overall environmental history, and a description of the purpose of this document. Section 2.0 provides fact sheets for each site and AOC in the program. Each of the fact sheets presents a compilation of historical information and summarized data extracted from previously prepared studies and reports. All the documents supplying information to this SMP are listed in the References section located at the end of this document. Section 3.0 consists of 2 maps of the IHDIV-NSWC showing the approximate location of each of the sites discussed. Section 4.0 provides a schedule of future activities for the sites recommended for further action. The schedules present the sequence of activities anticipated to be necessary for the completion of critical steps in the IRP. Appendices A and B supplement the Site Location Map by presenting figures for each of the sites. Appendix A includes sites at the Main Area and Appendix B includes sites at the Stump Neck Annex. These figures offer a more detailed view of site locations and features in the immediate vicinity of the respective sites. Appendix C is a separately bound photographic log of photographs collected during a visit to the sites by Halliburton NUS personnel during January 1995 and is unchanged from its original publication. This photo log is organized by site number. Photographs are not currently available for all the sites.

TABLE 1-1

INSTALLATION RESTORATION (IR) SITES,
and SOLID WASTE MANAGEMENT UNITS (SWMUs)

MAIN AREA AND STUMP NECK
INDIV-NSWC,INDIAN HEAD, MARYLAND

IR Site ID	SWMU ID	Name of IR Site or Area of Concern	Main Area (MA)/ Stump Neck (SN)	Relative Risk	FFA Group	Status	Comments
		IR SITES					
1		Thorium Spill	MA	Low	SSA	SSP	
2		Waste Crank Case Oil Applied to Torrence Road	MA	Low	SSA	SSP	
3		Nitroglycerin Explosion, Nitration Building Area	MA	Low	SSA	SSP	
4		Lloyd Road Oil Spill Sites	MA	Low	SSA	SSP	
5		X-Ray Building 731	MA	Medium	SSA	SSI	
6		Building 1349, Hypo Spill	MA	High	RI/FS	RI/FS	
7		Building 682, HMX Spill	MA	Medium	SSA	SSP	
8		Building 766, Mercury Deposits	MA	High	SSA	SSP	
9		Patterson Avenue, Oil Spill	MA	Low	SSA	SSP	
10		Single-base Propellant Grains Spill	MA	Low	SSA	SSP	
11		Caffee Road Landfill	MA	High	RI/FS	RI/FS	Investigate with Main Area SWMUs 21 & 38
12		Town Gut Landfill	MA	High	RI/FS	RI/FS	
13		Paint Solvents Disposal Ground	MA	High	RI/FS	RI/FS	
14		Waste Acid Disposal Pit	MA	High	SSA	SSP	
15		Mercury Deposits in Manhole, Fluorine Lab	MA	High	RI/FS	RI/FS	
16		Laboratory Chemical Disposal	MA	High	RI/FS	RI/FS	
17		Disposal Metal Parts Along Shoreline	MA	High	RI/FS	RI/FS	
18		Hog Island	MA	Low	SSA	SSP	
19		Catch Basins at Chip Collection Houses	MA	Low	SSA	SSP	
20		Single-base Powder Facilities	MA	Low	SSA	SSP	
21		Bronson Road Landfill	MA	High	RI/FS	RI/FS	
22		NG Slums Burning Site	MA	Low	SSA	SSI	
23		Hydraulic Oil Spill Discharges From Extrusion Plant	MA	Low	SSA	SSP	
24		Abandoned Drain Lines	MA	Medium	SSA	SSP	
25		Hypo Discharge X-Ray Building No. 2	MA	High	RI/FS	RI/FS	
26		Thermal Destructor 2	MA	Low	SSA	SSP	
27		Thermal Destructor 1	MA	Low	SSA	SSP	
28		Original Burning Ground	MA	High Medium	SSA	RI/FS	
29		The Valley	MA	Low	SSA	SSP	
30	22	Stump Neck Impact Area	SN	NE	SSA	SSP	
31	23	Old Demolition Range	SN	NE	SSA	SSP	
32	11	Suspected Tool Burial Site	SN	NE	SSA	SSI	
33	7	Scrap Metal Pit	SN	NE	SSA	SSI	
34	8	Tool Burial Site	SN	NE	SSA	SSI	
35	9	Torpedo Burial Site	SN	NE	SSA	SSP	
36	10	Inactive Disposal Site	SN	NE	SSA	SSI	
37	24	Causeway	SN	NE	SSA	SSI	
38	1	Rum Point Landfill	SN	Medium	SSA	SSP	
39		Organics Plant	MA	High	RI/FS	RI/FS	
40		Palladium Catalyst in Sediments	MA	Low	RI/FS	RI/FS	

TABLE 1-1

INSTALLATION RESTORATION (IR) SITES,
and SOLID WASTE MANAGEMENT UNITS (SWMUs)

MAIN AREA AND STUMP NECK
INDIV-NSWC,INDIAN HEAD, MARYLAND

IR Site ID	SWMU ID	Name of IR Site or Area of Concern	Main Area (MA)/ Stump Neck (SN)	Relative Risk	FFA Group	Status	Comments
41		Scrap Yard	MA	High	RI/FS	RI/FS	
42		Olsen Road Landfill	MA	High	RI/FS	RI/FS	
43		Toluene Disposal Site	MA	Low	RI/FS	RI/FS	
44		Soak Out Area	MA	Medium	RI/FS	RI/FS	
45		Abandoned Drums	MA	Medium	RI/FS	RI/FS	
46		Cadmium Sandblast Grit	MA	Low	RI/FS	RI/FS	
47		Mercuric Nitrate Disposal Area	MA	High	RI/FS	RI/FS	
48		Nitroglycerine Plant Disposal Area	MA	Low	RI/FS	RI/FS	
49		Chemical Disposal Area	MA	High	RI/FS	RI/FS	
50		Building 103, Crawl Space	MA	High	RI/FS	RI/FS	
51		Building 101, Dry Well	MA	NE		NoA	
52		Building 102, Dry Well	MA	NE		NoA	
53		Mercury Contamination of the Sewage System	MA	High	RI/FS	RI/FS	
54		Building 101	MA	High	RI/FS	RI/FS	
55		Building 102	MA	High	RI/FS	RI/FS	
56		IW87 - Lead Contamination	MA	Low	RI/FS	RI/FS	
57		TCE Building 292 Area	MA	High	RI/FS	RI/FS	
58	2	Range 3 Burn Point	SN	High	SSA	SSP	Investigate with Stump Neck SWMU 16
59	3	Chicamuxen Creek's Edge Site A	SN	High	SSA	SSP	
60	4	Chicamuxen Creek's Edge Site B	SN	Medium	SSA	SSP	
61	5	Range 6	SN	Medium	SSA	SSP	
62	6	Air Blast Pond	SN	Medium	SSA	SSP	
63	25	Area 8	SN	Medium	SSA	SSP	
64	26	IED (+SN SWMU 19)	SN	Medium	SSA	SSP	
65	27	IOD	SN	Medium	SSA	SSP	
		AREAS OF CONCERN					
	6	Used Battery Accumulation Area (Bldg. 766)	MA	NE	AOC	NoA	
	20	Safety Burn Point	MA	NE	AOC	RI	
	21	Caffee Road Decontamination Burn Point	MA	NE	AOC	RI	Investigate with Site 11
	27	Waste Oil Storage Area (Goddard Power Plant)	MA	Low	AOC	NoA	
	38	Caffee Road Waste Oil Storage Area	MA	Low	AOC	RI	Investigate with Site 11
	69	Temp Accumulation Dumpster for Explosive Scrap	MA	Low	AOC	NoA	
	70	Temp Accum Areas for Drummed Explosive Scrap	MA	Low	AOC	NoA	
	72	Oil/Water Separators	MA	Low	AOC	NoA	
	74	Unlined Overland Drainage Ditches	MA	Low	AOC	AOC	
	4,5	Underground Storage Tanks (Bldg. 290 and 525)	MA	NE	AOC	NoA	
	40-46	Wastewater Collection/Treatment Tanks (Moser Plant)	MA	Low	AOC	NoA	
	47-51	Spent Acid Storage/Treatment Tanks (Moser Plant)	MA	Low	AOC	NoA	
	64-66	Waste Water Storage Tanks (Bldg. 1596)	MA	Low	AOC	NoA	
	AOC G	Sand Blasting Sand Storage Area	MA	Low	AOC	NoA	
	AOC H	Drum at Fuel Storage Area	MA	Low	AOC	NoA	

TABLE 1-1

INSTALLATION RESTORATION (IR) SITES,
and SOLID WASTE MANAGEMENT UNITS (SWMUs)

MAIN AREA AND STUMP NECK
INDIV-NSWC,INDIAN HEAD, MARYLAND

IR Site ID	SWMU ID	Name of IR Site or Area of Concern	Main Area (MA)/ Stump Neck (SN)	Relative Risk	FFA Group	Status	Comments
	12	Waste Oil Storage Site	SN	NE	AOC	NoA	
	13	Pink Water Treatment Tank	SN	NE	AOC	RCRA	
	14	Photographic Lab Septic Tank System	SN	NE	AOC	AOC	
	15	Spent Photographic Solution Storage	SN	NE	AOC	NoA	
	16	Thermal Treatment Tank	SN	NE	AOC	RI	Investigate with Site 58
	17	Bldg. 2015 – Chem Lab Accumulation Area	SN	NE	AOC	NoA	
	18	Waste Pile	SN	NE	AOC	NoA	
	19	Disposal Area #1	SN	NE	AOC	RI	Investigate with Site 64
	20	Disposal Area #2	SN	NE	AOC	SSP	Investigate with Stump Neck SWMU 28
	21	Drum Storage Area	SN	NE	AOC	NoA	
	28	Skeet Range	SN	NE	AOC	SSP	Investigate with Stump Neck SWMU 20
	29	Old Pistol Range	SN	NE	AOC	AOC	
	30	Bldg. 2015 Dry Well	SN	NE	AOC	AOC	

AOC =Area of Concern
IR =Installation Restoration
NE =Not Evaluated
NoA =No Action
RCRA =Resource Conversation and Recovery Act
RI/FS =Remedial Investigation/Feasibility Study
SSA =Site Screening Assessment
SSI =Site Screening Investigation
SSP =Site Screening Process

TABLE 1-2

SUMMARY OF DESK-TOP AUDIT
MAIN AREA AREAS OF CONCERN (AOCs)
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

AOC	NAME	DECISION
Main Area SWMUs 4 and 5	Underground Storage Tanks (Buildings 290/525)	No action required
Main Area SWMU 6	Used Battery Accumulation Area (Building 290)	No action required
Main Area SWMU 27	Waste Oil Storage Area (Goddard Power)	No action required
Main Area SWMU 38	Caffee Road Waste Oil Storage Area	Investigate with Site 11 remedial investigation
Main Area SWMUs 40 – 46	Wastewater Collection/Treatment Tanks	No action required
Main Area SWMUs 47 –51	Spent Acid Storage/Treatment Tanks	No action required
Main Area SWMUs 64 – 66	Wastewater Storage Tanks (Building 1596)	No action required
Main Area SWMU 69	Temporary Dumpster for Explosive Scrap	No action required
Main Area SWMU 70	Temporary Areas for Drummed Explosive Scrap	No action required
Main Area SWMU 72	Oil/Water Separators	No action required
Main Area SWMU 74	Unlined Overland Drainage Ditches	Retain as an AOC pending further investigation
Main Area AOC G	Sand-Blasting Sand Storage Area	No action required
Main Area AOC H	Drum at Fuel Storage Area	No action required
Main Area SWMU 20	Safety Burn Point	Conduct a remedial investigation
Main Area SWMU 21	Caffee Road Decontamination Burn Point	Investigate with Site 11 remedial investigation

TABLE 1-3

SUMMARY OF DESK-TOP AUDIT
STUMP NECK ANNEX AREAS OF CONCERN (AOCs)
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

AOC	NAME	DECISION
Stump Neck SWMU 12	Waste Oil Storage Site	No action required
Stump Neck SWMU 13	Pink Water Treatment Tank	Manage under the RCRA program
Stump Neck SWMU 14	Photographic Lab Septic System	Retain as an AOC pending further investigation
Stump Neck SWMU 15	Spent Photographic Solution Storage	No action required
Stump Neck SWMU 16	Thermal Treatment Tank	Investigate with Site 58 remedial investigation
Stump Neck SWMU 17	Building 2015 – Chemical Lab Accumulation Area	No action required
Stump Neck SWMU 18	Waste Pile	No action required
Stump Neck SWMU 19	Disposal Area No. 1	Investigate with Site 64 remedial investigation
Stump Neck SWMU 20	Disposal Area No. 2	Investigate with Stump Neck SWMU 28
Stump Neck SWMU 21	Drum Storage Area	No action required
Stump Neck SWMU 28	Old Skeet and Trap Range	Investigate with the site screening process
Stump Neck SWMU 29	Pistol Range	Retain as an AOC pending further investigation
Stump Neck SWMU 30	Building 2015 Dry Well	Retain as an AOC pending further investigation

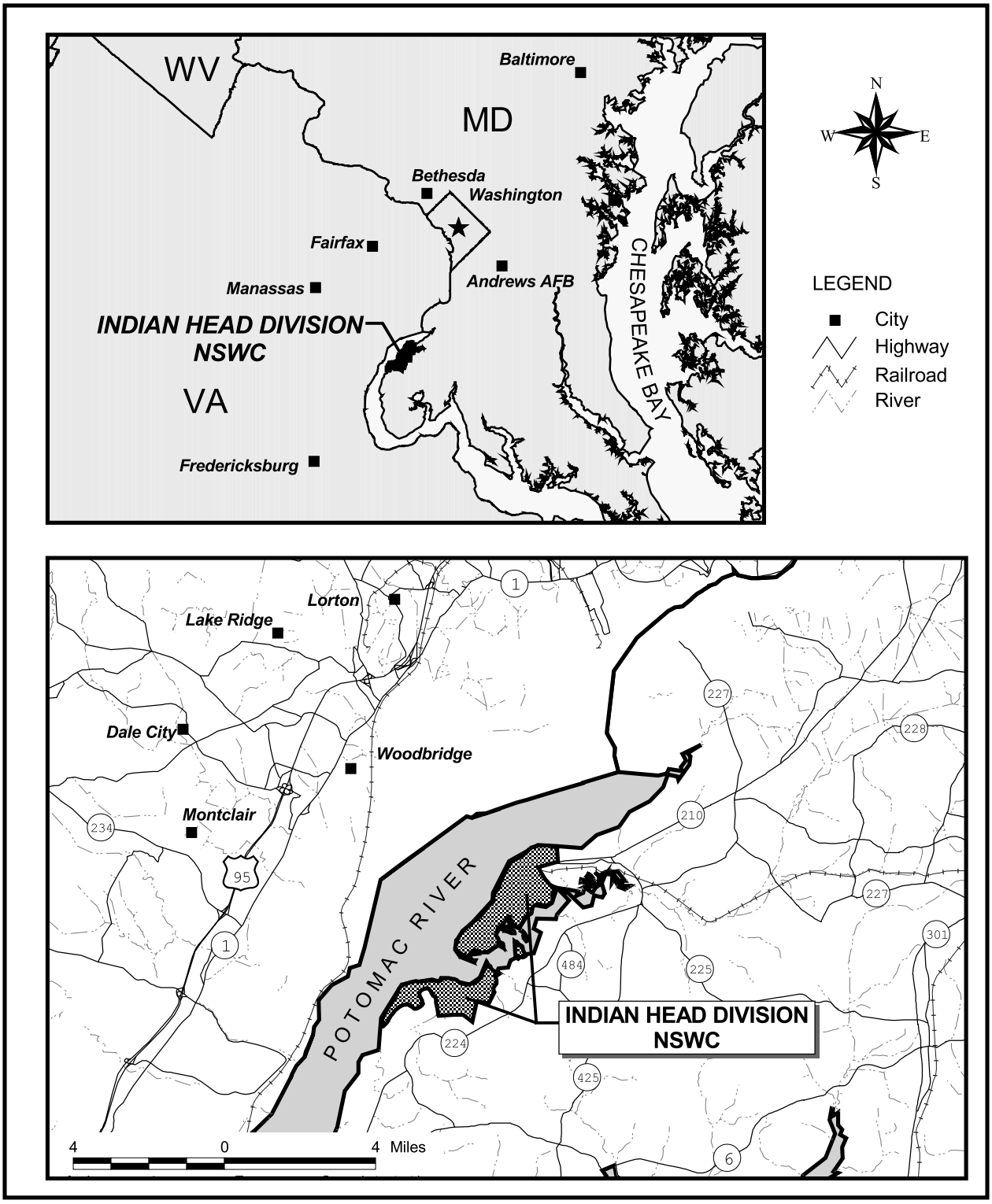

FIGURE 1-1

FACILITY LOCATION MAP
INDIAN HEAD DIVISION NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

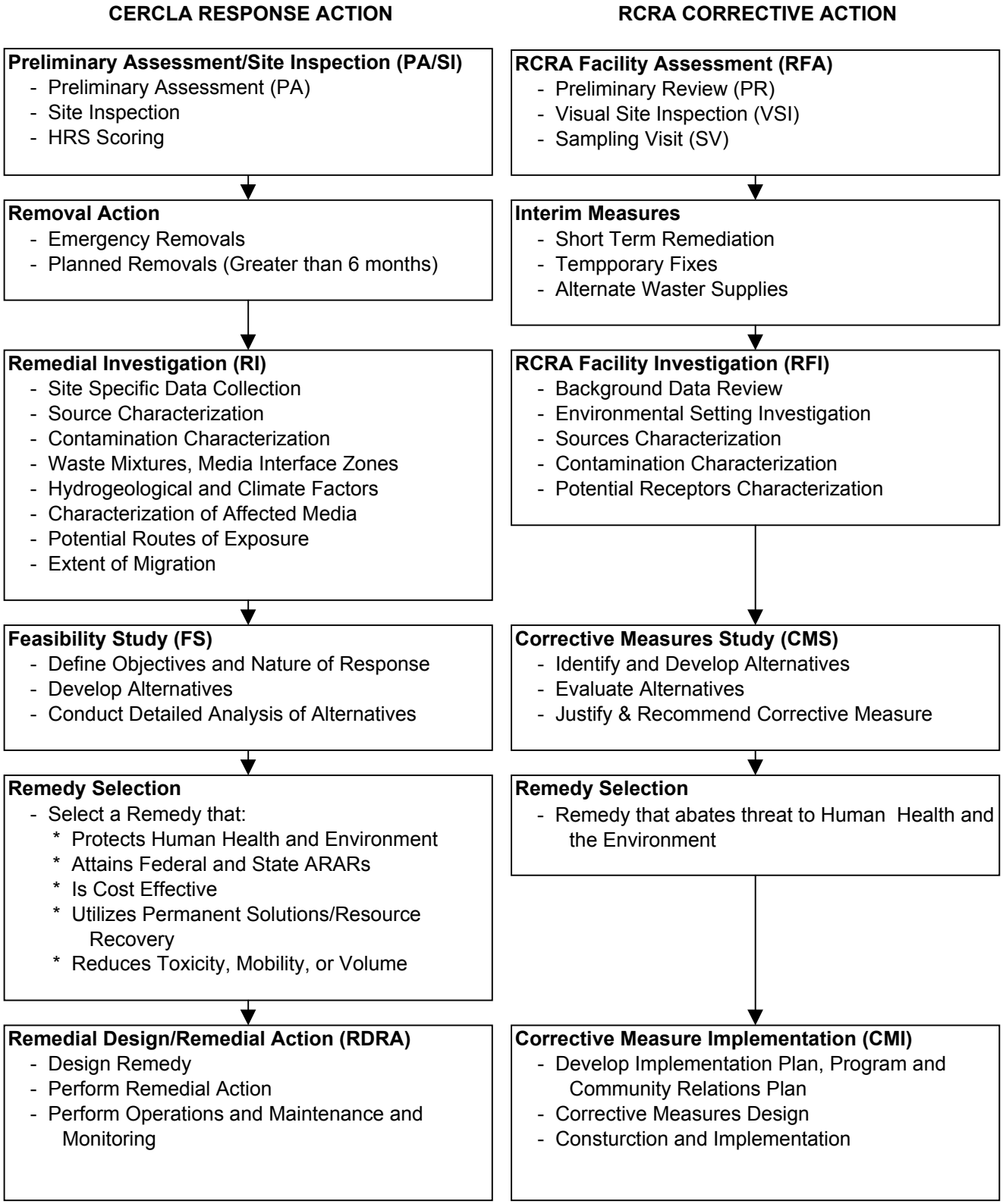

FIGURE 1-2

CERCLA PROCESS VS. RCRA PROCESS
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

2.0 SITE DESCRIPTIONS

Section 2.0 contains a series of fact sheets addressing each site's history, current conditions, recent investigative activity, and recommended future action. Section 2.0 contains limited historical information representing a compilation of historical documents. References from which the fact sheets were developed are listed in the bibliography at the end of this SMP.

Section 2.1 contains descriptions of the IR sites and AOCs located on the Main Area of IHDIV-NSWC. Section 2.2 contains descriptions of the IR sites and AOCs located at the Stump Neck Annex

2.1 SITE DESCRIPTIONS – MAIN AREA

This section includes the fact sheets for the Main Area IR sites and AOCs.

THORIUM SPILL

(OLD MAP GRID C27)
IR Site 1
Fact Sheet

1. Contamination:

Thorium.

2. Location:

Special Weapons Disposal Building (Building 900).

3. From:

Thorium was spilled during training that was conducted at Building 900.

4. When:

Date of spill is unknown.

5. Generated By:

Thorium was spilled during a training session at the building.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a thorough survey and Confirmation Study be conducted prior to any excavation or change in land use.

8. Current Status:

Awaiting Initiation of Site Screening Process.

WASTE CRANK CASE OIL APPLIED TO TORRENCE ROAD

(OLD MAP GRID E17)
IR Site 2
Fact Sheet

1. Contamination:

Waste oil.

2. Location:

Torrence Road behind Building 290 (Public Works Department maintenance garage).

3. From:

Waste oil from Transportation Branch buildings was reportedly applied to unpaved roads for dust control.

4. When:

Prior to 1965.

5. Generated By:

Waste oils from the Transportation Branch buildings consisted of crankcase, hydraulic, transmission, and motor oils.

6. Amount:

7,700 gallons annually.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that that a Confirmation Study should not be conducted for Site 2.

8. Current Status:

Awaiting Initiation of Site Screening Process.

NITROGLYCERIN EXPLOSION , NITRATION BUILDING AREA

(OLD MAP GRID E17)
IR Site 3
Fact Sheet

1. Contamination:

Residual nitroglycerin.

2. Location:

Vicinity of Nitration Building, Building 1543.

3. From:

Explosion in former Nitration Building, Building 675.

4. When:

1971.

5. Generated By:

Explosion in former Nitration Building.

6. Amount:

Unknown

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that that a Confirmation Study should not be conducted for Site 3.

8. Current Status:

Awaiting Initiation of Site Screening Process.

LLOYD ROAD OIL SPILL SITES

(OLD MAP GRID E37)
IR Site 4
Fact Sheet

1. Contamination:

Waste Oil.

2. Location:

On Lloyd Road near the Public Works Department Maintenance garage area, Building 290.

3. From:

Waste oil spilled from a dumpster that was used to store waste petroleum.

4. When:

Prior to 1981.

5. Generated By:

Waste oil from the Public Works maintenance operations was deposited in a dumpster. Waste oil consisted of fuel oil, motor oil, and kerosene.

6. Amount:

Estimated to be 50 to 100 gallons.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study should not be commissioned for this site.

8. Current Status:

Awaiting Initiation of Site Screening Process.

X-RAY BUILDING 731

(OLD MAP GRID F6, F7)
IR Site 5
Fact Sheet

1. Contamination:

Silver from spent fixer and developer.

2. Location:

Drainage swales behind Building 731 that flow to Mattawoman Creek.

3. From:

Discharge of spent fixer and developer for X-Ray film.

4. When:

1953 to 1965.

5. Generated By:

Fixer and developer are used to develop X-Ray film. Some of the silver, which is on the film, becomes "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 731 into two separate swales.

6. Amount:

Up to 720 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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program.

b. A Confirmation Study, the NACIP equivalent of an IR site inspection was completed in 1985 to determine if silver was actually present in the sediment at the site.

c. A removal action was performed on the eastern swale from November 1992 through January 1993. The silver-contaminated soil of the swale was removed, solidified, and stabilized, and placed in an earthen berm.

d. A removal action was performed on the western swale from December 1994 through January 1995. The silver-contaminated soil of the swale was removed and placed in a borrow pit at Rum Point on Stump Neck Annex. The soil was covered with an impermeable layer of soil (clay), which was then covered with top soil and reseeded.

e. A site screening assessment (SSA) field investigation was completed in 2001 and 2002. Groundwater monitoring wells were installed and sampled for a target compound list volatile and semivolatile organic compounds and target analyte list (TAL) metals. Sediment and surface water samples were collected in the western swale and analyzed for TAL metals.

f. The SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Continuation of the SSA process.

HYPO SPILL, RADIOGRAPHIC FACILITY ACCELERATOR

CONTROL BUILDING, AND OPEN DRAIN
(OLD MAP GRID G3)
IR Site 6
Fact Sheet

1. Contamination:

Silver from spent fixer.

2. Location:

Drainage swales south of Buildings 1349 and 1140.

3. From:

Spill of fixer for X-Ray film during transfer of storage tank contents.

4. When:

Reportedly 1965 to 1977.

5. Generated By:

Fixer and developer are used to develop X-Ray film. Some of the silver, which is on the film, becomes "fixed" to the X-Ray, and the remainder of the silver is washed off.

6. Amount:

10 gallons.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that that a Confirmation Study should be conducted for Site 6 if the Site 5 study revealed a danger to aquatic life. Because Site 5 soil was determined to pose a threat to ecological receptors, it was determined that a remedial investigation (RI) should be conducted at Site 6.

b. RI fieldwork was completed at Site 5 in 2001. Surface soil, shallow subsurface soil, surface water, and shallow groundwater samples were collected and analyzed for silver.

c. The RI report is currently undergoing Navy and Regulatory review. The final RI report is expected to be completed in early 2003.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

HMX SPILL, SLURRY MIX BUILDING

(OLD MAP GRID G17)
IR Site 7
Fact Sheet

1. Contamination:

Lead, HMX, phthalate esters, oil, and grease.

2. Location:

Slurry Mix Building, Building 682, and associated open drainage ditch(IW10).

3. From:

Wastewater from dewatering HMX and building floor washdown.

4. When:

Between 1964 and 1968.

5. Generated By:

Facility processing procedures included dewatering HMX, which was purchased in a slurry form and dewatered in an eductor vacuum filter. Wastewater was discharged into the floor drain and from there to an open storm ditch (IW10).

6. Amount:

168 pounds of HMX and 5 pounds of lead.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 7.

8. Current Status:

Awaiting Initiation of Site Screening Process.

MERCURY CONTAMINATION FROM BUILDING 766

(OLD MAP GRID G-20)
IR Site 8
Fact Sheet

1. Contamination:

Mercury.

2. Location:

The drainage system from Building 766, which included a stormwater manhole, a ditch, and a pond that discharges into Mattawoman Creek.

3. From:

Lab operations.

4. When:

1958 to 1981.

5. Generated By:

During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from transferring mercury to the slop jar were common. Jars of mercury often broke during rinsing in the sink.

6. Amount:

Estimates range from 23 to 500 pounds of elemental mercury.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program.

b. A Confirmation Study, the NACIP equivalent of an IR site inspection was completed in 1985 to determine if mercury was actually present in the sediment at the site.

c. While construction work was being performed in the area of Building 766 in 1985, the contractor inadvertently broke the drain pipe leading from the building to a manhole. Mercury was discovered in the pipe and ground at the site of excavation. Approximately 200 drums of mercury contaminated soil were removed from the area near the manhole and properly disposed.

d. The floor drains were sealed shut with concrete, and sink drains were re-routed to the sewage treatment system. In addition, mercury traps were placed on the drains to collect any mercury that may inadvertently enter the drain.

e. A Confirmation Study was performed in 1985 to determine the extent of mercury contamination throughout the ditch. The mercury in the soil was present in the highest concentration directly under the pipe which discharges into the ditch. The mercury concentrations then decreased downstream from the pipe. The Confirmation Study recommended monitoring mercury levels over a 5-year period. Water monitoring samples taken between the pond and Mattawoman Creek did not indicate any movement of the mercury.

f. The U.S. Fish and Wildlife Service sampled fish in Mattawoman Creek for the 5-year period ending in 1991 to determine if fish were bioaccumulating mercury. Fish upstream from the entrance location to the creek have been sampled to determine background levels of mercury within the fish. The background level is the amount of mercury that is normally found in the fish. The U.S. Fish and Wildlife Service has also sampled fish downstream from the entrance location to the Creek to determine if the levels are different. In the past, fish downstream were found to contain mercury at a level slightly higher than those upstream. The latest report from the U.S. Fish and Wildlife Service indicates that the mercury levels in both the fish upstream and downstream from IR Site 8 contain equivalent levels of mercury. Mercury levels of the fish from both areas, however, have been within regulatory limits.

g. A potential problem with IR Site 8 is the transport of mercury downstream through entrainment, especially during storm events, such as heavy rains. Although the tidal pond acts as a natural sediment basin, a weir was installed in June 1992. The weir provides additional settling time to ensure that any sediment that has flowed from the upper section of the stream into the pond will not exit into Mattawoman Creek.

h. Approximately 200 water and sediment samples were taken from the ditch, the pond, and Mattawoman Creek during the week of August 24, 1992 to better characterize the location and extent of mercury in the drainage system. Based on the sample results, an Engineering Evaluation/ Cost Analysis (EE/CA) was prepared to determine the best alternative to be taken to ensure protection of human health and the environment. The alternative recommended in the EE/CA was to remove the area of highest mercury contamination. This area, the upper section of the stream, could be considered a source to the receptor (tidal pond) downstream, it was approximately 300 feet in length, and it contained mercury at concentrations above 10 parts per million (ppm).

i. In October 1992, a biomonitoring program was initiated to determine the effect of mercury on the biota (plant and animal life) in the tidal pond. The results of the study did not show any adverse affects on the biota of the pond due to the mercury.

j. In June 1994, the removal action was begun to remove the mercury-contaminated sediment in the first 300 feet of the ditch, as recommended in the EE/CA. The soil that was removed was placed in the soil cover of an explosives storage magazine, Building 606. The soil was capped with clay and then topsoil and was reseeded. This work was completed in December 1994.

8. Current Status:

Awaiting Initiation of Site Screening Process.

PATTERSON AVENUE, OIL SPILL

(OLD MAP GRID G37)
IR Site 9
Fact Sheet

1. Contamination:

Fuel Oil.

2. Location:

South of Building 320.

3. From:

Spill of fuel oil from a tanker truck.

4. When:

Circa 1958.

5. Generated By:

Spill of fuel oil from a tanker truck.

6. Amount:

10,000 gallons.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 9.

8. Current Status:

Awaiting Initiation of Site Screening Process.

SINGLE-BASE PROPELLANT GRAINS SPILL AREA

(OLD MAP GRID I37 TO I39; O37 TO O39)
IR Site 10
Fact Sheet

1. Contamination:

Nitrocellulose propellant grains.

2. Location:

14-acre site near the Powder Dry Houses.

3. From:

Spill of NC grains during railroad transportation.

4. When:

Estimated between 1900 and 1957.

5. Generated By:

Spill of NC grains during railroad transportation.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 10.

8. Current Status:

Awaiting Initiation of Site Screening Process.

CAFFEE ROAD LANDFILL

(OLD MAP GRID K6, L6)
IR Site 11
Fact Sheet

1. Contamination:

Metals and polynuclear aromatic hydrocarbons (PAHs) from disposal and burning of bulk metals items.

2. Location:

Terminus of Caffee Road, from east of Building 1608 to the unnamed creek discharging to the Mattawoman Creek on the west side of the site.

3. From:

Disposal of building debris bulk metal items, open burning residues, and bulk metal items.

4. When:

Unknown.

5. Generated By:

Disposal and open burning 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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program.

b. In late 1980, NSWC removed approximately 5,000 to 6,000 cubic yards of deposited material. This material was primarily flashed metal parts and dunnage, which were removed by a private contractor for off-station disposal.

c. Initial remedial investigation (RI) fieldwork was completed in 2000. Surface soil, subsurface soil, sediment, surface water and groundwater samples were collected in the area of waste disposal and analyzed for target compound list (TCL) volatile and semivolatile organic compounds (VOCs and SVOCs) and target analyte list (TAL) metals.

d. Further historical information was obtained indicating the presence of four open burning pits on the eastern side of the area initially investigated. Additional RI sampling of surface and subsurface sols, sediment, surface water and groundwater for a TCL VOCs and SVOCs and TAL metals was conducted on the eastern side of the site in 2002.

e. The RI report is currently undergoing regulatory review. The final RI report is anticipated to be completed in late 2002, followed by the initiation of a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

Currently designated as a closed range.

TOWN GUT LANDFILL

(OLD MAP GRID K-22)
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 4 acres bisected by Atkins Road extension (northwest of Building 471).

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program.

b. A Confirmation Study, the NACIP equivalent of an IR site inspection 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 Confirmation Study recommended monitoring the site for 5 years to ensure that no contamination is migrating from the landfill.

c. The 5-year monitoring results did not show that any contamination is migrating from this area.

d. A remedial investigation report for Site 12 was completed in July 1999. The report determined that the human health risk for non-residential scenarios is within acceptable limits. The document identified a potential ecological risk in connection with surface soil contamination. The document recommended a feasibility study report to evaluate alternatives that would address the ecological risk, as well as the State of Maryland requirements for closing landfills.

e. A feasibility study was completed in January 2001. The study developed several potential remedial alternatives, including one requiring total landfill removal and others involving various capping scenarios combined with institutional controls.

f. A Proposed Plan was completed in January 2001. The preferred remedial alternative presented in the document provided for covering the landfill with a 2-foot-thick soil cover.

g. A public meeting was held on January 23, 2001 to present the Proposed Plan to the public.

h. Completion of the final design documents occurred in February 2002. Construction is expected to commence in September 2002.

i. The Record of Decision has been prepared in draft final form and, as of September 2002, it is the subject of regulatory agency and Navy discussion.

8. Current Status:

Awaiting start of Removal Action.

PAINT SOLVENTS DISPOSAL GROUND

(OLD 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:

Up to 20,000 pounds of waste.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 13.

b. Fieldwork for a remedial investigation (RI) was completed in 2000. Surface and subsurface soil samples were collected and analyzed for target compound list volatile and semivolatile organic compounds and target analyte list metals.

c. The RI report is currently undergoing Navy and regulatory review. The completion of the RI report is scheduled for late 2002.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

WASTE ACID DISPOSAL PIT

(OLD MAP GRID L33)
IR Site 14
Fact Sheet

1. Contamination:

Waste acids and other chemicals.

2. Location:

15- to 20-foot-deep disposal pit located 50 feet northeast of the Solvent Storehouse (Building 881) and 75 feet northwest of the Test Paper Manufacturing building (Building 444).

3. From:

Dumping of waste acids and other chemicals.

4. When:

Until 1975.

5. Generated By:

Waste acids and other chemicals were collected from these and other buildings.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 14.

8. Current Status:

Awaiting Initiation of Site Screening Process.

MERCURY DEPOSITS IN MANHOLE, FLUORINE LAB

(OLD MAP GRID L34)
IR Site 15
Fact Sheet

1. Contamination:

Mercury, lead, and oil/grease.

2. Location:

Manhole located 100 feet from Building 502.

3. From:

Disposal of laboratory wastewater into storm sewer.

4. When:

1942 to 1981.

5. Generated By:

Wastewater from laboratory activities in Buildings 502 and 103.

6. Amount:

Up to 1 pound of mercury and 64 pounds of lead.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 15.

b. This site is included in the "Lab Area" grouping of sites. Remedial investigation (RI) fieldwork was completed at the Lab Area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semivolatile organic compounds, and an expanded list of explosives.

c. The RI report is currently undergoing Navy and regulatory review. The final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

LABORATORY CHEMICAL DISPOSAL

(OLD MAP GRID K34)
IR Site 16
Fact Sheet

1. Contamination:

Acids, amines (RNH_3), cyanide compounds, metals, and chlorinated and nonchlorinated solvents.

2. Location:

Wastewater collection system within the Research and Development Building (Building 600).

3. From:

Disposal of laboratory chemicals into wastewater system.

4. When:

1944 to present.

5. Generated By:

Wastewater from laboratory activities in Building 600.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 16.

b. This site is included in the "Lab Area" grouping of sites. An RI field investigation was completed at the Lab Area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semivolatile organic compounds, and an expanded list of explosives.

c. The RI report is currently undergoing Navy and regulatory review. The final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

DISPOSED METAL PARTS ALONG SHORELINE

(OLD MAP GRID M 6, 7, 8 and L 5)
IR Site 17
Fact Sheet

1. Contamination:

Rocket motor casings, shipping containers, empty drums, solvents, and various metal parts.

2. Location:

A 1,000-foot stretch of shoreline east of the Decontamination Burning Point, along Mattawoman Creek and extending back approximately 100 feet from the shoreline in the wooded area near Building 1569.

3. From:

Disposal of metal parts and drums in the adjacent wooded area.

4. When:

From 1960 to about 1980.

5. Generated By:

Disposal of metal parts and drums in the adjacent wooded area.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 17.

b. Initial remedial investigation (RI) fieldwork was completed in 2000. Surface soil, subsurface soil, sediment, surface water and groundwater samples were collected in the metal parts and drum disposal areas and analyzed for target compound list (TCL) volatile and semivolatile organic compounds (VOCs and SVOCs) target analyte list metals, and an expanded list of explosives.

c. Additional pre-feasibility study field investigation was conducted in 2002. Groundwater and surface water samples were collected and analyzed for TCL VOCs.

d. The RI report is currently undergoing regulatory review. The final RI report is anticipated to be completed in late 2002, followed by the initiation of a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

HOG ISLAND

(OLD MAP GRID M20)
IR Site 18
Fact Sheet

1. Contamination:

Grit and sludge.

2. Location:

1.8-acre site situated 600 feet southwest of Building 474, near Atkins Road.

3. From:

Depositing grit/sludge in the marshy area near Hog Island.

4. When:

Unknown.

5. Generated By:

Sewage treatment plant grit chambers, primary tanks, or sludge drying beds.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 18.

8. Current Status:

Awaiting Initiation of Site Screening Process.

CATCH BASINS AT CHIP COLLECTION HOUSES

(OLD MAP GRID M26 AND M28)
IR Site 19
Fact Sheet

1. Contamination:

Wastewater contaminated with lead and copper salts.

2. Location:

Catch basins of the Chip Collection Houses (Buildings 1051 and 785).

3. From:

Wastewater contaminated with lead and copper salts.

4. When:

Unknown.

5. Generated By:

Wastewater generated from the Chip Collection Houses (Building 1051 and 785).

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 19.

8. Current Status:

Awaiting Initiation of Site Screening Process.

SINGLE-BASE POWDER FACILITIES

(OLD MAP GRID M35 TO N33)
IR Site 20
Fact Sheet

1. Contamination:

Suspected PCBs.

2. Location:

Single-base Powder Facilities.

3. From:

Leaks from PCBs from transformer switches.

4. When:

Circa 1940s.

5. Generated By:

PCBs from transformer switches.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 20.

8. Current Status:

Awaiting Initiation of Site Screening Process.

BRONSON ROAD LANDFILL

(OLD MAP GRID N21 AND O21)
IR Site 21
Fact Sheet

1. Contamination:

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

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:

Up to 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:

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 21.

b. Initial remedial investigation (RI) fieldwork was completed in 2000. Surface soil and groundwater samples were collected and analyzed for target compound list (TCL) volatile and semivolatile organic compounds (VOCs and SVOCs), target analyte list (TAL) metals, and an expanded list of explosives.

c. An additional pre-feasibility study field investigation was conducted in 2002. Groundwater samples were collected and analyzed for TCL VOCs, TAL metals, and explosives.

d. The RI report is currently undergoing regulatory review. The final RI report is anticipated to be completed in late 2002, followed by the initiation of a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

NG SLUMS BURNING SITE

(OLD MAP GRID O12)
IR Site 22
Fact Sheet

1. Contamination:

Nitroglycerin slums.

2. Location:

50-foot-wide strip along the shoreline of the Greenslade Road Peninsula and Mattawoman Creek.

3. From:

Spills of nitroglycerin slums during burning.

4. When:

Late 1940s until 1953.

5. Generated By:

Nitroglycerin slums from nitroglycerin plant production.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 22.

8. Current Status:

Awaiting Initiation of Site Screening Process.
Currently designated as a closed range.

HYDRAULIC OIL DISCHARGES FROM EXTRUSION PLANT

(OLD MAP GRID P24)
IR Site 23
Fact Sheet

1. Contamination:

Hydraulic oil.

2. Location:

Press lines (Buildings 561 and 564).

3. From:

Discharge of wastewater containing hydraulic oil.

4. When:

1943 until 1981.

5. Generated By:

Wastewater used to cool pumps and press dies.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 23.

8. Current Status:

Awaiting Initiation of Site Screening Process.

ABANDONED DRAIN LINES

(OLD MAP GRID O35, 37, 38)
IR Site 24
Fact Sheet

1. Contamination:

Acid water and nitrocellulose white water.

2. Location:

Abandoned nitrocellulose production facilities.

3. From:

Discharge of neutralized acid water and white water to Mattawoman Creek.

4. When:

Unknown.

5. Generated By:

Cotton liners, nitric acid, and sulfuric acid were used to produce the nitrocellulose.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 24.

8. Current Status:

Awaiting Initiation of Site Screening Process.

HYPO DISCHARGES FROM X-RAY BUILDING NO. 2

(OLD 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 to develop X-Ray film. Some of the silver, which is on the film, becomes "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 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 (IR) Program and the IAS is equivalent to the Preliminary Assessment 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.

b. Initial remedial investigation (RI) fieldwork was completed in 2000. Surface soil, shallow subsurface soil, and groundwater samples were collected and analyzed for target compound list (TCL) volatile and semivolatile organic compounds (VOCs and SVOCs), target analyte list (TAL) metals, and nitroglycerin.

c. Additional RI sampling was conducted in 2002. Groundwater samples were collected and analyzed for TAL metals.

d. The RI report is currently undergoing regulatory review. The final RI report is anticipated to be completed in late 2002.

8. CURRENT STATUS:

Continuation of the remedial investigation/feasibility study phase.

THERMAL DESTRUCTOR 2

(OLD MAP GRID P30)
IR Site 26
Fact Sheet

1. Contamination:

Hydrazine fuel and unsymmetrical dimethyl hydrazine-contaminated water.

2. Location:

Thermal Destructor 2 facility (Building 1595).

3. From:

Spills of hydrazine and UDMH-contaminated water at the incinerator.

4. When:

1976 until 1978.

5. Generated By:

Unknown.

6. Amount:

2.6 million pounds.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 26.

8. Current Status:

Awaiting initiation of Site Screening Process.

THERMAL DESTRUCTOR 1

(OLD MAP GRID S32)
IR Site 27
Fact Sheet

1. Contamination:

Hydrazine fuel and UDMH-contaminated water.

2. Location:

Thermal Destructor 1 facility (Building 1584).

3. From:

Spills of hydrazine and UDMH-contaminated water at the incinerator.

4. When:

1976 until 1979.

5. Generated By:

Unknown.

6. Amount:

3.9 million pounds.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 27.

8. Current Status:

Awaiting Initiation of Site Screening Process.

ORIGINAL BURNING GROUND

(OLD MAP GRID S36, 37)
IR Site 28
Fact Sheet

1. Contamination:

Smokeless powder and zinc.

2. Location:

1.8-acre site on southeastern corner of base along Mattawoman Creek.

3. From:

Open burning of materials and operation of a zinc recovery furnace.

4. When:

Burning estimated between 1890 and 1942; zinc recovery estimated between 1928 and the mid-1950s.

5. Generated By:

Burning of waste materials from base manufacturing, and residual contamination from the zinc recovery process.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 28.

b. Soil samples were collected at the site in 1993 and analyzed for soil texture, pH, and fertility. Elevated levels of zinc were detected.

c. During two different events in 2000, soil was analyzed for total lead and zinc and for total metals. Also in 2000, the pore water of sediment samples collected immediately offshore of Site 28 as part of the Toxicity Identification Evaluation study related to Site 42 was analyzed for metals.

d. Remedial investigation (RI) fieldwork will be completed in early 2003.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

Currently designated as a closed range.

THE VALLEY

(OLD MAP GRID A37, B37, C37)
IR Site 29
Fact Sheet

1. Contamination:

Exploded ordnance.

2. Location:

Naturally occurring valley along Torrence Road for ½ mile beginning at the Potomac River, northwest of Building 54.

3. From:

Firing of shells into butts in the valley walls.

4. When:

From 1891 to 1921.

5. Generated By:

Firing of shells into butts in the valley walls.

6. Amount:

Unknown.

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 (IR) Program and the IAS is equivalent to the Preliminary Assessment portion of the IR Program. The IAS recommended that a Confirmation Study not be performed for Site 29.

8. Current Status:

Awaiting Initiation of Site Screening Process.
Currently designated as a closed range.

SILVER RELEASE TO SEDIMENTS

(OLD MAP GRID P29)
IR Site 39
Fact Sheet

1. Contamination:

Elemental silver and possibly silver nitrate, dinitropropanol, ethylene dichloride, methyl chloride, formaldehyde, unsymmetrical dimethylhydrazine (UDMH), and nitroquanidine (NQ).

2. Location:

Area surrounding Building 497.

3. From:

Production of bis-2,2-dinitropropyl acetal/formal and explosives.

4. When:

Releases to Mattawoman Creek 1961 to 1965; stack emissions 1942 to 1994.

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 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. Additional releases may have occurred from the stacks on Buildings 497 and 498. Emissions from these stacks may have contaminated surface sols in the surrounding areas, however the quantity of contaminants that may have been discharged is unknown.

6. Amount:

Unknown.

7. Work Completed:

a. A site inspection 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, unsymmetrical dimethyl hydrazine, high bulk density nitroquanidine, and Target Compound List volatile organic compounds and semi-volatile organic compounds. Subsequent investigation of the sediments near IW05 is being conducted under the ongoing Mattawoman Creek study.

b. Because the site inspection did not address potential stack emissions, a remedial investigation (RI) is underway at Site 39. RI fieldwork was completed in 2001. Surface and shallow subsurface soil samples were collected and analyzed for semivolatile organic compounds (SVOCs), target analyte list metals, and an expanded list of explosives.

c. The RI report is currently undergoing Navy and regulatory review. The final RI report is anticipated to be completed by early 2003.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

PALLADIUM CATALYST IN SEDIMENT

(OLD MAP GRID P29)
IR Site 40
Fact Sheet

1. Contamination:

Palladium.

2. Location:

Mattawoman Creek southeast of Building 497.

3. From:

Production of Unsymmetrical-Dimethylhydrazine (UDMH).

4. When:

1974 and 1975.

5. Generated By:

Release of palladium, a catalyst used in the production of UDMH. Forty percent of the catalyst purchased by the NAVORDSTA was lost and cannot be accounted for. Therefore, it is possible that this catalyst entered Mattawoman Creek.

6. Amount:

Based on the 40% estimated loss of the total palladium purchased, the total amount of palladium that may have entered the creek is 88 pounds.

7. Work Completed:

A preliminary assessment was performed but a site inspection (SI) was not recommended under the Navy Installation Restoration Program because palladium is not a regulated hazardous substance. However, a SI was performed to ensure that a problem does not exist. This inspection included taking four ponar grab samples from the top sediment of Mattawoman Creek and two sediment samples in the Creek near the wastewater outfall, which is no longer in use. These samples were analyzed for palladium.

8. Current Status:

Further study at this site was not recommended in the SI. However, this site will continue to the Remedial Investigation/Feasibility Study phase.

SCRAP YARD

(OLD MAP GRID R31, S31)
IR Site 41
Fact Sheet

1. Contamination:

Arsenic, iron, lead, and polychlorinated biphenyls (PCBs).

2. Location:

Scrap yard west of 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, and PCB-contaminated transformers contain oil within 50 to 500 ppm PCBs.

4. When:

From the 1960s 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 northwestern end of the Scrap Yard near Mattawoman Creek.

6. Amount:

Unknown.

7. Work Completed:

a. 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:

1) Obtaining eight samples for soil-gas analysis of volatile organic compounds from eight locations.

2) Collecting 15 soil samples, three samples per boring at approximately 5-foot intervals, from five soil borings and analyzing for target compound lists (TCLs), target analyte lists (TALs), and total petroleum hydrocarbons (TPHs).

3) Installing three monitoring wells and obtaining six groundwater samples, two from each well for TCLs, TALs, and TPHs.

4) Obtaining nine soil samples, three per boring at approximately 5-foot intervals, during the installation of monitoring wells. These samples were analyzed for TCLs, TALs, and TPHs.

5) Taking 11 sediment samples from Mattawoman Creek and analyzing for TCLs, TALs, and TPHs.

b. A remedial investigation report for Site 41 was completed in July 1999. The report determined that the human health risk for non-residential scenarios is within acceptable limits, with the exception of the full-time worker. The document identified a potential ecological risk in connection with surface soil contamination. The document recommended a feasibility study report to evaluate alternatives to address the full-time worker and ecological risks.

c. A feasibility study was completed in January 2001. The study developed a potential remedial alternative requiring removal of contaminated soil from areas adjacent to the Scrap Yard, the removal of contaminated soil from within the Scrap Yard, and the remediation of contamination on the concrete slab within the Scrap Yard, all in combination with institutional controls.

d. A proposed plan was completed in February 2001. The preferred remedial alternative presented in the document provided for the removal of contaminated soil from areas adjacent to the Scrap Yard, the removal of contaminated soil from within the Scrap Yard, and the remediation of contamination on the concrete slab within the Scrap Yard, all in combination with institutional controls.

e. A public meeting was held on February 20, 2001 to present the Proposed Plan to the public.

f. Completion of the final design documents is expected in 2002. Construction is expected to commence in 2002.

g. The Record of Decision has been prepared in final form and, as of September 2002, it is the subject of regulatory agency and Navy discussion.

h. The final Remedial Action Design was completed in August 2002.

8. Current Status:

Awaiting start of Removal Action.

OLSON ROAD LANDFILL

(OLD MAP GRID G5, G6)
IR Site 42
Fact Sheet

1. Contamination

Unknown.

2. Location:

Near Building 1866.

3. From:

Disposal of various solid wastes from all over the 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. A Site Inspection was performed under the Navy Installation Restoration Program, as recommended in the Preliminary Assessment, as described below:

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

2) 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.

3) Approximately 75 soil samples were collected at various depths from 24 soil borings and analyzed for volatile organic compounds (VOCs), target compound list (TCLs), target analyte list (TALs), and total petroleum hydrocarbons (TPHs).

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

5) 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.

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

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

b. A remedial investigation report for Site 42 was completed in July 1999. The report determined that the human health risk for non-residential scenarios is within acceptable limits. The potential for ecological risks was identified in connection with a small creek running along the downgradient, southwestern edge of the site. An additional issue focused on the need to close the landfill in accordance with state of Maryland regulations.

c. In December 1999, a toxicity study of the sediments in the above-described creek was completed. Sediment contaminants detected during the remedial investigation were found to not exhibit toxicity.

d. A feasibility study was completed in June 2002. The study developed several potential remedial alternatives, including one requiring total landfill removal and others involving various capping scenarios combined with institutional controls.

e. The 65% Remedial Action Design was completed in May 2002.

8. Current Status:

Continuing with the Remedial Investigation/Feasibility Study phase.

TOLUENE DISPOSAL

(OLD MAP GRID D8)
IR Site 43
Fact Sheet

1. Contamination:

Acetone and toluene.

2. Location:

Near utility pole across the street from Building 1041.

3. From:

Disposal of acetone and toluene used for propellant removal.

4. When:

Parts cleaning operations took place from the late 1950s through November 1989. It is estimated that, for a period of approximately two years during the operation, spent solvent was improperly disposed at the base of the pole.

5. Generated By:

After parts were cleaned within Building 1041, the spent solvent was normally combined or "slummed" with sawdust in a 55-gallon drum for treatment at the Strauss Avenue Thermal Treatment Point. Occasionally, however, the spent solvent was carried across the street to the utility pole and poured on the ground at the base of the pole.

6. Amount:

One report estimated that 15 to 20 gallons per week of spent solvent were disposed at the base of the pole. It was not possible to determine the amount of solvent disposed at this site.

7. Work Completed:

a. A Preliminary Assessment was performed and a Site Inspection (SI) was recommended under the Navy Installation Restoration (IR) Program to determine if contamination is actually present.

b. A Site Inspection under the Navy Installation Restoration Program was conducted. This inspection included obtaining 10 soil-gas samples from 10 borings and analyzing for VOCs. In addition, four soil samples were taken using a hand auger at a depth not greater than three feet for analysis of volatile organic compounds (VOCs), base-neutral acids (BNAs), and total petroleum hydrocarbons (TPHs).

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.

SOAK OUT AREA

(OLD MAP GRID F18)
IR Site 44
Fact Sheet

1. Contamination:

An unknown nonflammable solvent, believed to be Pennchem 9018, 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 1960s to early 1970s.

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 fell out of the tubes. Reports indicated that the solvent drums (less than 10 55-gallon) were taken into the woods for storage until a disposal method was found. These drums could not be located.

6. Amount:

Unknown.

7. Work Completed:

a. 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

1) Obtaining 15 soil samples from 15 borings for soil gas analysis of volatile organic compounds (VOCs).

2) Taking nine soil boring samples, three samples per boring at approximately 5 foot intervals, from three soil borings.

3) Installing two monitoring wells and obtaining four groundwater samples, two from each well. These samples were analyzed for VOCs, base-neutral acids (BNAs), and total petroleum hydrocarbons (TPHs).

4) 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.

5) Taking two soil boring samples using a hand auger to a depth of 1 foot and analyzing for VOCs, BNAs, and TPHs.

b. A remedial investigation report for Site 44 was completed in July 1999. The report determined that the human health risk for all receptors is within acceptable levels. Ecological risks were not evaluated since it had previously been determined that the site did not offer any suitable habitat.

c. A Proposed Plan was completed in February 2001. The plan presented a no further action approach to the site.

d. A public meeting was held on February 20, 2001 to present the Proposed Plan to the public.

e. The Record of Decision has been prepared in final form and, as of September 2002, it is the subject of regulatory agency and Navy discussion.

8. Current Status:

Continuing with the finalization of the Record of Decision for Site 44.

ABANDONED DRUMS

(OLD MAP GRID E18)
IR Site 45
Fact Sheet

1. Contamination:

Unknown.

2. Location:

250 feet west of Building 1363.

3. From:

Unknown.

4. When:

Estimated 15 to 20 years ago.

5. Generated By:

Unknown. Possibly the same solvent that was used in the Soak Out Area.

6. Amount:

Assuming the 21 55-gallon drums and two overpack drums were full, a total of 1295 gallons of solvent would have leaked onto the ground.

7. Work Completed:

a. A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. Three soil samples were taken from three soil borings with a hand auger. The borings were obtained at a depth not greater than three feet. These samples were analyzed for volatile organic compounds (VOCs), base-neutral acids (BNAs), and target analyte list (TAL) metals. In addition, four soil-gas samples were taken and analyzed for VOCs.

b. Remedial investigation (RI) fieldwork was completed in 2001. Surface soil, subsurface soil, shallow groundwater and sediment samples were collected and analyzed for target compound list volatile and semivolatile organic compounds, target analyte list metals and an expanded list of explosives.

c. The RI report is currently undergoing Navy and regulatory review. The final RI is anticipated to be completed by early 2003.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

CADMIUM SANDBLAST GRIT

(OLD MAP GRID E20)
IR Site 46
Fact Sheet

1. Contamination:

Cadmium.

2. Location:

Gravel area behind Building 855.

3. From:

Sandblast grit disposal.

4. When:

Mid 1960s to possibly early 1980s.

5. Generated By:

Rocket catapult tubes plated with cadmium were sandblasted at Building 855 as part of a resurfacing operation. Often, the cadmium-contaminated grit was dumped in the gravel area behind Building 855.

6. Amount:

Estimates as to the amount, frequency, and time period over which the grit was disposed near the building could not be confirmed.

7. Work Completed:

a. A Preliminary Assessment was performed and a Site Inspection (SI) was recommended under the Navy Installation Restoration (IR) Program to determine if contamination is actually present.

b. SI under the Navy IR Program was conducted. This inspection included taking nine soil samples using a hand auger and analyzing them for target analyte lists (TALs).

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.

MERCURIC NITRATE DISPOSAL AREA

(OLD MAP GRID F21)
IR Site 47
Fact Sheet

1. Contamination:

Mercuric nitrate, barium sludge, and solvents.

2. Location:

South of the concrete pad behind Building 856.

3. From:

Disposal of mercuric nitrate dissolved in nitric acid, disposal of barium sludge, and storage of solvents.

4. When:

Mercuric nitrate disposal from 1957 through 1965; barium sludge disposal between 1969 and 1974.

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. Additionally, a slurry of particulate barium sulfate used in the manufacturing process was pumped to a pit located approximately 50 feet to the east of Building 856.

6. Amount:

Assuming enough limestone was present to neutralize the nitric acid, up to 274 pounds of mercuric nitrate (equivalent to 169 pounds of elemental mercury) would have precipitated out as a salt. An estimated 2,000 pounds of barium sulfate may have been disposed of in the barium pit.

7. Work Completed:

a. A Preliminary Assessment was performed and a Site Inspection (SI) was recommended under the Navy Installation Restoration (IR) Program to determine if contamination is actually present.

b. An SI under the Navy IR 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 volatile organic compounds (VOCs), base-neutral organic acids (BNAs), and target analyte list (TAL) metals. 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 TAL metals. No limestone was found during the sampling.

c. Remedial investigation fieldwork has been conducted in several phases at Site 47. Groundwater, concrete chips, surface soil and sediment samples were collected and analyzed for target compound list (TCL) volatile and semivolatile organic compounds (VOCs and SVOCs), target analyte list (TAL) metals, and ;an expanded list of explosives during the initial field investigation in 1999. In 2001, membrane interface probe/electrical conductivity (MIP/EC) technology was used to further define the extent of VOC contamination, and six monitoring wells were installed and sampled for TCL VOCs. Further delineation of the VOC plume, as well as investigation of the reported barium sludge pit was completed in 2002.

d. The RI report is currently being prepared. The final RI report is anticipated to be completed by 2003, and will be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

NITROGLYCERIN PLANT DISPOSAL AREA

(OLD MAP GRID H20)
IR Site 48
Fact Sheet

1. Contamination:

Unknown.

2. Location:

On the hill behind Building 766.

3. From:

Unknown, possibly laboratory samples.

4. When:

Unknown.

5. Generated By:

Unknown. Bottles, metal scrap, solvent containers, and refuse, possibly generated at Building 766, are visible on the hill. Most containers appear to be old and empty.

6. Amount:

Unknown.

7. Work Completed:

A Preliminary Assessment was performed and a Site Inspection (SI) was recommended under the Navy Installation Restoration (IR) Program to determine if contamination is actually present.

a. Two soil samples were taken on the hillside where the bottles and scrap are located in 1991. The samples were analyzed for mercury to determine if this site could be a source of mercury at the Building 766 ditch. No mercury was detected in the samples.

b. SI under the Navy IR Program was conducted. This SI included obtaining nine soil samples from three borings, three per boring at approximately 5 foot intervals. These samples were analyzed for volatile organic compounds (VOCs), base-neutral acids (BNAs), and total petroleum hydrocarbons (TPHs).

8. Current Status:

Because three unknown BNA tentatively identified compounds (TICs), which may be naturally occurring, were detected, additional sampling was recommended in the SI. This site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

CHEMICAL DISPOSAL PIT

(OLD MAP GRID L33)
IR Site 49
Fact Sheet

1. Contamination:

Waste chemicals, solvents, mercury.

.

2. Location:

Northeast of Building 444.

3. From:

Lab operations.

4. When:

Limited use up to the early 1970s.

5. Generated By:

Bottles containing wastes were placed on a steel grate in the pit and the drop plate was dropped. The plate then crushed the bottles containing waste chemicals. The glass fell into a wire basket, and the contents of the bottles were allowed to soak into the bottom of the pit.

6. Amount:

Unknown.

7. Work Completed:

a. A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program. According to Navy personnel, the pit received little, if any, use. No visible signs of disposal can be seen, such as chemical stains or broken glass.

b. Five soil samples were taken at one soil boring and analyzed for volatile organic compounds (VOCs), base-neutral acids (BNAs), target analyte list (TALs), and nitrate esters. One soil sample from inside the pit was obtained and was analyzed for VOCs, BNAs, TALs, and nitrate esters.

c. This site is included in the "Lab Area" grouping of sites. An RI field investigation was completed at the Lab Area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semivolatile organic compounds, and an expanded list of explosives.

d. As part of the Lab Area investigation the chemical disposal pit was removed and disposed of offsite. Confirmatory samples were collected around and beneath the chemical disposal pit before the excavation was backfilled with clean imported fill.

e. The RI report is currently undergoing Navy and regulatory review. The final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

The chemical disposal pit has been removed and disposed of offsite, no further action is anticipated for this site, however the remedial investigation/feasibility study phase continues for the remainder of the Lab area.

BUILDING 103 CRAWL SPACE

(OLD MAP GRID L34)
IR Site 50
Fact Sheet

1. Contamination:

Elemental mercury and possibly other chemicals.

2. Location:

Crawl space of Building 103.

3. From:

Sinks in Building 103.

4. When:

From 1902 to 1985. During construction in 1985, it was discovered that the sinks did not drain to either the sanitary or storm sewer system. Instead, the sinks discharged directly to the soil under Building 103.

5. Generated By:

Laboratory equipment containing mercury was used in Building 103 at various times. During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from the transfer of mercury to the "slop jar" were common. Jars of mercury often broke during rinsing in the sink. Other chemicals were also placed in the sinks. A visual inspection of the crawl space revealed possible asbestos insulation covering the pipes. The insulation appeared to be in good condition.

6. Amount:

Unknown.

7. Work Completed:

a. The sinks were re-routed to the sanitary sewer system. In addition, chemicals are no longer put down the sink.

b. 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 taking soil boring samples from the crawl space under Building 103 and analyzing for volatile organic compounds (VOCs), base-neutral acids (BNAs), target analyte list (TAL) metals, and nitrate esters.

c. This site is included in the "Lab Area" grouping of sites. An RI field investigation was completed at the Lab Area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semi-volatile organic compounds, and an expanded list of explosives.

d. The RI report is currently undergoing Navy and regulatory review. The final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

BUILDING 101 DRY WELL

(OLD MAP GRID L34)
IR Site 51
Fact Sheet

1. Contamination:

None.

2. Location:

Dry well by Building 101.

3. From:

N/A.

4. When:

N/A.

5. Generated By:

Initially, it was believed that a laboratory waste stream was separated for disposal purposes. The volatile component was evaporated in a flash tank while the remaining liquid wastes were discharged into a dry well. However, inspection of Department of the Navy, Bureau of Yards and Docks drawings revealed that the flash tank did not discharge to the dry well.

6. Amount:

None.

7. Work Completed:

a. A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program.

b. This site was subjected to a site screening assessment (SSA) during 2002. The field investigation included a geophysical survey and the collection of subsurface soil samples for analysis of Target Compound List (TCL) volatile organic compounds.

c. The draft SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Continuation of the Site Screening Process.

BUILDING 102 DRY WELL

(OLD MAP GRID L34)
IR Site 52
Fact Sheet

1. Contamination:

None.

2. Location:

Dry well by Building 102.

3. From:

N/A.

4. When:

N/A.

5. Generated By:

Initially, it was believed that a laboratory waste stream was separated for disposal purposes. The volatile component was evaporated in a flash tank while the remaining liquid wastes were discharged into a dry well. However, inspection of Department of the Navy, Bureau of Yards and Docks drawings revealed that the flash tank did not discharge to the dry well.

6. Amount:

None.

7. Work Completed:

a. A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program.

b. This site was subjected to a site screening assessment (SSA) during 2002. A visual of the physical conditions at the site as well as available drawings of the site did not indicate the presence of a dry well in the area separate from the Site 51 dry well (which is located nearby). No further investigation of the Site 51 was conducted.

c. The draft SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Continuation of the Site Screening Process.

MERCURY CONTAMINATION OF THE SEWAGE SYSTEM

(OLD MAP GRID L34)
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 contained mercury, such as nitrometers, was 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. Ten pounds of mercury discharged in the storm sewer manhole in 1969 were recovered.

b. 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.

d. A Site Inspection was conducted under the Navy Installation Restoration Program 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 volatile organic compounds (VOCs), base-neutral acids (BNAs), target analyte list (TAL), and total petroleum hydrocarbon (TPH).

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

e. 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, that 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.

f. This site is included in the "Lab Area" grouping of sites. An RI field investigation was completed at the Lab area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semi-volatile organic compounds, and an expanded list of explosives.

g. The RI report is currently undergoing Navy and regulatory review. The final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

BUILDING 101

(OLD MAP GRID L34)
IR Site 54
Fact Sheet

1. Contamination:

Mercury and asbestos.

2. Location:

Basement of Building 101.

3. From:

Use of laboratory equipment that contained mercury and possibly leaking pipes.

4. When:

From building construction in 1909 to mid-1980s.

5. Generated By:

In January 1990, several droplets of mercury were discovered on the insulation of a steam pipe located in the southeastern corner room of the basement in Building 101. In addition, in the mid-1980s, an employee noticed solvent odors in the basement when solvent was flushed down the sink in the room above, indicating a leaky pipe.

Laboratory equipment that contained mercury was used in the room above the basement where mercury was discovered. A 1918 blueprint shows four nitrometers located in this room. During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills were common from transferring mercury to the "slop jar". Jars of mercury often broke during rinsing in the sink.

6. Amount:

Unknown.

7. Work Completed:

a. A Site Inspection was conducted under the Navy Installation Restoration Program as recommended in the Preliminary Assessment, to determine the extent of contamination. This inspection included:

1) Taking five wipe samples within the building and analyzing for mercury.

2) Taking five media samples from within the building and analyzing for mercury.

3) Obtaining five soil boring samples from beneath the building and analyzing for mercury and nitrate esters.

b. This site is included in the "Lab area" grouping of sites. An RI field investigation was completed at the Lab Area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semi-volatile organic compounds, and an expanded list of explosives.

c. The RI report is currently undergoing Navy and regulatory review. the final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

BUILDING 102

(OLD MAP GRID L34)
IR Site 55
Fact Sheet

1. Contamination:

Mercury and asbestos.

2. Location:

Building 102.

3. From:

Use of laboratory equipment that contained mercury.

4. When:

From building construction in 1909 to 1963 when renovations to the building were made.

5. Generated By:

On October 6, 1987, metallic mercury was discovered dripping from the ceiling onto the sink table top of the coffee mess, located in the northern end of the basement of Building 102. Review of Department of the Navy, Bureau of Yards and Docks drawings indicates that a nitrometer was once located in the room directly above the area were the metallic mercury was discovered.

While installing mercury traps in the sinks of Building 102 in 1986, the plumber reported approximately a teaspoon of mercury in each of the U-joints.

During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from transferring mercury to the "slop jar" were common. Jars of mercury often broke during rinsing in the sink.

6. Amount:

Unknown.

7. Work Completed:

a. During building renovations in 1963, the nitrometer operation was moved to the southern room on the first floor of Building 102, and the floor was sealed with a 2-inch layer of concrete.

b. In the mid 1970s, the nitrometer was moved to the southern room in the basement of Building 102 and, in the early 1980s, the floor drains were sealed to prevent mercury release in case of a spill.

c. Cleanup of the mercury began after the mercury was found dripping from the ceiling but promptly ceased after asbestos was discovered.

d. Plastic sheeting was placed under the ceiling to encapsulate the leaking mercury, and the northern end of the building was closed to protect the health of the employees.

e. In February 1989, the building was abandoned. In June 1991, the water supply to the building was disconnected to eliminate the potential for mercury contamination of the sludge generated from sewage treatment.

f. A Site Inspection was conducted under the Navy Installation Restoration Program. This inspection included:

1) Taking five wipe samples within the building and analyzing for mercury.

2) Taking five media samples from within the building and analyzing for mercury.

3) Obtaining five soil boring samples from beneath the building and analyzing for mercury and nitrate esters.

g. This site is included in the "Lab Area" grouping of sites. An RI field investigation was completed at the Lab Area in 2001. Surface and shallow subsurface soil, sediment and surface water samples were collected in the Lab Area and analyzed for target analyte list metals, target compound list volatile and semi-volatile organic compounds, and an expanded list of explosives.

h. The RI report is currently undergoing Navy and regulatory review. The final RI report for the Lab Area is expected to be completed in early 2003, and is expected to be followed by a feasibility study.

8. Current Status:

Continuation of the Remedial Investigation/Feasibility Study phase.

LEAD CONTAMINATION AT INDUSTRIAL WASTEWATER OUTFALL (IW) 87

(OLD MAP GRID H19)
IR Site 56
Fact Sheet

1. Contamination:

Lead.

2. Location:

Pit, pipe, and sediment leading to IW87 from Building 790

.

3. From:

Washdown of ;lead-lined floor.

4. When:

1953 to October 1992.

5. Generated By:

Building 790 contains a tank of nitric acid and a tank of sulfuric acid. The fumes from these acids get on the walls and floor inside the building, requiring a periodic washdown of the walls and floor. The fumes from the strong acids dissolved the lead from the flooring, and the washdown provided a route for the dissolved lead to discharge from the building to IW87.

6. Amount:

Unknown.

7. Work Completed:

An Engineering Evaluation/Cost Analysis (EE/CA) was prepared to determine the best method for cleaning this lead from the pit, pipe, and sediment.

A removal action conducted in late 1996 included removal and cleaning of the pipe leading to IW87, excavation of the outfall area, treatment of contaminated water on the site, and relining of the pipe.

8. Current Status:

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

TRICHLOROETHYLENE

(OLD MAP GRID P33)
IR Site 57
Fact Sheet

1. Contamination:

Trichloroethylene (TCE).

2. Location:

Building 292.

3. From:

Possible discharges and spills from drainage of the vapor degreasing tank.

4. When:

1964 to 1989.

5. Generated By:

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

b. A Draft Engineering Evaluation/Cost Analysis (EE/CA) was completed in October 1996. Before the EE/CA was completed, 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.

c. In 1998, the Navy completed a Removal Action at Site 57 to address infiltration of TCE-contaminated groundwater into a storm sewer leading to outfall IW-80. Approximately 700 feet of storm sewer were lined to inhibit the accelerated migration of TCE.

d. The Navy completed a remedial investigation at Site 57 in July 2000.

e. During August 2001, a field investigation was conducted at Site 57 to collect field data to aid in the evaluation of remedial alternatives during the preparation of an FS.

f. As of September 2002, preparation of the FS was ongoing.

8. Current Status:

Development of the Feasibility Study.

UNDERGROUND STORAGE TANKS AT TRANSPORTATION DEPARTMENT

(OLD MAP GRID E37)
IR AOC
(Main Area SWMUs 4 and 5)
Fact Sheet

1. Contamination:

Waste oil from equipment maintenance.

2. Location:

These units consist of one 550-gallon underground storage tank (UST) (SWMU 4) behind the automotive shop (Building 290) and a second 1,000-gallon UST (SWMU 5) behind the heavy equipment shop (Building 525).

3. From:

Waste oil from equipment maintenance is placed in a basin, which is approximately 36 inches by 18 inches by 12 inches deep, inside the shops. The waste oil drains through a pipe to the USTs. A contractor pumps the waste oil from the tanks to a truck for off-site disposal.

4. When:

Facility personnel indicated that the units have been in operation since 1978.

5. Generated By:

The wastes managed at this unit include waste oils from the transportation equipment maintenance branch.

6. Amount:

One 550-gallon underground storage tank (SWMU 4) and a second 1,000-gallon UST (SWMU 5)

7. Work Completed:

a. During the visual site inspection(VSI), stained soil was observed in the vicinity of the stand pipe from the UST behind Building 55 (SWMU 5). No evidence of release was observed in the vicinity of SWMU 4.

b. These units were part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with these units.

USED BATTERY ACCUMULATION AREA (BUILDING 290)

(OLD MAP GRID R27)
IR AOC
(Main Area SWMU 6)
Fact Sheet

1. Contamination:

Unit is used for storage of used batteries.

2. Location:

Automotive shop (Building 290).

3. From:

The Transportation Department automotive shop (Bldg. 290) uses an area outside the building for accumulation of used batteries. The batteries are stored on wooden pallets over a concrete driveway. The area is uncovered and measures approximately 6 feet wide by 10 feet long

4. When:

According to facility representatives, the date the area was first used for storage is not known. However, the area has been used for several years.

5. Generated By:

The Transportation Department automotive shop (Building 290) uses an area outside the building for accumulation of used batteries.

6. Amount:

Unknown

7. Work Completed:

a. Staining was observed on the concrete pad during the visual site inspection (VSI). However, no visible signs of release to soils were noted, and no releases were noted in available file information.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

WASTE OIL STORAGE AREA (GOODARD POWER PLANT)

(OLD MAP GRID N31)
IR AOC
(Main Area SWMU 27)
Fact Sheet

1. Contamination:

The area is approximately 150 feet long by 50 feet wide and includes metal drums of waste oil sitting on the soil surface. At the time of the visual site inspection (VSI), the unit contained 8 drums of waste oil from the oil/water separator, five empty drums labeled pelletized nitrocellulose, and a pile of oily soil that was approximately 12 feet by 10 feet by 3 feet high. The pile appeared to contain waste oil and absorbent collected from spills inside the power plant.

Remediation activities included the removal of the empty drums and the partial removal of the empty waste oil and absorbent. The remaining stained soil was drummed for off-site disposal.

2. Location:

Fuel storage area at Goddard Power Plant.

3. From:

Goddard Power Plant.

4. When:

Area had been used for storage of this type since the start-up of the power plant in 1957.

5. Generated By:

This unit is used for storage of waste oil collected from the power plant. The drums of waste oil are taken to the Caffee Road thermal treatment unit (SWMU 21) for burning or to Building 455 (SWMU 2) for off-site disposal.

6. Amount:

At the time of the VSI, the unit contained 8 drums of waste oil from the oil/water separator, five empty drums labeled pelletized nitrocellulose, and a pile of oily soil approximately 12 feet by 10 feet by 3 feet high.

7. Work Completed:

a. On the second day of the VSI, a pile of stained soil was observed in the area. During the fifth day of the VSI, the unit was revisited and it was observed that the waste pile had been partially removed and that an area of stained soil remained.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

CAFFEE ROAD WASTE OIL STORAGE AREA

(OLD MAP GRID L6)
IR AOC
(Main Area SWMU 38)
Fact Sheet

1. Contamination:

This unit is a storage area for drums of waste oil used at the Decontamination Burn Point (SWMU 21).

2. Location:

Decontamination Burn Point (SWMU 21).

3. From:

The oil is used to start and maintain the fire at the burn point. The fire is initiated to flash explosive residue from discarded metal parts generated on-Station.

4. When:

Oil has been stored at this location since approximately 1986.

5. Generated By:

The unit is used for storage of waste oil from vehicles and machinery in drums. The oil is used to start and maintain the fire at the Decontamination Burn Point.

6. Amount:

Unknown.

7. Work Completed:

a. There was no known history of release at the unit, and no signs of release were observed during the visual site inspection.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to a remedial investigation/feasibility study.

WASTEWATER COLLECTION TREATMENT TANKS (MOSER PLANT)

(OLD MAP GRID E17)
IR AOC
(Main Area SWMUs 40 through 46)
Fact Sheet

1. Contamination:

These seven units are used for the collection and treatment of wastewater generated from the production of nitrate esters (e.g., nitroglycerin, nitrocellulose, etc.) at the Moser Plant. The wastewater contains concentrations of slightly acidic explosive residue.

2. Location:

Moser Plant.

3. From:

The tanks are used to collect the wastewater, settle the explosive residue, and neutralize the acidity, if necessary.

4. When:

The units were installed and began operation in the mid-1970s.

5. Generated By:

The units are used for collection and treatment of wastewater containing explosive residue, which is slightly acidic. The settled explosive residue from the wastewaters is adsorbed onto wood chips and burned at the Cast Plant Burn Point (SWMU 19). The water is discharged to an NPDES outfall after settling.

6. Amount:
Unknown.

7. Work Completed:

a. The tanks observed during the visual site inspection included two 300-gallon tanks, one 1,000-gallon tank, and one 200-gallon tank. The tanks were all constructed of steel, were located indoors on concrete floors, and were each covered. Three additional tanks of the same design and construction are located in the process area.

b. These units were part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with these units.

SPENT ACID STORAGE TREATMENT TANKS (MOSER PLANT)

(OLD MAP GRID E17)
IR AOC
(Main Area SWMU 47 through 51)
Fact Sheet

1. Contamination:

These five units are used for the collection and treatment of spent acid generated during production of nitrated esters at the Moser Plant.

2. Location:

Moser Plant.

3. From:

The tanks include three spent acid tanks, including one 150-gallon and two 553-gallon tanks, one 200-gallon slum recovery tank, and one 6,000-gallon neutralization tank (divided into two compartments). The tanks are constructed of steel, are located indoors, and are covered. The level in the tanks is controlled by batch flow to the units.

4. When:

Tanks were installed and began operation in the mid-1970s.

5. Generated By:

The units are used for collection and treatment of spent acid from the production of nitrated esters. The wastewater from neutralization is discharged to an NPDES outfall. The NOS representative stated that no sludge was generated by the neutralization process.

6. Amount:

Unknown.

7. Work Completed:

a. There is no history of release from the units, and there were no visible signs of release during the visual site inspection.

b. These units were part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with these units.

WASTEWATER STORAGE TANKS (BLDG. 1596)

(OLD MAP GRID P30)
IR AOC
(Main Area SWMU 64 through 66)
Fact Sheet

1. Contamination:

The units were used for storage of water contaminated with hydrazine fuel.

2. Location:

Building 1596.

3. From:

The wastewater storage tank located in Building 1596 were used for storage of water contaminated with hydrazine fuel. The water was incinerated in Thermal Destructor 2 (SWMU 63). The tanks are located indoors over concrete flooring. They are constructed of polyurethane and are approximately 10,000-gallon each in capacity.

4. When:

The exact date of installation of the tanks is not certain; however, it is assumed the tanks were installed circa 1976 [i.e. the same time as construction of Thermal Destructor 2 (SWMU 63)].

5. Generated By:

The tanks are located indoors on a concrete floor and have been empty for a number of years. No details were available on the control of flow to the tanks.

6. Amount:

Unknown.

7. Work Completed:

a. There is no known history of release from the units, and no visible signs of release were observed during the visual site inspection.

b. These units were part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with these units.

TEMPORARY ACCUMULATION DUMPSTERS FOR EXPLOSIVE SCRAP

IR AOC
(Main Area SWMU 69)
Fact Sheet

1. Contamination:

The units are used for storage of explosive scrap from processes throughout the facility.

2. Location:

Throughout the Station.

3. From:

The Naval Ordnance Station uses metal dumpsters for collection of explosive scrap from manufacturing and associated operations throughout the Station.

4. When:

The practice of storing explosive scrap in dumpsters was used at the Station from the late 1950s and until 1992.

5. Generated By:

The dumpsters are color coded (blue or yellow) for use only as storage for explosive scrap. They are constructed of metal, measure approximately 5 feet long by 4 feet wide by 4 feet deep, and are typically located over concrete or asphalt. The explosive scrap contained in a water bath is in the dumpster. Water must be present in the dumpsters for safety reasons: dry propellant scrap is an explosive hazard. When filled, the dumpster is transported to the burn point (SWMU 19); the water is filtered and discharged through an NPDES outfall and the explosive scrap is burned at the burn point.

The dumpsters are filled to fill-lines marked on the dumpster. The fill-line leaves ample freeboard to prevent overflow or spilling from the dumpster.

6. Amount:

50 to 60 dumpsters

7. Work Completed:

There is no known history of release from the dumpsters. Visual inspection of several units during the visual site inspection found no a signs of release. All inspected units were found to be in good condition.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

TEMPORARY ACCUMULATION BUILDINGS FOR DRUMMED EXPLOSIVE SCRAP
IR AOC

(Main Area SWMU 70)
Fact Sheet

1. Contamination:

The units are used for temporary storage of explosive scrap generated at process areas throughout the facility.

2. Location:

The storage locations are wooden sheds, all of similar design, constructed over concrete pads. The sheds are covered and typically measure approximately 6 feet by 6 feet.

3. From:

The Naval Ordnance Station has 51 storage buildings for accumulation of explosive scrap in metal cans. The metal cans (commonly called G.I. cans) are about 30 gallons in size and are color coded blue or yellow for use only as storage for explosive scrap.

4. When:

There are 51 temporary accumulation areas that have been constructed at various times during the facility operation.

5. Generated By:

Explosive scrap is typically adsorbed (i.e., liquid) onto wood chips and collected in non-conductive rubber bags, placed in the metal cans, and stored in the accumulation area. Cans were removed daily to the burn point (SWMU 19) for safety reasons.

The explosive scrap is collected in non-conductive rubber bags, placed in the metal cans, and stored in the building. The buildings have concrete floors but no curbs.

6. Amount:

Unknown.

7. Work Completed:

a. There is no known history of release from the units, and the visual inspection found no signs of release.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

OIL/WATER SEPARATORS

IR AOC
(Main Area SWMU 72)
Fact Sheet

1. Contamination:

Several wastewater discharge lines at the Naval Ordnance Station include an oil/water separator for removal of floating oil from the wastewater prior to discharge through an NPDES AutoFill.

2. Location:

Various process areas on-Station.

3. From:

The unit separates floating oil from wastewater generated by various process areas on-Station. Waste oil is collected at the units and either used on site or disposed offsite. The units are typically constructed of concrete and are generally covered with a metal-lid. Many of the units overflow to NPDES discharge points.

4. When:

It is assumed that the separators were typically constructed at the time of building construction

5. Generated By:

The waste oil is either used on site (e.g., such as the waste oil used for starting fires at the Decontamination Burn Point or disposed off-site.

6. **Amount**:

The Industrial Wastewater Treatment Study listed at least 15 separators associated with various buildings and process lines.

7. Work Completed:

a. There is no known history of release from the units, and visual inspection of two units found no signs of release.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

SAND BLASTING SAND STORAGE AREA

(OLD MAP GRID B8)
IR AOC
(Main Area RCRA AOC G)
Fact Sheet

1. Contamination:

Sand blasting is used to remove paint from rocket motor casings. Sand-blasting sand commonly contains heavy metals.

2. Location:

The equipment is located indoors on a floor and containment area constructed of steel and concrete (Building 1134).

3. From:

The sand is collected and continuously recycled to the sand-blast equipment, resulting in no waste sand.

4. When:

Unknown.

5. Generated By:

The process is currently being converted to use of a plastic medium (i.e., to replace the sand) for removal of the paint.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

DRUM AT FUEL STORAGE AREA

(OLD MAP GRID C8)
IR AOC
(Main Area RCRA AOC H)
Fact Sheet

1. Contamination:

During visual inspection of the vehicle maintenance area (Building 290), a single drum containing an unidentified liquid was observed adjacent to the nearby fuel storage area. There was no indication, however, that the contents of the drum were a waste (i.e., no signs that activities in the area would generate a waste). The drum was located outdoors on an asphalt roadway. There was no apparent leakage from the drum, and visual inspection found no signs indicating that the area was routinely used for storage of drums.

2. Location:

Unknown.

3. From:

Unknown.

4. When:

Unknown.

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

SAFETY BURN POINT

(OLD MAP GRID F1)
IR AOC
(Main Area SWMU 20)
Fact Sheet

1. Contamination:

The Safety Burn Point is a thermal treatment open burning area that operates in a manner similar to the Cast Plant Burn Point (SWMU 119). The unit is used for thermal treatment of explosive and flammable waste.

2. Location:

The Safety Burn Point is located west of the Cast Plant Burn Point on a small peninsula extending into the Potomac River (south of Building 1248).

3. From:

The burn point is an area of bare soil on the end of the peninsula where various explosive and flammable materials are treated. The Safety Burn Point is used for burning of pyrotechnics including igniters, detonators, and other explosive devices.

Like the Cast Plant Burn Point, the state of Maryland has determined that the unit will require a RCRA permit under Subpart X regulations.

4. When:

The start-up date of the unit is estimated to be the late 1940s or early 1950s.

5. Generated By:

The unit is used for thermal treatment of explosive and flammable waste. The unit is an area of bare soil with no secondary containment preventing runoff into the river. The unit is designed to release to air. Some residue may remain from incomplete burning of the waste materials; however, facility representatives stated that the area is periodically "shocked" to remove any residual explosive or flammable material.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to a remedial investigation/feasibility study.

Currently designated as a closed range.

CAFFEE ROAD DECONTAMINATION BURN POINT

(OLD MAP GRID L6)
IR AOC
(Main Area SWMU 21)
Fact Sheet

1. Contamination:

The Decontamination Burn Point is a thermal treatment open burn area for decontamination of scrap metal contaminated with explosive. The burn area has two large piles of scrap metal, one awaiting thermal treatment and a second, treated pile. The waste oil used to ignite and sustain the fire is stored in drums at a storage area near the burn point.

Like the Cast Plant and Safety Burn Points, the state of Maryland has determined that the Decontamination Burn Point will require a RCRA permit under Subpart X regulations.

2. Location:

The unit lies at the south end of Caffee Road on top of the inactive Caffee Road Landfill and approximately 253 yards from Mattawoman Creek.

3. From:

The metal is placed into a pile and ignited to remove any explosive contaminants by burning. Waste oil is used on the metal to ignite and sustain the fire. Following treatment, the metal is sold to off-site contractors as scrap.

4. When:

This unit has been in operation since the Caffee Road Landfill was covered in the early 1980s.

5. Generated By:

This unit is used for the thermal treatment of solids, including wood and metal contaminated with explosives. The contaminated material is burned with waste oil to aid combustion. Thermally treated material is periodically collected and sold as scrap. The unit is located on the soil cover over the Caffee Road Landfill.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to a remedial investigation/feasibility study.

2.2 SITE DESCRIPTIONS – STUMP NECK ANNEX

This section includes the fact sheets for the Stump Neck IR sites and AOCs.

STUMP NECK IMPACT AREA

(OLD MAP GRID F16, G16)
IR Site 30
(Stump Neck Annex SWMU 22)
Fact Sheet

1. Contamination:

Exploded ordnance.

2. Location:

The area is approximately 40 acres of marshland.

3. From:

According to facility representatives, this area was used for testing of single-base, powder-fired projectiles.

4. When:

The unit was reportedly used before World War II.

5. Generated By:

Projectile testing.

6. Amount:

Unknown.

7. Work Completed:

No projectiles have been recovered from the area.

The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

OLD DEMOLITION RANGE

IR Site 31
(Stump Neck Annex SWMU 23)
Fact Sheet

1. Contamination:

Small quantities of shrapnel and casings from detonation of explosives.

2. Location:

The area is approximately one acre in size. This unit is in the immediate vicinity of the Chicamuxen Creek's Edge Dump Site B (SWMU 4).

3. From:

Training activities at the site are believed to have been similar to those now practiced at Range 6 (SWMU 5), an explosive ordnance disposal training range.

4. When:

Used in 1962, and for many years prior to 1962, as an old demolition training ground.

5. Generated By:

Explosive ordinance disposal training.

6. Amount:

Small quantities of shrapnel and casings.

7. Work Completed:

The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

SUSPECTED TOOL BURIAL SITE

IR Site 32
(Stump Neck Annex SWMU 11)
Fact Sheet

1. Contamination:

Beryllium-copper alloy.

2. Location:

Vicinity of Building 31 Stump Neck.

3. From:

Hand tools used in explosive ordnance disposal work.

4. When:

Unknown.

5. Generated By:

This unit is suspected to contain special beryllium-copper alloy hand tools used in explosive ordnance work.

6. Amount:

Unknown.

7. Work Completed:

a. During the visual site inspection, the unit was covered with grass and rimmed by sparse woods. Facility representatives indicated the burial site's approximate size was 10 feet by 10 feet.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This site was subjected to a site screening assessment (SSA) during 2002. Because the site is so similar to Site 34 with respect to the potential sources of contamination, the work plan allowed for not pursuing the investigation of Site 32 if the results from the Site 34 investigation indicated that no action was appropriate. Since the results of the Site 34 investigation indicated no reason to pursue Site 32, no field investigation was performed.

d. The draft SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Site Screening Investigation.

SCRAP METAL PIT

(OLD MAP GRID O16)
IR Site 33
(Stump Neck Annex SWMU 7)
Fact Sheet

1. Contamination:

Metal parts of mines, torpedoes, and other explosive-inert items.

2. Location:

The exact location of the Scrap Metal Pit could not be identified. The area is southwest of Building 2117.

3. From:

Used as a disposal pit for mines and torpedoes. This unit is an outdoor, unlined earthen area that measures approximately 10 feet by 30 feet by 10 feet deep.

4. When:

Prior to 1983

5. Generated By:

Disposed wastes include metal objects (parts of mines, torpedoes, and other inert materials) derived from the manufacture of explosives.

6. Amount:

Unknown.

7. Work Completed:

a. During the visual site inspection, the area was covered with grass and brier and was sparsely lined with trees. The area had been approximately two years earlier.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. A site screening assessment (SSA) field investigation was completed in 2002. The field investigation included a geophysical survey; temporary monitoring wells with groundwater samples analyzed for Target Analyte List (TAL) metals and explosive; subsurface soil samples analyzed for TAL metals and explosives; and test pits located based on the results of the geophysical survey.

d. The draft SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current: Status

Site Screening Investigation.

TOOL BURIAL SITE

(OLD MAP GRID E15)
IR Site 34
(Stump Neck Annex SWMU 8)
Fact Sheet

1. Contamination:

Beryllium-copper alloy.

2. Location:

Locatedapproximately 60 to 70 feet into a wooded area southeast of Building D21C.

3. From:

Two unlined burial pits, each measuring about 5 feet by 15 feet by 12 feet deep. The volume of tools in each pit is said to be about 5 feet by 8 feet by 2 feet.

4. When:

Used once in 1972 or 1973. Beryllium-copper alloy hand tools were disposed in the pits. These tools were discarded because they did not pass a magnetometer test and were considered unserviceable.

6. Amount:

Unknown.

7. Work Completed:

a. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

b. A site screening assessment (SSA) field investigation was completed in 2002. The field investigation included a geophysical survey; temporary monitoring wells with groundwater samples analyzed for beryllium and copper; subsurface soil samples analyzed beryllium, copper, and explosives; and test pits located based on the results of the geophysical survey.

c. The draft SSA report is currently undergoing Navy and regulatory review. A final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Site Screening Investigation.

TORPEDO BURIAL SITE

(OLD MAP GRID E14, E15)
IR Site 35
(Stump Neck Annex SWMU 9)
Fact Sheet

1. Contamination:

Torpedoes and associated hardware, possibly containing fuzes and parts which are not rendered safe.

2. Location:

Located near Building 2075.

3. From:

The unit is an unlined earthen pit. Inert objects disposed in this unit included discarded torpedo shells and associated hardware.

4. When:

Used in the late 1940s and early 1950s and inactive since the early 1950s

5. Generated By:

The waste was transported from a torpedo station near Washington, D.C.

6. Amount:

Unknown.

7. Work Completed:

During the visual site inspection the area appeared flat and was covered with green grass. The perimeter of the unit is wooded and an unnamed creek dissects the area.

The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

INACTIVE DISPOSAL SITE

(OLD MAP GRID H14, H15)
IR Site 36
(Stump Neck Annex SWMU 10)
Fact Sheet

1. Contamination:

Inert metal casings, mines, bombs, and torpedoes.

2. Location:

Unknown.

3. From:

Objects disposed in the landfill included metal casings, mines, bombs, and torpedoes, which reportedly were inert and contained no explosives or chemicals when buried.

4. When:

Used from 1972 to 1974; inactive since 1974.

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

a. The NACIP IAS report describes a landfill, that consists of two distinct adjacent areas. The unit is an unlined, earthen area, approximately one to two acres in size, and is covered with grass and other low vegetation. The unit is contiguous with a wetland area and is rimmed by sparse woods.

b. During the visual site inspection, tall grass-covered the area and the soil was dark with a low brier ground cover.

c. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

d. A site screening assessment (SSA) field investigation was completed in 2002. According to the work plan, the field investigation was limited to a geophysical survey.

e. The draft SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Site Screening Investigation.

CAUSEWAY

(OLD MAP GRID E13)
IR Site 37
(Stump Neck Annex SWMU 24)
Fact Sheet

1. Contamination:

Causeway fill, which is primarily rubble partly composed of old torpedo casings.

2. Location:

The access road to the ranges at Stump Neck crosses a narrow neck of land. The causeway is directly adjacent to the Potomac River.

3. From:

The narrow neck of land has been built up with fill material.

4. When:

Unknown.

5. Generated By:

Shore stabilization.

6. Amount:

Unknown.

7. Work Completed:

a. Observation of the area indicated the presence of a raised land area and use of concrete blocks and rock to protect the Potomac River side of the roadway from erosion for a distance of 300 to 400 feet. Along the river's edge, there was a small beach which was rimmed with rip-rap wrapped in wire mesh. During the visual site inspection, the unit appeared relatively flat and grassy.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. A site screening assessment (SSA) field investigation was completed in 2002. The field investigation included the installation of temporary monitoring wells with groundwater samples analyzed for Target Compound List (TCL) volatile and semi-volatile organic compounds including pesticides and PCBs, Target Analyte List (TAL) metals, and explosives; subsurface soil samples analyzed for the same analytes; and surface water and sediment samples also analyzed for the same analytes.

d. The draft SSA report is currently undergoing Navy and regulatory review. The final SSA report is anticipated to be completed in late 2002.

8. Current Status:

Site Screening Investigation.

Currently designated as a closed range.

RUM POINT LANDFILL(OLD MAP GRID U7)

IR Site 38
(Stump Neck Annex SWMU 1)
Fact Sheet

1. Contamination:

Various unknown containers and metals in addition to ash from a thermal treatment tank.

2. Location:

West of Rum Point Road.

3. From:

The unit is an unlined landfill that is approximately 1.5 to 2 acres in size.

4. When:

Until December 1989.

5. Generated By:

Ash from a thermal treatment tank, located on Range 3 Burn Point, was reportedly disposed here one time.

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. The IAS report indicated disposal of several metal objects, including garbage cans and drums.

b. As required by the NEODTC RCRA Corrective Action Permit, an RFI/ VI Report was completed in draft in January 1998. That document recommended that a No-Further-Action decision be considered for this site.

8. Current Status:

Awaiting Initiation of Site Screening Process.

RANGE 3 BURN POINT

IR Site 58
(Stump Neck Annex SWMU 2)
Fact Sheet

1. Contamination:

Unknown explosives, waste ash, and petroleum.

2. Location:

Bank of Chicamuxen Creek. This unit is located downhill and slightly southwest of the Pink Water Treatment Tank (SWMU 13). The Range 3 Burn Point is located within the 100-year flood plain.

3. From:

The unit is used for burning or thermal treatment of explosive wastes, explosive-contaminated materials, and carbon.

4. When:

Currently in use.

5. Generated By:

The Range 3 Burn Point is used to periodically burn or thermally treat explosive wastes generated at the facility and is a RCRA-regulated unit. The wastes are burned either directly on bare soil using gasoline as an ignition source in a Thermal Treatment Tank (SWMU 16) that rests on bare soil approximately 30 feet from the Creek's edge. This area also contains a metal container used to test small blasting caps (squibs).

6. Amount:

Unknown.

7. Work Completed:

a. During the visual site inspection, burned scraps were observed in the container, and charred debris was observed on the soil in the immediate vicinity of the Thermal Treatment Tank. A paint solvent or paint odor was detected close to the creek, approximately 15 feet from the Thermal Treatment Tank.

b. As required by the NEODTC RCRA Corrective Action Permit, an RFI/VI Report was completed (draft) in January 1998. That document recommended that a No-Further-Action decision be considered for this site.

8. Current Status:

Awaiting Initiation of Site Screening Process.

CHICAMUXEN CREEK'S EDGE DUMP SITE A

IR Site 59
(Stump Neck Annex SWMU 3)
Fact Sheet

1. Contamination:

Unknown

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2. Location:

This unit is located directly under the Range 3 Burn Point (SWMU 2). Exactly what was dumped in this unit is not known. There are indications that the earthen area which comprises this unit and the Range 3 Burn Point (SWMU 2) are man-made fill areas. The unit is located adjacent to Chicamuxen Creek within the 100-year flood plain. The unit is surrounded on three sides by a rip-rap berm covered with wire mesh.

4. When:

Unknown.

5. Generated By:

Unknown.

6. Amount:

The unit is approximately 2 acres in size and is covered with bare soil.

7. Work Completed:

As required by the NEODTC RCRA Corrective Action Permit, a VI/RFI Report was completed (draft) in January 1998. That document recommended that a No-Further-Action decision be considered for this site.

8. Current Status:

Awaiting Initiation of Site Screening Process.

CHICAMUXEN CREEK'S EDGE DUMP SITE B

IR Site 60
(Stump Neck Annex SWMU 4)
Fact Sheet

1. Contamination:

This unit was used as a dump site but facility representatives were uncertain of the exact nature of materials disposed.

2. Location:

Immediate vicinity of the Old Demolition Range (SWMU 23).

3. From:

This unit is an unconfined earthen area located adjacent to Chicamuxen Creek.

4. When:

Unknown.

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

a. No release controls associated with this unit. During the visual site inspection, the unit was covered with grass, and a sparse stand of trees separated the area from the water's edge.

b. As required by the NEODTC RCRA Corrective Action Permit, an RFI/ VI Report was completed (draft) in January 1998.

8. Current Status:

Awaiting Initiation of Site Screening Process.

RANGE 6

IR Site 61
(Stump Neck Annex SWMU 5)
Fact Sheet

1. Contamination:

Explosives. The area was used as a demolition range. The site consists of five ranges that were used for open detonation training. Small amounts (less than two to three pounds) of explosives were used. Unexploded ordnance was open-detonated in place.

2. Location:

Range 6 is located at the end of Archer Avenue, on a point of land extending into the Potomac River and Chicamuxen Creek. This unit is located within the 100-year flood plain.

3. From:

Wastes that were managed in this unit include small quantities of shrapnel and casings from detonation of explosives.

4. When:

This unit has been phased out since the EOD school relocated to Florida during early 1998. The range is currently inactive.

5. Generated By:

EOD school training.

6. Amount:

This unit was used on a weekly basis, depending on the number of recruits at any given time.

7. Work Completed:

a. A verification investigation was completed in June 1996. The report on the investigation recommended that additional field investigations be conducted at the site.

b. As required by the NEODTC RCRA Corrective Action Permit, an RFI/VI Report was completed in draft in January 1998. That document recommended consideration for implementing a feasibility study or land use restrictions.

8. Current Status:

Awaiting Initiation of Site Screening Process.

AIR BLAST POND

(OLD MAP GRID F15)
IR Site 62
(Stump Neck Annex SWMU 6)
Fact Sheet

1. Contamination:

Explosives include Pentolite, HBX1, HBX2, H6, and C4 Propellant (similar to lead azide).

2. Location:

Adjacent to Chicamuxen Creek near industrial outfall IW 32.

3. From:

Explosives testing.

4. When:

Used by the facility from 1955 to 1975; has not been in service for 15 to 20 years.

5. Generated By:

The unit consists of an unlined earthen pit, measuring approximately 100 feet in diameter, with a capacity of 1.3 million gallons. During operation, explosives were detonated above water and in water during testing. The pit was filled with water from Chicamuxen Creek through a steel, 14-inch-diameter pipe at a rate of 1,300 gallons per minute. Wire was strung across the pit to measure the concussion factor of explosives above water. The water in the pond was periodically discharged into Chicamuxen Creek through the same pipe (IW 32). The pond was emptied two to three times per year. The unit is located in a wooded area of the facility.

6. Amount:

According to an interview of a former facility employee conducted by the Naval Explosive Ordnance Disposal Technology Center, a maximum of eight pounds of explosives were used per detonation event (shot). During the unit's period of operations, three to four shots were conducted per day, with an estimated total of 1,500 shots over the unit's active life.

7. Work Completed:

As required by the NEODTC RCRA Corrective Action Permit, a VI/RFI Report was completed (draft) in January 1998. That document recommended consideration of a No-Action-Decision for this site.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

AREA 8

IR Site 63
(Stump Neck Annex SWMU 25)
Fact Sheet

1. Contamination:

Area 8 is an active facility used to train military personnel to defuse explosive devices. were detected in sediment samples collected at Area 8.

2. Location:

Located on Roach Road. Access to the site is controlled by a fence and a gate located on Archer Avenue. Area 8 is approximately 9.6 acres in size.

3. From:

At the water-shot locations, the explosive is placed 2 to 5 feet below the water surface. At the air-shot locations, the explosive is suspended (on wire) approximately 2 feet above ground. The types of ordnance that is used includes TNT stock, PETN, military dynamite, blasting caps, detonation cord, and similar devices.

4. When:

EOD School relocated in 1998.

5. Generated By:

EOD School training.

6. Amount:

Training exercises at Area 8 are performed 10 months a year. It is estimated that approximately 50 to 75 pounds (net explosive weight) of explosives are used at this training facility each year. No more than 0.5 pound of explosives is used at the air- or water-shot locations during training exercises.

7. Work Completed:

A verification investigation was completed in January 1996. The report recommended no further remedial action for the site, because contaminants detected at the site are unlikely to pose a risk to human health and the environment based on a future industrial land use scenario.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

IMPROVISED EXPLOSIVE DEVICES (IED) SITE

IR Site 64
(Stump Neck Annex SWMU 26)
Fact Sheet

1. Contamination:

Training operations were performed at this site to demonstrate that household and other easily obtained chemicals could be used to make IEDs. During these operations, small amounts of residual waste were discarded on the ground. These waste chemicals included small amounts of silver nitrate.

2. Location:

Near Building 2118.

3. From:

Residual waste discarded on the ground.

4. When:

Since November 1957, the IED has been used to test and demonstrate the explosive potential of chemical mixtures.

5. Generated By:

Training demonstrations.

6. Amount:

Unknown.

7. Work Completed:

A verification investigation was completed in January 1996. The report recommended no further remedial action for the site, because contaminants detected at the site are unlikely to pose a risk to human health and the environment based on a future industrial land use scenario.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

INERT ORDNANCE DISPOSAL SITE (IOD)

IR Site 65
(Stump Neck Annex SWMU 27)
Fact Sheet

1. Contamination:

Inert Ordnance Disposal Site. This site consists of a cement bunker where inert ordnance and inert training aids were discarded.

2. Location:

3.

South of Building 2074SN.

3. From:

Historical activities at the IOD are not well documented, but the site was apparently used for disposal of inert ordnance.

4. When:

The initial date when the scrap metal was discarded is unknown.

5. Generated By:

Based on current information, only inert metal scrap was placed in this bunker. A layer of cement was poured over the metal scrap.

6. Amount:

Unknown.

7. Work Completed:

A verification investigation was completed in January 1996. The report recommended no further remedial action for the site, because contaminants detected at the site are unlikely to pose a risk to human health and the environment based on a future industrial land use scenario.

8. Current Status:

Awaiting Initiation of Site Screening Process.

Currently designated as a closed range.

WASTE OIL STORAGE SITE

(OLD MAP GRID D15)
IR AOC
(Stump Neck Annex SWMU 12)
Fact Sheet

1. Contamination:

Waste oil.

2. Location:

Designated area of storage lot near Building 2019.

3. From:

Waste oil is stored in 55-gallon drums on wooden pallets in an asphalt-covered area surrounded by a chain-link fence.

4. When:

Since approximately 1985.

5. Generated By:

The waste oil is generated by vehicle maintenance operations and employee self-help oil changes at NAVEODTECHCEN. The waste is periodically collected from the storage site by Property Disposal (located off-site at the Indian Head Naval Ordnance Station) for off-site recycling or disposal.

6. Amount:

Unknown.

7. Work Completed:

a. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

PINK WATER TREATMENT TANK AND ASSOCIATED TRENCHES

IR AOC
(Stump Neck Annex SWMU 13)
Fact Sheet

1. Contamination:

TNT, RDX, and various other forms of explosives. Types of explosives treated at the unit have included Tolite, RDX, RDX/Octal, TNT, Comp B, TD-50, H-6, and Black Powder. Spent carbon contaminated with explosives (KO45).

2. Location:

Building 2057, northeast of the Range 3 Bum Point (SWMU 2).

3. From:

"Pink water" (KO47) that is contaminated with explosive residue. This contaminated water is collected and treated on site at the Pink Water Treatment Tank.

4. When:

Used from April until October each year since the permit was granted on November 14, 1985.

5. Generated By:

Pink water is generated at the facility by a process in which explosive residues are removed from various types of ordnance. The treatment unit is a RCRA-regulated unit. The explosive is removed by steaming the interior of the ordnance casing.

The contaminated water is collected and treated on site at the Pink Water Treatment Tank. As the pink water is generated during steaming, the water is collected in a concrete trench that directs the waste to a 1,500-gallon stainless-steel collection tank. The collection tank and additional treatment units are located in below-ground, concrete secondary containment structures. Treatment consists of filtering to remove solid explosive particles and activated carbon adsorption for removal of organic constituents. The carbon filters are assembled in two inline, 55-gallon drums. Following treatment, the water is discharged through a plastic pipe to NPDES outfall IW 49 on Chicamuxen Creek. The filter materials are periodically thermally treated at the Range 3 Bum Point (SWMU 2), and the spent carbon (KO45) is shipped off-site for disposal.

6. Amount:

Unknown.

7. Work Completed:

a. The facility was authorized to treat pink water from TNT operations under Controlled Hazardous Substances Facility Permit Number A-223a, issued by the Maryland Department of the Environment. The permit is dated November 14, 1985, authorizes the K047 waste to be treated by filtration and activated carbon adsorption. Filtration sludges (KO45) are drummed and shipped off-site for disposal. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should continue to be managed within the RCRA process.

SPENT PHOTOGRAPHIC SOLUTION STORAGE

(OLD MAP GRID G11)
IR AOC
(Stump Neck Annex SWMU 15)
Fact Sheet

1. Contamination:

Silver, sodium thiosulfate, and hydroquinone.

2. Location:

Photographic Laboratory, Building 22SN.

3. From:

The visual site inspection (VSI) team observed a drum containing spent photographic solution staged outside the building.

4. When:

At the time of the VSI in 1989.

5. Generated By:

Spent photographic solution is collected and stored at the Photographic Laboratory, Building 22SN. The spent photographic solution is stored in a 50-gallon polyethylene tank prior to shipment off site for silver recovery.

6. Amount:

One 55-gallon drum

7. Work Completed:

a. According to information provided by the facility after the VSI, the drums are normally staged indoors until they are transferred off-site. The drum observed during the VSI was prematurely moved outside for shipment.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

THERMAL TREATMENT TANK

IR AOC
(Stump Neck Annex SWMU 16)
Fact Sheet

1. Contamination:

The Thermal Treatment Tank is used for burning explosives and explosive-contaminated items.

2. Location:

Range 3 Bum Point (SWMU 2). Ash was observed on bare soil immediately beneath and around the unit.

3. From:

The Thermal Treatment Tank is an open-top, steel tank used for burning explosives and explosive-contaminated items. The tank is approximately 5 feet tall by 3 feet wide.

4. When:

Currently active.

5. Generated By:

Ash from the Thermal Treatment Tank was disposed one time in the Rum Point Landfill (SWMU 1). The ash is being tested for EP Toxicity. If hazardous, the ash is manifested as a hazardous waste. Otherwise, it is disposed in an off-site sanitary landfill.

6. Amount:

Unknown.

7. Work Completed:

a. During the visual site inspection, the tank was located on bare soil approximately 15 feet from Chicamuxen Creek's edge.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to a remedial investigation/feasibility study.

BUILDING 2015-CHEMISTRY LAB ACCUMULATION AREA

(OLD MAP GRID S9)
IR AOC
(Stump Neck Annex SWMU 17)
Fact Sheet

1. Contamination:

Waste enamel, epoxy compound, capicure EH-30, and a resinous chlorinated paraffin (chlorowax 40).

2. Location:

This unit is located inside Building 2015.

3. From:

The unit consists of a metal-covered workbench used to store approximately 25 small metal and glass containers of spent chemicals. The containers are labeled and contained in zip-lock plastic bags.

4. When:

The waste, which was observed during the visual site inspection (VSI)had been stored here since the chemistry lab began operations approximately 20 years ago.

5. Generated By:

Unknown.

6. Amount:

Small containers of unknown volume

7. Work Completed:

a. In addition to a VSI according to facility representatives, prior to disposal off-site, the containers were placed in over-pack drums and transferred to the Main Area.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

WASTE PILE

(OLD MAP GRID F14)
IR AOC
(Stump Neck Annex SWMU 18)
Fact Sheet

1. Contamination:

Unknown.

2. Location:

This unit is adjacent to the Air Blast Pond (SWMU 6). Facility representatives indicated that this area was originally identified in an aerial photo, which showed a mounded area.

3. From:

Facility representatives indicated that the mounding seen in an aerial photo may have been excavated material from construction of the Air Blast Pond (SWMU 6).

4. When:

Unknown.

5. Generated By:

Construction excavation.

6. Amount:

Unknown.

7. Work Completed:

a. During the visual site inspection, the unit consisted of a flat, earthen area that was covered with grass. The unit is separated from the Air Blast Pond by a densely wooded area.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

DISPOSAL AREA NO. 1

(OLD MAP GRID YY21)
IR AOC
(Stump Neck Annex SWMU 19)
Fact Sheet

1. Contamination:

Inert material.

2. Location:

During the visual site inspection the area was observed to slope downhill from the northwest. A bunker, which functions as an office, occupies a portion of the area. The remaining portion consists of a leveled grassy area rimmed with sparse woods on the eastern side. The woods separate the unit from Chicamuxen Creek (south of Building 2063SN)

3. From:

This is an unlined earthen area that was later used for various types of training.

4. When:

Unknown.

5. Generated By:

Unknown.

6. Amount:

The unit's size was estimated to be approximately 1.5 acres.

7. Work Completed:

a. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

b. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to a remedial investigation/feasibility study.

DISPOSAL AREA #2

(OLD MAP GRID D14)
IR AOC
(Stump Neck Annex SWMU 20)
Fact Sheet

1. Contamination:

Unknown.

2. Location:

This is a relatively flat earthen area that is bounded on the north by the Potomac River. It is located west of Building 2012SN.

3. From:

Facility representatives could not provide information about the composition of the inert material disposed here.

4. When:

Unknown.

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

a. During the visual site inspection, the area was covered with grass and is currently used as a skeet and trap shooting area.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to the site screening process.

DRUM STORAGE AREA

(OLD MAP GRID YY21)
IR AOC
(Stump Neck Annex SWMU 21)
Fact Sheet

1. Contamination:

Unknown.

2. Location:

This unit is a relatively flat earthen area where several drums of unknown materials and origin were stored on a short-term basis. (West of Building 2012SN)

3. From:

The drums were noted in an aerial photo, and facility representatives could provide no further information.

4. When:

Unknown.

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

a. At the time of the visual site inspection, no drums were being stored here.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that no action should be taken in connection with this unit.

SKEET RANGE

IR AOC
(Stump Neck Annex SWMU 28)
Fact Sheet

1. Contamination:

This area lies on what was originally identified as SWMU 20, Disposal Area 2, in the RCRA corrective action permit. The permit states that, "During the visual site inspection, the area was covered with grass and is currently used as a skeet and trap shooting area." In addition, the permit states, "EPA has determined that no further action is necessary at this time." However, since the draft RFA was written, use of the skeet range has been discontinued. The skeet range was used mainly for recreational purposes. Clay pigeons were used as targets. Therefore, lead shots remain on the ground at the skeet range and in the Potomac River.

2. Location:

West of Building 2012SN.

3. From:

Unknown.

4. When:

Operations began more than 25 years ago and ended in June 1991. The range is currently inactive.

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be subjected to the site screening process.

OLD PISTOL RANGE

(OLD MAP GRID V7)
IR AOC
(Stump Neck Annex SWMU 29)
Fact Sheet

1. Contamination:

The facility Security Department used this site for training for approximately seven years, ending in August 1991. Rounds were fired into the side of a hill. The side of the hill contains lead shots.

2. Location:

Near Building 2070SN.

3. From:

Unknown.

4. When:

Approximately seven years, ending in August 1991

5. Generated By:

Unknown.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be retained as an area of concern.

Currently designated as a closed range.

PHOTOGRAPHIC LAB SEPTIC TANK SYSTEM

IR AOC
(Stump Neck Annex SWMU 14)
Fact Sheet

1. Contamination:

Possible dilute amounts of silver.

2. Location:

Near Photographic Lab, Building 22SN.

3. From:

This system consists of a below-ground tank and associated collection and discharge lines and drain field.

4. When:

Unknown.

5. Generated By:

In the past, this unit handled wastewater from the photographic lab, which may have contained dilute amounts of silver.

Waste fixers containing silver were drummed and transported off site for silver recovery. The unit handled sanitary wastewater only and was inspected weekly, in accordance with NPDES permit conditions sampling is conducted monthly.

The effluent is chlorinated and discharged to the Potomac River under NPDES permit MD0020885, which was issued in May 1988 and expired in April 1993.

In addition, dilute photographic wastewater is discharged to the Potomac River via NPDES permit #NMOOO3158(EPA) and #88-DP-2515 (MDE).

7. Work Completed:

a. After the visual site inspection, a new septic system was installed, eliminating surface discharge to the Potomac River.

b. The 1990 EPA RCRA Corrective Action Permit stated that no further action was necessary at the time.

c. This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be retained as an area of concern.

BUILDING 2015 DRY WELL

IR AOC
(Stump Neck Annex SWMU 30)
Fact Sheet

1. Contamination:

This site consists of a dry well that is connected to a laboratory located in Building 2015.

2. Location:

Industrial Wastewater Outfall 64 (IW 64), Building 2015.

3. From:

Spent chemical reagents from the laboratory were discarded by pouring them down the drain. Currently, only wash water from a hand sink is discharged to the dry well.

4. When:

Approximately 10 years.

5. Generated By:

The overflow from the dry well enters permitted NPDES Outfall IW 64.

6. Amount:

Unknown.

7. Work Completed:

This unit was part of a desk-top audit on November 28, 2001.

8. Current Status:

The decision reached during the desk-top audit was that this unit should be retained as an area of concern.

3.0 SITE LOCATION SUMMARY

The locations of all the sites and AOCs identified in the previous sections of this Site Management Plan are illustrated in Figure 3-1 and 3-2. Figure 3-1 identifies the locations of the IHDIV-NSWC Main Area sites and AOCs, and Figure 3-2 identifies the locations for the IHDIV-NSWC Stump Neck Annex sites and AOCs.

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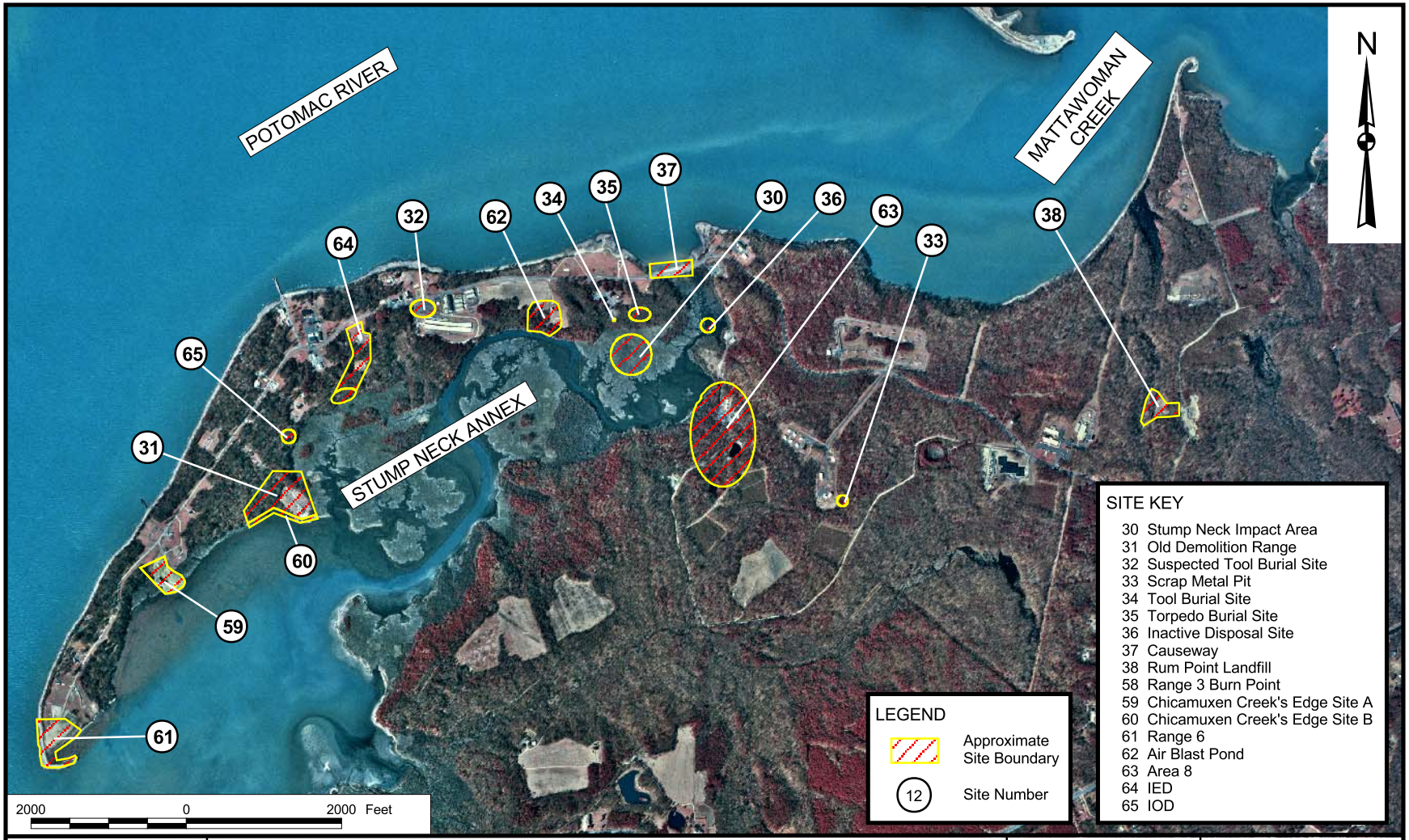
SITE KEY

1 Thorium Spill
2 Waste Crank Case Oil Applied to Torrence Road
3 Nitroglycerin Explosion, Nitration Building Area
4 Lloyd Road Oil Spill Sites
5 X-Ray Building 731
6 Building 1349, Hypo Spill
7 HMX Spill, Slurry Mix Building 682
8 Mercury Contamination From Building 766
9 Patterson Avenue Oil Spill
10 Single-base Propellant Grains Spill
11 Caffee Road Landfill
12 Town Gut Landfill
13 Paint Solvents Disposal Dumping Ground
14 Waste Acid Disposal Pit
15 Mercury Deposits in Manhole, Fluorine Lab
16 Laboratory Chemical Disposal
17 Disposed Metal Parts Along Shoreline
18 Hog Island
19 Catch Basin at Chip Collection House (1051)
20 Single-base Powder Facility
21 Bronson Road Landfill
22 NG Slums Burning Site
23 Hydraulic Oil Spill Discharges from Extrusion Plant
24 Abandoned Drain Lines
25 Hypo Discharge X-Ray Building No. 2
26 Thermal Destructor 2
27 Thermal Destructor 1
28 Original Burning Ground
29 The Valley
39 Organics Plant
40 Silver and Palladium Catalyst in Sediments
41 Scrap Yard
42 Olsen Road Landfill
43 Toluene Disposal Site
44 Soak Out Area
45 Abandoned Drums
46 Cadmium Sandblast Grit
47 Mercuric Nitrate Disposal Area
48 Nitroglycerine Plant Disposal Area
49 Chemical Disposal Pit
50 Building 103, Crawl Space
51/54 Building 101, Dry Well/Building 101
52/55 Building 102, Dry Well/Building 102
53 Mercury Contamination of the Sewage System
56 IW87 - Lead Contamination
57 TCE Building 292 Area

DRAWN BY: K. PEILA	DATE: 7/26/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019 / OWNER NUMBER: —
CHECKED BY: GJL	DATE: 7/26/02	SITE LOCATION MAP MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL / DATE: 8/8/02
COST/SCHEDULE-AREA			APPROVED BY: — / DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE 3-1 / REV: 0



DRAWN BY K. PEILA	DATE 7/26/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER 4019 / OWNER NUMBER —
CHECKED BY GJL	DATE 7/26/02	SITE LOCATION MAP STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY GJL / DATE 8/8/02
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 3-2 / REV 0

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4.0 SCHEDULES

Table 4-1 provides the schedule for the investigation and reporting of all the IR sites and AOCs identified in the preceding sections of this Site Management Plan.

TABLE 4-1

SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
12	**Complete ROD**	May-2001	TBD		
	Complete Draft Final ROD	Feb-2001	Apr-2001	Jul-2001	A draft final (rev 1) version is under review.
	Complete Final ROD	May-2001	Aug-2001	Aug-2001	A final (rev 1) version is pending resolution of Agency-level LUC dispute.
	ROD Signed	May-2001	TBD		
	Complete Remedial Design	Nov-2001			Design delayed pending resolution of LUC dispute. Subsequently instructed to proceed with the design without a
	Complete 65% Remedial Design	Apr-2001	May-2001	May-2001	
	Complete 100% Remedial Design	Jul-2001	Sep-2001	Oct-2001	
	Complete Final Remedial Design	Nov-2001	Feb-2002	Feb-2002	
	Complete Remedial Action	May-2002			
	Complete Draft RA Work Plan	Mar-2002		Mar-2002	
	Complete Final RA Work Plan	Apr-2002			
	Start Construction	Dec-2001	Sep-2002		Action Memo/EE/CA for Removal Action signed 7/16/02
	Complete Construction	May-2001	Feb-2003		
	Complete PCAS				
	Complete LUCAP/LUCIP/LTMP		Mar-2002		Final LTMP completed
	Implement LUCAP/LUCIP		Jun-2002		Completion is pending HQ resoluton of land use control issues.
	Award Long-Term Monitoring		Dec-2002		Completion is pending HQ resoluton of land use control issues.
	Implement LTMP		Feb-2003		
41	**Complete ROD**	Jun-2001			Completion of the final ROD is on hold pending resolution of Agency-level discussions regarding land use controls.
	Complete Draft Final ROD	Mar-2001	May-2001	Sep-2001	
	Complete Final ROD	Jun-2001	TBD		
	ROD Signed	Jun-2001	TBD		
	Complete Remedial Design	Jan-2002	Mar-2002		
	Award Remedial Design	Jan-2000		Jan-2000	
	Complete 65% RD	Oct-2001	Jul-2001	Jul-2001	
	Complete 100% RD	Dec-2001	Nov-2001	Nov-2001	
	Complete Final Remedial Design	Mar-2002	Sep-2002	Aug-2002	Final design delayed by the need to resolve comments on the Verification Sampling Plan in connection with techniques to be used to remediate the PCB-contaminated concrete slab.
	Complete Remedial Action				
	Award Remedial Action	Mar-2002	May-2002		Schedule affected by ROD and budget issues
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction	Jun-2002	Oct-2002		Action Memo/EE/CA for Removal Action signed 7/24/02
	Complete Construction	Sep-2002	Mar-2003		
	Complete PCAS				
	Complete LUCIP/LTMP		Mar-2002		Completion is pending HQ resoluton of land use control issues.
	Implement LUCIP		Sep-2002		Completion is pending HQ resoluton of land use control issues.
	Award Long-Term Monitoring	Oct-2002	Aug-2002		Completion is pending HQ resoluton of land use control issues.
	Implement LTMP		Dec-2002		
42	**Complete Feasibility Study**	Jun-2001			Delayed during resolution of MDE comments and questions regarding cap cross section and the extent of groundwater contamination. Previously unanticipated field investigation required to address comments.
	Complete Draft Final FS	Sep-2000		Apr-2001	
	Complete Draft Final FS (Rev 1)			Mar-2002	
	Complete Final FS	Jun-2001	Feb-2002	Jun-2002	
	Complete Proposed Plans	Nov-2001	Feb-2003		
	Award PP-ROD			Mar-2002	
	Complete Draft PP	Jun-2001	Sep-2002	Apr-2002	
	Complete Draft Final PP	Aug-2001	Dec-2002		IHIRT reconsidering selected remedial alternatve
	Complete Final PP	Nov-2001	Feb-2003		
	Complete ROD	Mar-2002	Mar-2003		
	Complete Draft ROD	Dec-2001	Oct-2002		Delays follow from FS delays described above. IHIRT reconsidering selected alternative.
	Complete Draft Final ROD	Mar-2002	Dec-2002		
	ROD Signed	Mar-2002	Mar-2003		
	Complete Remedial Design	Oct-2002			
	Award Remedial Design	Jan-2000		Mar-2002	
	Complete 65% RD	Jul-2002		May-2002	
	Complete 100% RD		Oct-2002		HIRT reconsidering selected alternative.
	Complete Final Remedial Design	Oct-2002	Feb-2002		
	Complete Remedial Action				
	Award Remedial Action	Dec-2002			
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction	Nov-2003			
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				

TABLE 4-1

SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
44	**Complete ROD**	Jun-2001			
	Complete Final ROD	Jun-2001		Oct-2001	Awaiting receipt of EPA counsel comments
	ROD Signed	Jun-2001	Mar-2002		Signed by Navy 7/18/02- awaiting EPA signature
47	**Complete Remedial Investigation**	Nov-2000			
	Complete Draft Final RI	Aug-2000		Aug-2000	
	Complete Revised Draft Final RI	Jul-2001	Mar-2002		Delayed because additional investigation was required during RI to determine extent of larger than anticipated groundwater plume. Sampling further postponed to allow groundwater levels to rise in order to obtain samples. Contract mod in process.
	Complete Final RI	May-2002	Nov-2002		
	Complete Feasibility Study	Sep-2001	Jul-2003		
	Award FS-ROD			Feb-2001	
	Complete Draft FS	Jun-2001	Jan-2003		Delayed because additional investigation was required during RI to determine extent of larger than anticipated groundwater plume. Sampling further postponed to allow groundwater levels to rise in order to obtain samples.
	Complete Draft Final FS	Aug-2001	Apr-2003		
	Complete Final FS	Sep-2001	Jul-2003		
	Complete Proposed Plans	Jul-2003	Jan-2004		
	Complete Draft PP	Feb-2003	Aug-2003		Delayed because additional investigation was required during RI to determine extent of larger than anticipated groundwater plume. Sampling further postponed to allow groundwater levels to rise in order to obtain samples.
	Complete Draft Final PP	May-2003	Nov-2003		
	Complete Final PP	Jul-2003	Jan-2004		
	Complete ROD	Feb-2004	Oct-2004		
	Complete Draft ROD	Oct-2003	Apr-2004		Delayed because additional investigation was required during RI to determine extent of larger than anticipated groundwater plume. Sampling further postponed to allow groundwater levels to rise in order to obtain samples.
	Complete Draft Final ROD	Dec-2003	Jul-2004		
	ROD Signed	Feb-2004	Oct-2004		
	Complete Remedial Design				Not yet awarded (beyond FY 2003)
	Award Remedial Design				
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				Not yet awarded (beyond FY 2003)
	Award Remedial Action				
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
57	**Complete Feasibility Study**	Oct-2001			Delays have accumulated from delays in reviewing the RI work plan, the RI Report, and the Pre-FS Field Investigation Work Plan. Add'l delays occurred during scope of the pre-FS field investigations.
	Complete Draft FS	Jul-2001	Apr-2002	May-2002	
	Complete Draft Final FS	Sep-2001	Jun-2002		
	Complete Final FS	Oct-2001	Aug-2002		
	Complete Proposed Plans	Jun-2002			
	Award PP-ROD			Mar-2002	
	Complete Draft PP	Mar-2002	Sep-2002		
	Complete Draft Final PP	May-2002	Dec-2002		
	Complete Final PP	Jun-2002	Feb-2003		
	Complete ROD	Jun-2002	Aug-2003		
	Complete Draft ROD	Mar-2002	Mar-2003		
	Complete Draft Final ROD	May-2002	Jun-2003		
	ROD Signed	Jun-2002	Aug-2003		
	Complete Remedial Design	Dec-2002	Oct-2003		
	Award Remedial Design	Dec-2001	Jun-2004		
	Complete 35% RD	Jul-2002	Apr-2003		
	Complete 100% RD	Oct-2002	Jul-2003		
	Complete Final Remedial Design		Oct-2003		

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SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
	Complete Remedial Action				
	Award Remedial Action				
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction	Feb-2003	Dec-2003		
	Complete Construction	Jul-2003	Jun-2003		
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
Lab Area (14, 15, 16, 49, 50, 53, 54, 55)	**Complete Remedial Investigation**	Oct-2001	May-2002		Delayed due to delays in EPA toxicologist's review of the human health risk assessment interim deliverable #2 (submitted October, 2001, comments received April, 2002).
	Complete Draft RI WP	Aug-2000		Jul-2000	
	Complete Final RI WP	Oct-2000		Feb-2001	
	Complete Draft RI	May-2001		Jun-2002	
	Complete Draft Final RI		Feb-2002		
	Complete Final RI	Oct-2001	May-2002		
	Complete Feasibility Study	May-2002	Feb-2003		Delayed due to delay in completing RI report (see above)
	Award FS-ROD			Feb-2001	
	Complete Draft FS	Dec-2001	Aug-2003		
	Complete Draft Final FS	Mar-2002	Nov-2003		
	Complete Final FS	May-2002	Feb-2003		
	Complete Proposed Plans	Mar-2003	Sep-2003		Delayed due to delay in completing RI report (see above)
	Complete Draft PP	Nov-2002	Mar-2003		
	Complete Draft Final PP	Jan-2003	Jun-2003		
	Complete Final PP	Mar-2003	Sep-2003		
	Complete ROD	Oct-2003	May-2004		Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Jun-2003	Nov-2003		
	Complete Draft Final ROD	Aug-2003	Feb-2004		
	ROD Signed	Oct-2003	May-2004		
	Complete Remedial Design				
	Award Remedial Design	Mar-2004			Not awarded, beyond FY 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				Not awarded, beyond FY 2003
	Award Remedial Action				
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
11	**Complete Remedial Investigation**	Jun-2001			Delayed due to delays in BTAG review of the RI report, and the necessity for additional sampling to characterize the site. Contract negotiated - award pending.
	Complete Draft RI WP	May-2000		May-2000	
	Complete Final RI WP	Aug-2000		Jul-2000	
	Complete Draft RI			N/A	
	Complete Draft Final RI	Feb-2001		Jul-2001	
	Complete Final RI	Jun-2001	Jun-2002		
	Complete Feasibility Study	May-2002	Mar-2003		Delayed due to delay in completing RI report (see above)
	Award FS-ROD			Feb-2001	
	Complete Draft FS	Dec-2001	Sep-2002		
	Complete Draft Final FS	Mar-2002	Dec-2002		
	Complete Final FS	May-2002	Mar-2003		
	Complete Proposed Plans	Dec-2002	Sep-2003		Delayed due to delay in completing RI report (see above)
	Award PP - ROD	Feb-2001		Feb-2001	
	Complete Draft PP	Jul-2002	Apr-2003		
	Complete Draft Final PP	Oct-2002	Jul-2003		
	Complete Final PP	Dec-2002	Sep-2003		
	Complete ROD	Jul-2003	May-2004		Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Mar-2003	Dec-2003		
	Complete Draft Final ROD	May-2003	Mar-2004		
	ROD Signed	Jul-2003	May-2004		

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SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
	Complete Remedial Design				
	Award Remedial Design	Mar-2003			
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not awarded, beyond FY 2003
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
13	**Complete Remedial Investigation**	Jun-2001			Delayed due to delays in BTAG review of the RI report, and the necessity for additional sampling to characterize other sites included in the same RI report.
	Complete Draft RI		N/A		
	Complete Draft Final RI	Feb-2001		Jul-2001	
	Complete Final RI	Jun-2001	Jun-2002		
	Complete Proposed Plan	Aug-2002			
	Complete Draft PP	Mar-2002		Mar-2002	Delayed by change of regulatory position on groundwater.
	Complete Draft Final PP	May-2002			
	Complete Final PP	Aug-2002			
	Complete ROD				
	Complete Draft ROD				
	Complete Draft Final ROD				
	ROD Signed				
17	**Complete Remedial Investigation**	Jun-2001			Delayed due to delays in BTAG review of the RI report, and the necessity for additional sampling to characterize the site. Contract negotiated - award pending.
	Complete Draft RI WP	May-2000		Ma;y 2000	
	Complete Final RI WP	Aug-2000		Jul-2000	
	Complete Draft RI			N/A	
	Complete Draft Final RI	Feb-2001		Jul-2001	
	Complete Final RI	Jun-2001	Jun-2002		
	Complete Feasibility Study	May-2002	Mar-2003		Delayed due to delay in completing RI report (see above)
	Complete Draft FS	Dec-2001	Sep-2002		
	Complete Draft Final FS	Mar-2002	Dec-2002		
	Complete Final FS	May-2002	Mar-2003		
	Complete Proposed Plans	May-2004			Delayed due to delay in completing RI report (see above)
	Award PP - ROD	Feb-2001		Feb-2001	
	Complete Draft PP	Apr-2003			
	Complete Draft Final PP	Jul-2003			
	Complete Final PP	May-2004			
	Complete ROD	May-2004			Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Dec-2003			
	Complete Draft Final ROD	Mar-2004			
	ROD Signed	May-2004			
	Complete Remedial Design				
	Award Remedial Design	Dec-2003			Not awarded, beyond FY 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not awarded, beyond FY 2003
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				

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SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
21	**Complete Remedial Investigation**	Jun-2001			Delayed due to delays in BTAG review of the RI report, and the necessity for additional sampling to characterize other sites included in the same RI report. Contract negotiated - award pending.
	Complete Draft RI WP	May-2000		May-2000	
	Complete Final RI WP	Aug-2000		Jul-2000	
	Complete Draft RI				
	Complete Draft Final RI	Feb-2001		Jul-2001	
	Complete Final RI	Jun-2001	Jun-2002		
	Complete Feasibility Study	May-2002	Oct-2002		Delayed due to delay in completing RI report (see above)
	Complete Draft FS	Dec-2001	Apr-2002		
	Complete Draft Final FS	Mar-2002	Jul-2002		
	Complete Final FS	May-2002	Oct-2002		
	Complete Proposed Plans	Apr-2003			Delayed due to delay in completing RI report (see above)
	Award PP - ROD	Feb-2001			
	Complete Draft PP	Nov-2002			
	Complete Draft Final PP	Jan-2003			
	Complete Final PP	Apr-2003			
	Complete ROD	Dec-2003			Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Jul-2003			
	Complete Draft Final ROD	Oct-2003			
	ROD Signed	Dec-2003			
	Complete Remedial Design				
	Award Remedial Design				Not awarded yet, beyond 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not awarded yet, beyond 2003
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
25	**Complete Remedial Investigation**	Jun-2001			Delayed due to delays in getting access to the site during the RI, delays in BTAG review of the RI report, and need to take additional samples to characterize the site. Contract negotiated - award pending.
	Complete Draft RI WP	May-2000		May-2000	
	Complete Final RI WP	Aug-2000		Jul-2000	
	Complete Draft RI		N/A		
	Complete Draft Final RI	Feb-2001		Jul-2001	
	Complete Final RI	Jun-2001	Jun-2002		
	Complete Proposed Plan	Jan-2003			Delayed due to delay in completing RI report (see above)
	Complete Draft PP	Aug-2002			
	Complete Draft Final PP	Oct-2002			
	Complete Final PP	Jan-2003			
	Complete Remedial Design				
	Award Remedial Design	Dec-2003			Not awarded yet, beyond 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
6	**Complete Remedial Investigation**	Mar-2002	May-2002		Delayed due to delays in getting access to the site during the RI, and delays in EPA toxicologist's review of the HHRA interim deliverables.
	Complete Draft RI WP	Feb-2001		Dec-2000	
	Complete Final RI WP	May-2001		Mar-2001	
	Complete Draft RI	Nov-2001	N/A	Jul-2002	
	Complete Draft Final RI	Jan-2002	Feb-2002		
	Complete Final RI	Mar-2002	May-2002		
	Complete Feasibility Study	Nov-2002	Jan-2003		Delayed due to delay in completing RI report (see above)
	Award FS-ROD				
	Complete Draft FS	Jul-2002	Aug-2002		
	Complete Draft Final FS	Sep-2002	Nov-2002		
	Complete Final FS	Nov-2002	Jan-2003		
	Complete Proposed Plans	May-2003	Aug-2003		Delayed due to delay in completing RI report (see above)
	Complete Draft PP	Jan-2003	Mar-2003		
	Complete Draft Final PP	Mar-2003	Jun-2003		
	Complete Final PP	May-2003	Aug-2003		

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SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
	Complete ROD	Dec-2003	Mar-2004		Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Aug-2003	Nov-2003		
	Complete Draft Final ROD	Oct-2003	Jan-2004		
	ROD Signed	Dec-2003	Mar-2004		
	Complete Remedial Design				
	Award Remedial Design				Not awarded, beyond FY 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not awarded, beyond FY 2003
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
39	**Complete Remedial Investigation**	Mar-2002	May-2002		Delayed due to delays in getting access to the site during the RI, and delays in EPA toxicologist's review of the HHRA interim deliverables.
	Complete Draft RI WP	Feb-2001		Dec-2000	
	Complete Final RI WP	May-2001		Mar-2001	
	Complete Draft RI	Nov-2001	N/A	Jul-2002	
	Complete Draft Final RI	Jan-2002	Feb-2002		
	Complete Final RI	Mar-2002	May-2002		
	Complete Feasibility Study	Nov-2002	Jan-2003		Delayed due to delay in completing RI report (see above)
	Award FS-ROD				
	Complete Draft FS	Jul-2002	Aug-2002		
	Complete Draft Final FS	Sep-2002	Nov-2002		
	Complete Final FS	Nov-2002	Jan-2003		
	Complete Proposed Plans	May-2003	Aug-2003		Delayed due to delay in completing RI report (see above)
	Complete Draft PP	Jan-2003	Mar-2003		
	Complete Draft Final PP	Mar-2003	Jun-2003		
	Complete Final PP	May-2003	Aug-2003		
	Complete ROD	Dec-2003	Mar-2004		Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Aug-2003	Nov-2003		
	Complete Draft Final ROD	Oct-2003	Jan-2004		
	ROD Signed	Dec-2003	Mar-2004		
	Complete Remedial Design				
	Award Remedial Design				Not awarded, beyond FY 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not awarded, beyond FY 2003
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
45	**Complete Remedial Investigation**	Mar-2002	May-2002		Delayed due to delays in getting access to the site during the RI, and delays in EPA toxicologist's review of the HHRA interim deliverables.
	Complete Draft RI WP	Feb-2001		Dec-2000	
	Complete Final RI WP	May-2001		Mar-2001	
	Complete Draft RI	Nov-2001	N/A	Jul-2002	
	Complete Draft Final RI	Jan-2002	Feb-2002		
	Complete Final RI	Mar-2002	May-2002		
	Complete Feasibility Study	Nov-2002	Jan-2003		Delayed due to delay in completing RI report (see above)
	Award FS-ROD				
	Complete Draft FS	Jul-2002	Aug-2002		
	Complete Draft Final FS	Sep-2002	Nov-2002		
	Complete Final FS	Nov-2002	Jan-2003		
	Complete Proposed Plans	May-2003	Aug-2003		Delayed due to delay in completing RI report (see above)
	Complete Draft PP	Jan-2003	Mar-2003		
	Complete Draft Final PP	Mar-2003	Jun-2003		
	Complete Final PP	May-2003	Aug-2003		
	Complete ROD	Dec-2003	Mar-2004		Delayed due to delay in completing RI report (see above)
	Complete Draft ROD	Aug-2003	Nov-2003		
	Complete Draft Final ROD	Oct-2003	Jan-2004		
	ROD Signed	Dec-2003	Mar-2004		

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SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
	Complete Remedial Design				
	Award Remedial Design				Not awarded, beyond FY 2003
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not awarded, beyond FY 2003
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
28	**Complete Remedial Investigation**				
	Award RI/FS	Dec-2002			Contract negotiated - award pending.
	Complete Draft Final RI WP	Dec-2002			
	Complete Final RI WP	Mar-2003			
	Complete Draft RI	N/A			
	Complete Draft Final RI	Jun-2003			
	Complete Final RI	Sep-2003			
	Complete Feasibility Study				
	Complete Draft FS				
	Complete Draft Final FS				
	Complete Final FS				
	Complete Proposed Plans				
	Award PP-ROD				
	Complete Draft PP				
	Complete Draft Final PP				
	Complete Final PP				
	Complete ROD				
	Complete Draft ROD				
	Complete Draft Final ROD				
	ROD Signed				
	Complete Remedial Design	Mar-2005			
	Award Remedial Design	Mar-2004			Not yet awarded
	Complete 65% RD				
	Complete 100% RD				
	Complete Final Remedial Design				
	Complete Remedial Action				
	Award Remedial Action				Not yet awarded
	Complete Draft RA Work Plan				
	Complete Final RA Work Plan				
	Start Construction				
	Complete Construction				
	Complete PCAS				
	Complete LUCIP/LTMP				
	Implement LUCIP				
	Implement LTMP				
AOCs (IH & SN)	**Complete Desk-Top Audit**	Dec-2001			Desktop audit completed for 28 AOCs, leading to no action decision for 17
	Conduct Desk-Top Audit	Nov-2001		Nov-2001	
	Complete Draft Final Decision Document	Oct-2001		Dec-2001	
	Complete Final Decision Document	Dec-2001		Jan-2002	
	Sign Final Decision Document	Apr-2002		Apr-2002	On time!
5	**Complete Site Screening Process**				
	Complete Draft SSA Report	N/A		Dec-2001	
	Complete Draft Final SSA Report	Dec-2001	Apr-2002		Delayed due to need for additional sampling to characterize site Contract mod in process.
	Complete Final SSA Report	May-2001			
	Complete Draft Final Decision Document				
	Complete Final Decision Document				
32, 33, 34, 36, 37, 51, 52	**Complete Site Screening Process**				
	Award SSA	Jul-2001		Jul-2001	
	Complete Final SSI Work Plan	Sep-2001		Dec-2001	
	Complete Draft SSA Report			Jun-2002	
	Complete Draft Final SSA Report				
	Complete Final SSA Report				
	Complete Draft Final Decision Document				
	Complete Final Decision Document				

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SCHEDULE FOR FY 02 AND FY 03
IHDIV-NSWC, INDIAN HEAD, MARYLAND

SITE	GOAL	PLANNED DATE	REVISED DATE	ACTUAL DATE	COMMENTS (Success stories in blue)
SWMUs 13, 14, 28, 29	**Complete Site Screening Process**				*Not yet awarded - Potential swing project, but probably will not be funded until after FY07*
	Award SSA Work Plan	*Jun-2002*			
	Complete Draft SSA Work Plan				
	Complete Draft Final SSA Work Plan				
	Complete Final SSA Work Plan				
	Complete Draft SSA Report				
	Complete Draft Final SSA Report				
	Complete Final SSA Report				
	Complete Draft Final Decision Document				
	Complete Final Decision Document				
Mattawoman Creek	**Complete Ecological Risk Assessment**	*Aug-2002*	*Nov-2002*		*Extended review by BTAG including several discussions to resolve differences; incorporation of SPAWAR screening data; technical issues with analytical data extended lab time*
	Complete Draft ERA Report	*Feb-2002*	*Jul-2002*		
	Complete Draft Final ERA Report	*May-2002*	*Dec-2002*		
	Complete Final ERA Report	*Aug-2002*	*Apr-2003*		
ALL Sites	**Basewide Background Study**				*Reached closure on lingering background study issues EPA reviewing approach in draft report.*
	Complete Draft Background Report	*Dec-2001*	*Jan-2002*	*Feb-2002*	
	Complete Final Background Report	*Dec-2001*	*Mar-2002*		
	Update Site Management Plan	*Dec-2002*	*Mar-2002*		*Evaluated Workload Management Tool and decided to revise format to better suit the team's needs.*
	Complete Draft SMP	*Oct-2001*	*Feb-2002*	*Mar-2002*	
	Complete Final SMP	*Dec-2001*	*Mar-2002*		
	Finalize FFA	*Feb-2001*		*Mar-2002*	*Actual effective date March 27, 2002*
	Update Community Relations Plan		*Mar-2002*		*On-going*
	Complete Draft CRP Update	*Apr-2002*		*Apr-2002*	
	Complete Draft Final CRP Update			*Aug-2002*	
	Complete Final CRP Update		*Dec-2002*		
	Update IHIRT Documents				*On-going*

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TtNUS, 2001. Feasibility Study Report, Site 12- Town Gut Landfill, Site 41 – Scrap Yard, Indian Head Division, Naval Surface Warfare Center, Indian Head, Maryland, January.

TtNUS, 2002. Site Screening Process Report for Site 32 - Suspected Tool Burial, Site 33 - Scrap Metal Pit, Site 34 - Tool Burial, Site 36 - Closed Landfill, Site 37 - Causeway, Site 57 - Building 101 Dry Well, and Site 52 - Building 102 Dry Well, Indian Head Division, Naval Surface Warfare Center, Indian Head, Maryland, June.

USN/EPA (U.S. Department of the Navy/U.S. Environmental Protection Agency Region III), 2000. Federal Facilities Agreement Under CERCLA Section 120, Administrative Docket Number: III-FCA-CERC-018, December 9.

APPENDIX A

IHDIV - MAIN AREA SITE FIGURES

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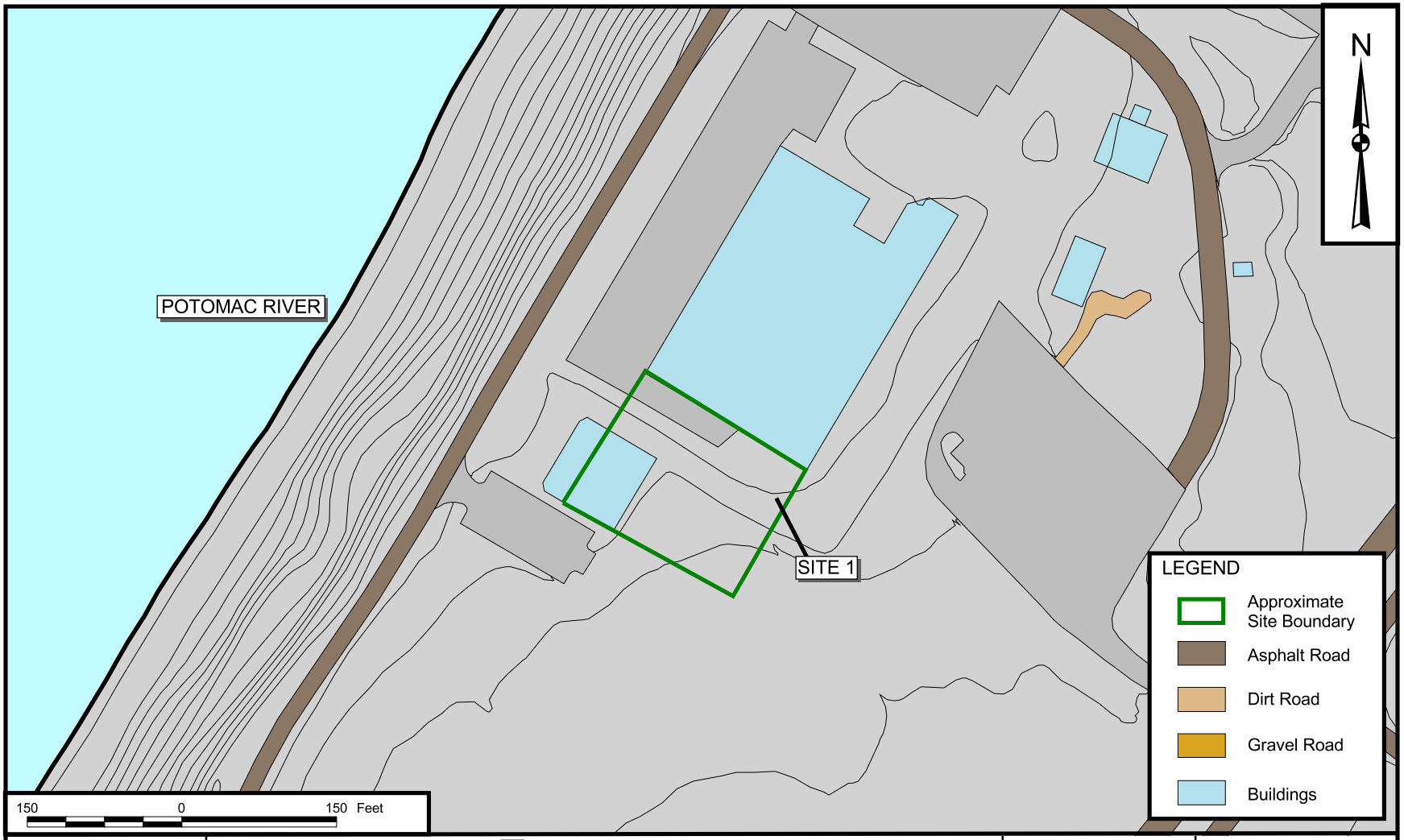
SITE KEY

1 Thorium Spill
2 Waste Crank Case Oil Applied to Torrence Road
3 Nitroglycerin Explosion, Nitration Building Area
4 Lloyd Road Oil Spill Sites
5 X-Ray Building 731
6 Building 1349, Hypo Spill
7 HMX Spill, Slurry Mix Building 682
8 Mercury Contamination From Building 766
9 Patterson Avenue Oil Spill
10 Single-base Propellant Grains Spill
11 Caffee Road Landfill
12 Town Gut Landfill
13 Paint Solvents Disposal Dumping Ground
14 Waste Acid Disposal Pit
15 Mercury Deposits in Manhole, Fluorine Lab
16 Laboratory Chemical Disposal
17 Disposed Metal Parts Along Shoreline
18 Hog Island
19 Catch Basin at Chip Collection House (1051)
20 Single-base Powder Facility
21 Bronson Road Landfill
22 NG Slums Burning Site
23 Hydraulic Oil Spill Discharges from Extrusion Plant
24 Abandoned Drain Lines
25 Hypo Discharge X-Ray Building No. 2
26 Thermal Destructor 2
27 Thermal Destructor 1
28 Original Burning Ground
29 The Valley
39 Organics Plant
40 Silver and Palladium Catalyst in Sediments
41 Scrap Yard
42 Olsen Road Landfill
43 Toluene Disposal Site
44 Soak Out Area
45 Abandoned Drums
46 Cadmium Sandblast Grit
47 Mercuric Nitrate Disposal Area
48 Nitroglycerine Plant Disposal Area
49 Chemical Disposal Pit
50 Building 103, Crawl Space
51/54 Building 101, Dry Well/Building 101
52/55 Building 102, Dry Well/Building 102
53 Mercury Contamination of the Sewage System
56 IW87 - Lead Contamination
57 TCE Building 292 Area

DRAWN BY: K. PEILA	DATE: 7/26/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019 / OWNER NUMBER: —
CHECKED BY: GJL	DATE: 7/26/02	SITE LOCATION MAP MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL / DATE: 8/8/02
COST/SCHEDULE-AREA			APPROVED BY: — / DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE A-1 / REV: 0



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 1 - THORIUM SPILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-2	REV: 0

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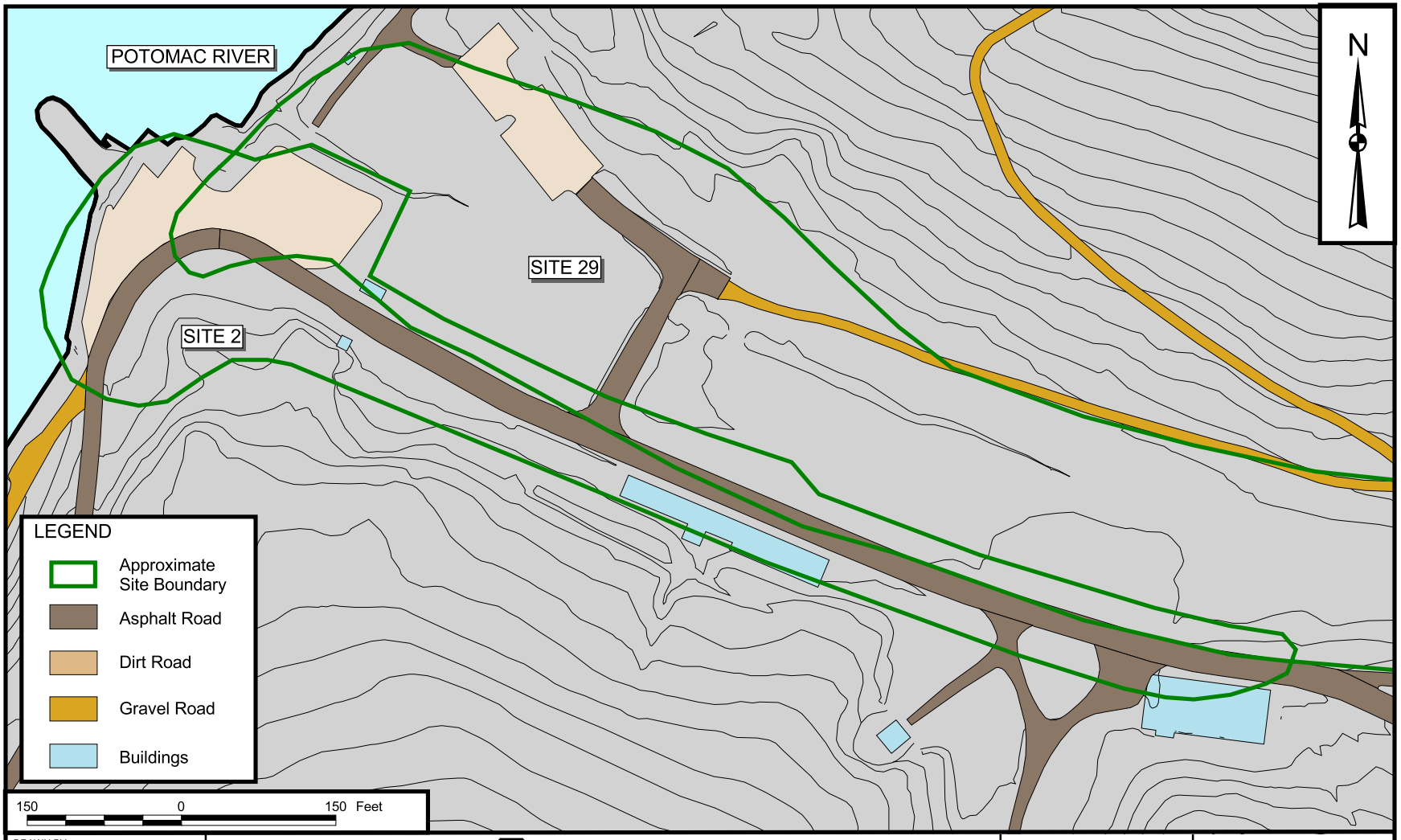
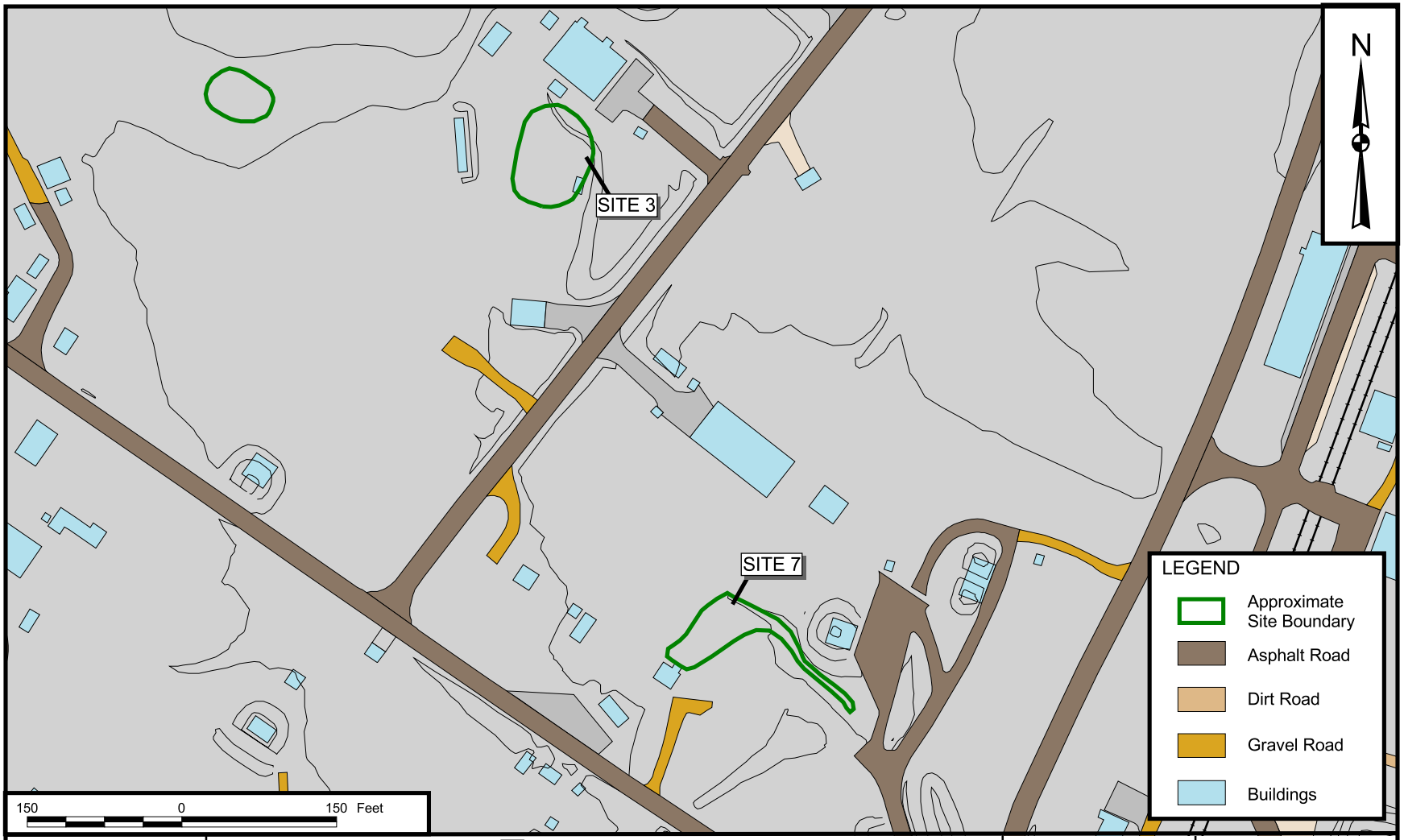


DRAWN BY K. PEILA	DATE 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER 4019 / OWNER NUMBER —
CHECKED BY GJL	DATE 8/7/02	SITE 2 - WASTE CRANK CASE OIL APPLIED TO TORRENCE ROAD AND SITE 29 - THE VALLEY MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY GJL / DATE 8/8/02
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE A-3 / REV 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SITE 02/SITE 29 8/8/02 KMP



DRAWN BY: K. PEILA	DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019 / OWNER NUMBER: —
CHECKED BY: GJL	DATE: 8/7/02	SITE 3 - NITRATION BUILDING AREA AND SITE 7 - HMX SPILL, SLURRY MIX BUILDING 682 MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL / DATE: 8/8/02
COST/SCHEDULE-AREA			APPROVED BY: — / DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE A-4 / REV: 0

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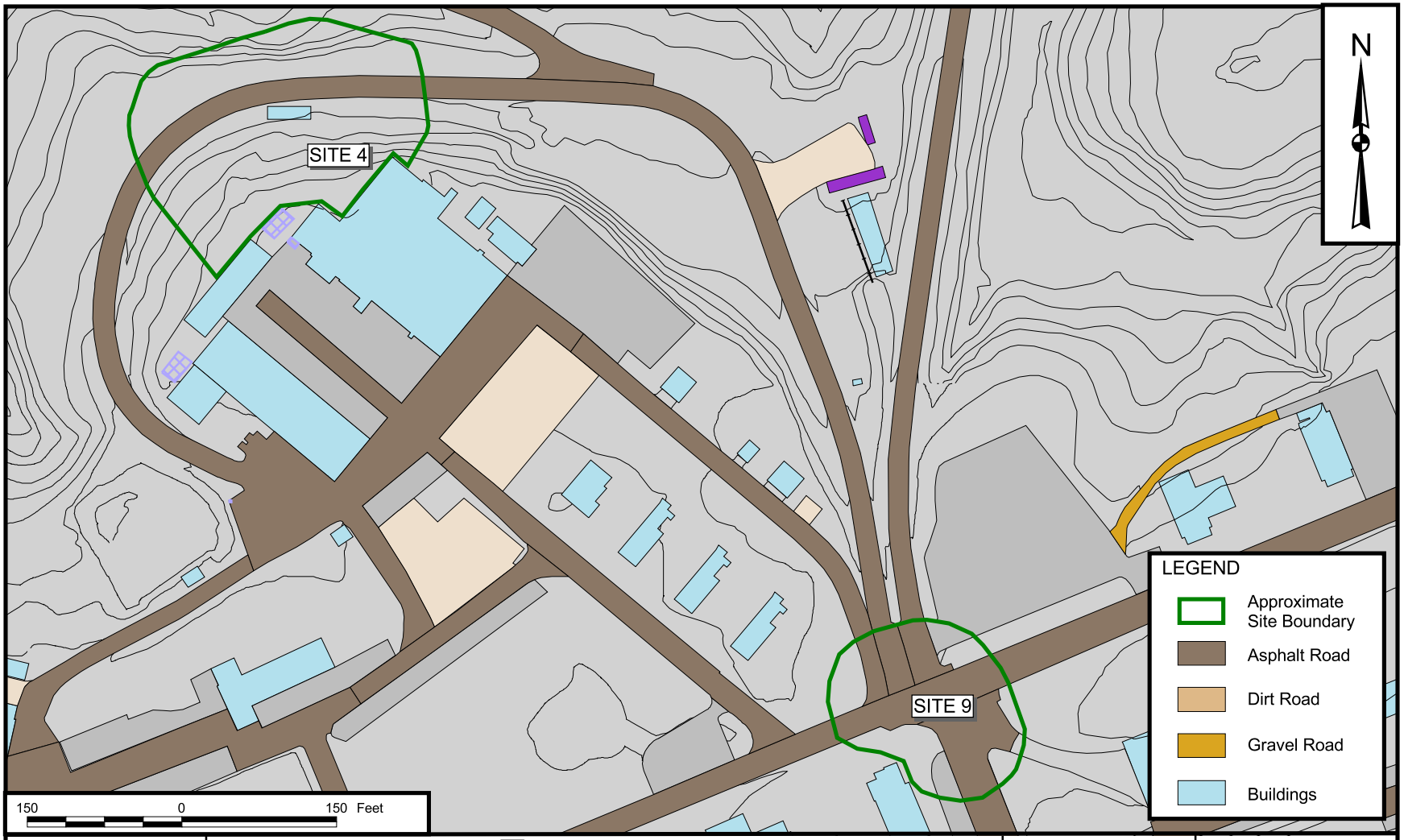

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 4 - LLOYD ROAD SPILL LINES AND PATTERSON AVENUE OIL SPILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-5	REV: 0

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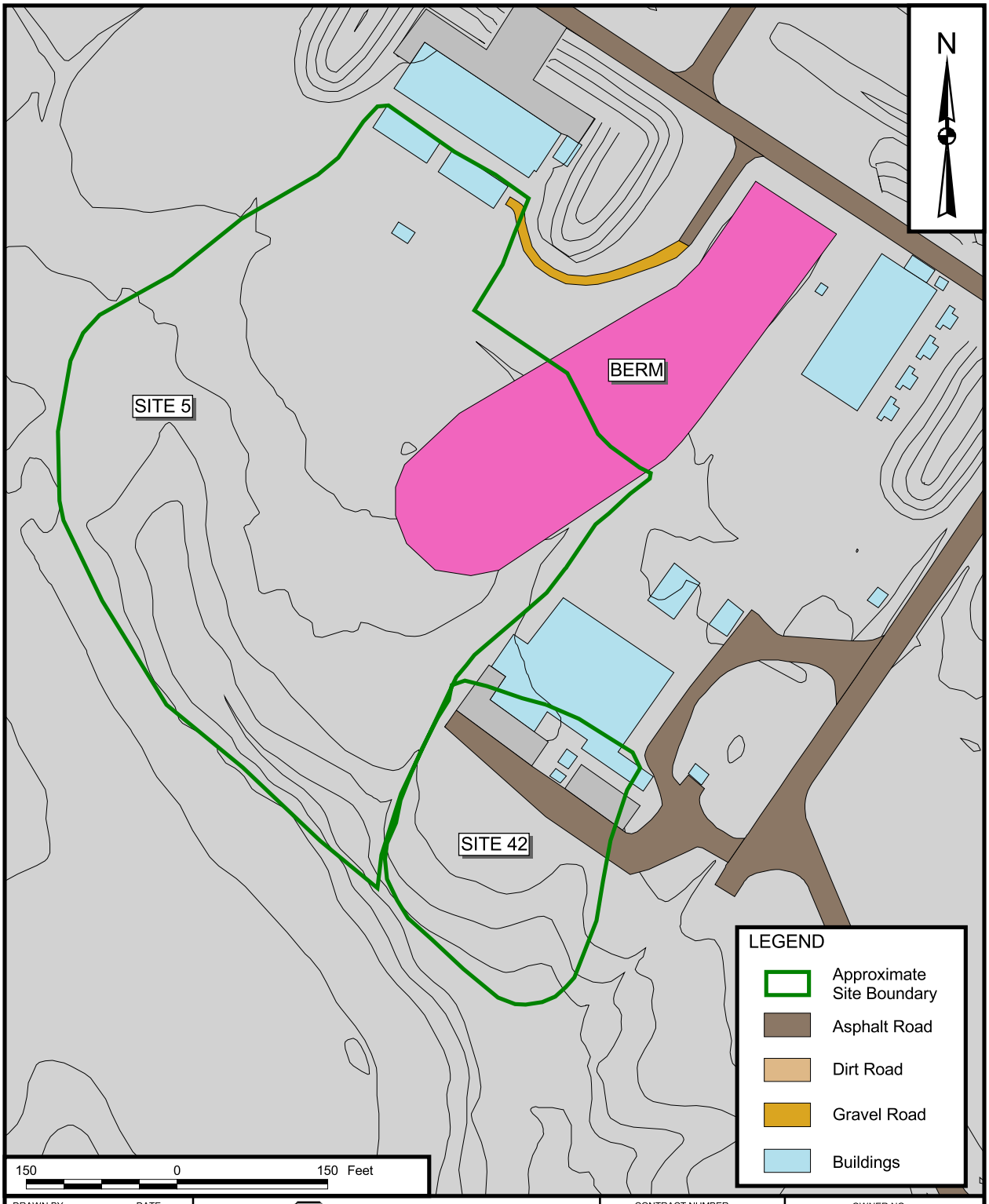

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 5 - X-RAY BUILDING 731 AND SITE 42 - OLSEN ROAD LANDFILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-6	REV: 0

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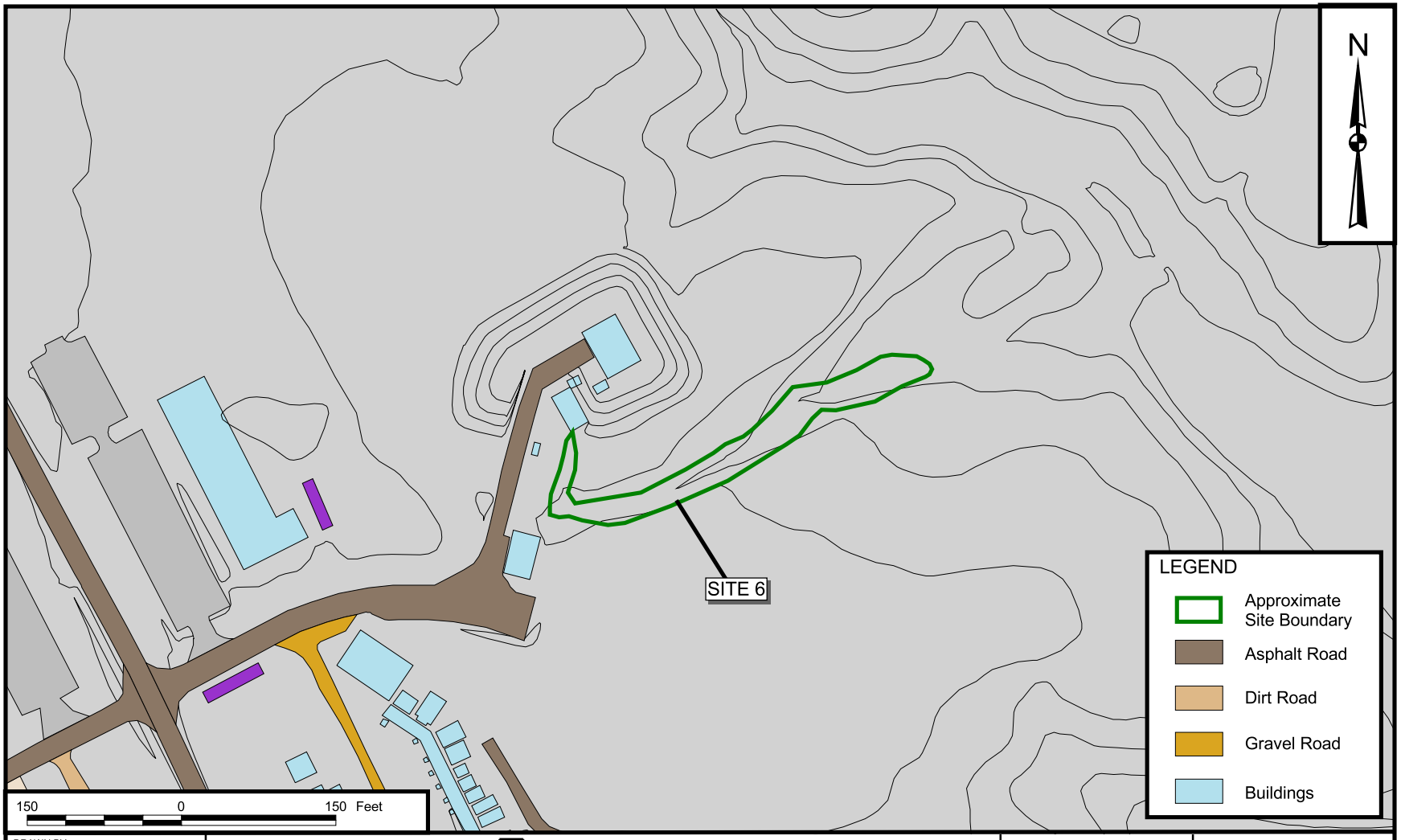

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 6 - BUILDING 1349, HYPO SPILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-7	REV: 0

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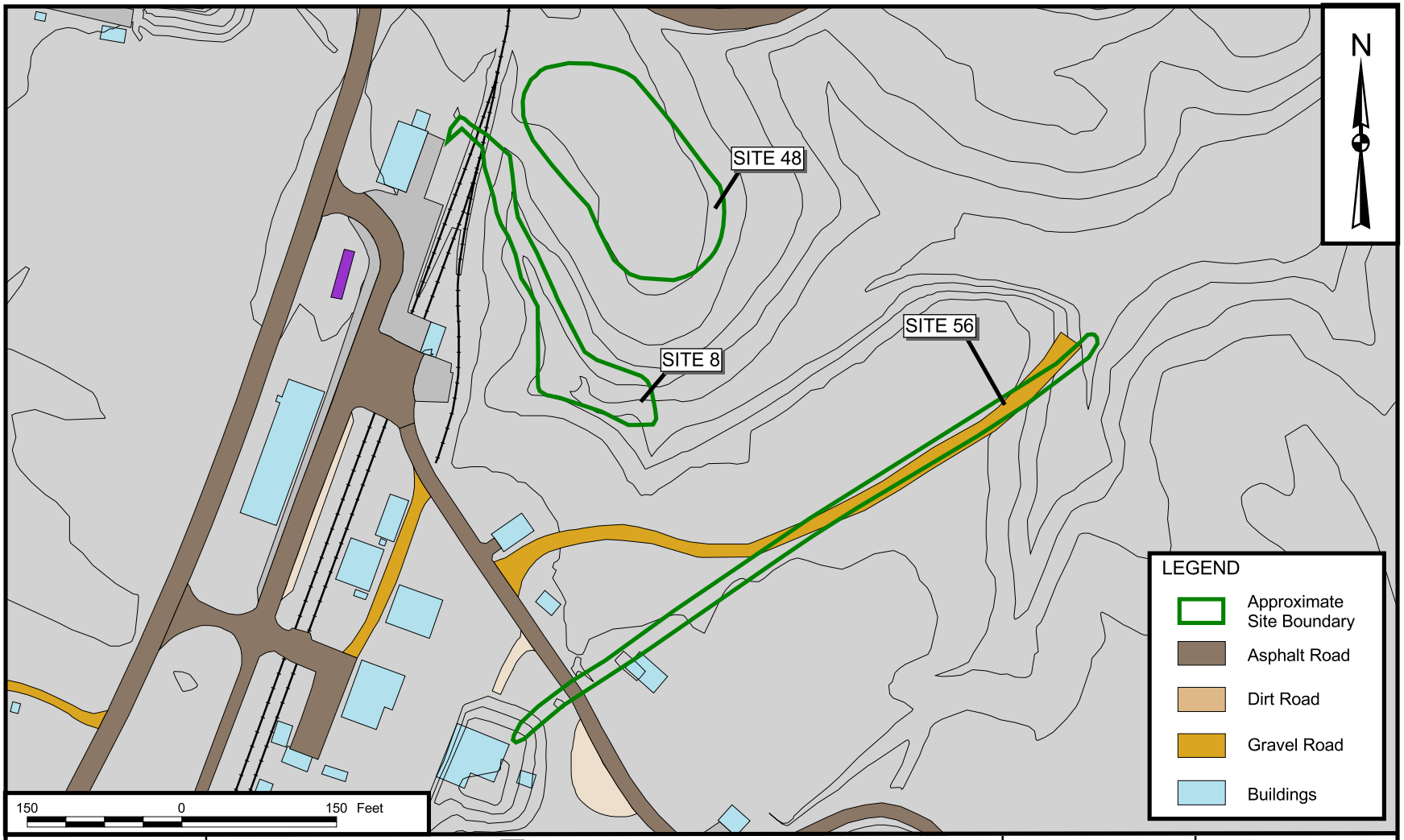

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 8 - MERCURY CONTAMINATION FROM BUILDING 766, SITE 48 - NITROGLYCERIN PLANT DISPOSAL AREA AND SITE 56 - IW87 - LEAD CONTAMINATION MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-8	REV: 0

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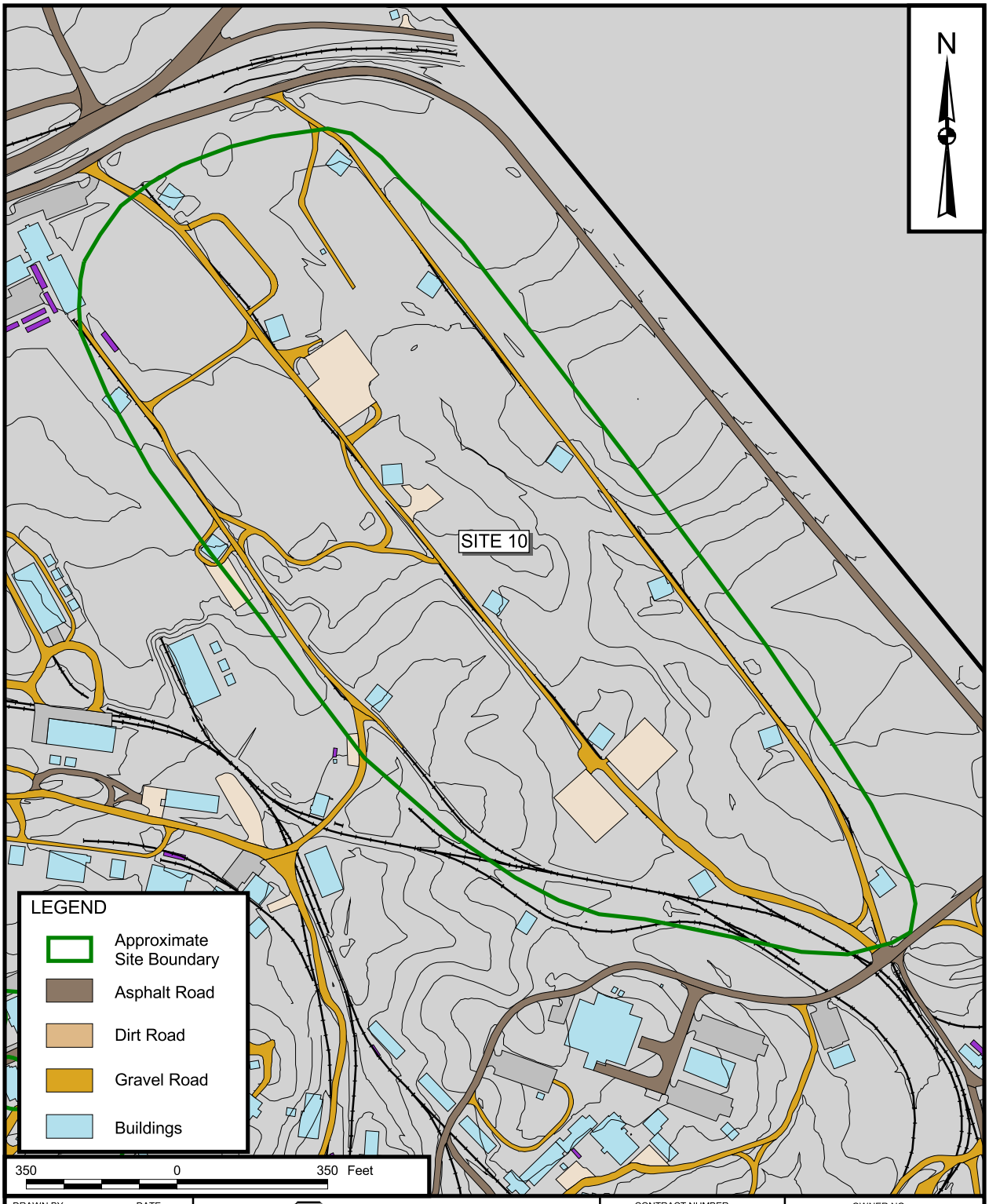

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 10 - SINGLE-BASE PROPELLANT GRAINS SPILL AREA MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-9	REV: 0

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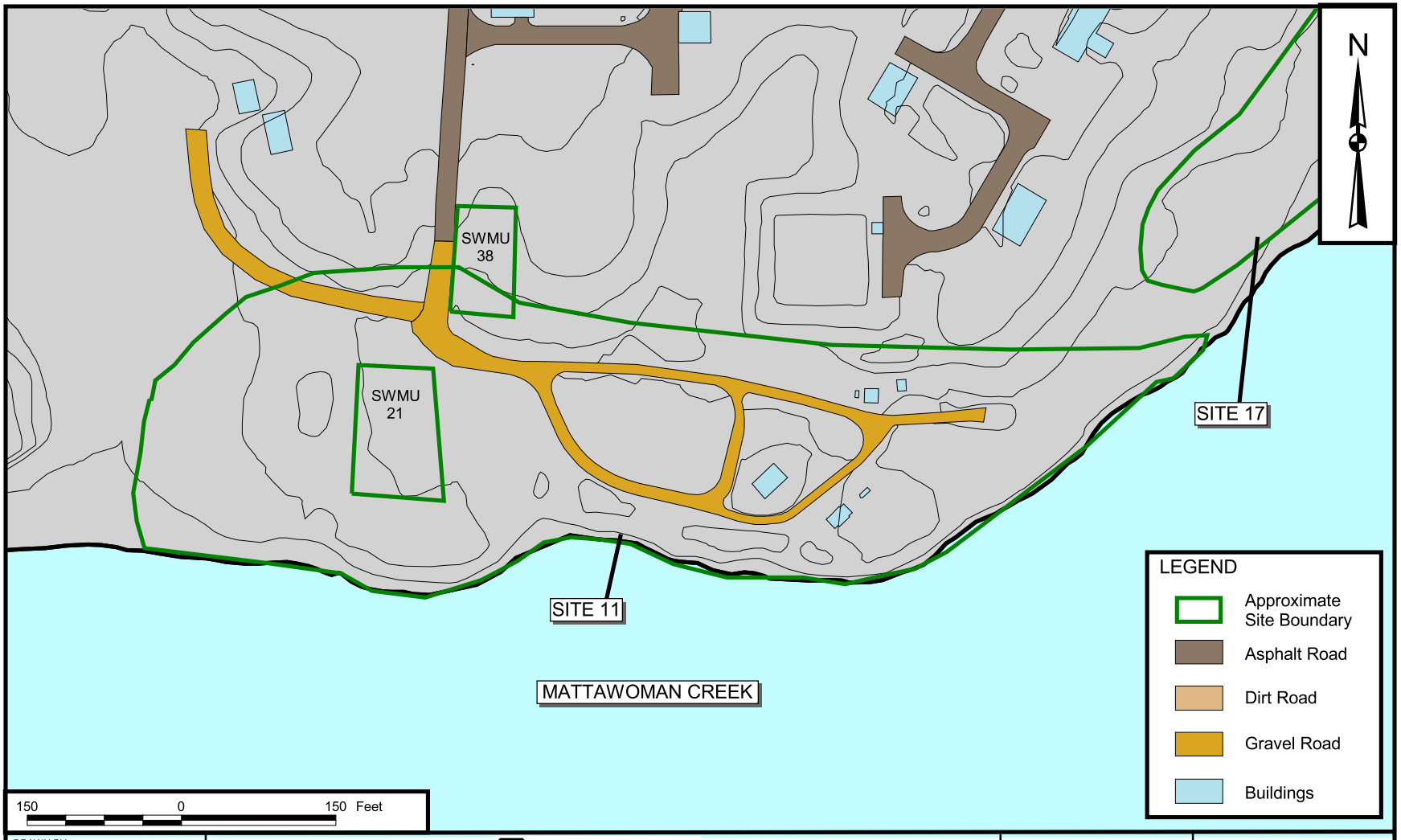

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 11 - CAFFEE ROAD LANDFILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-10	REV: 0

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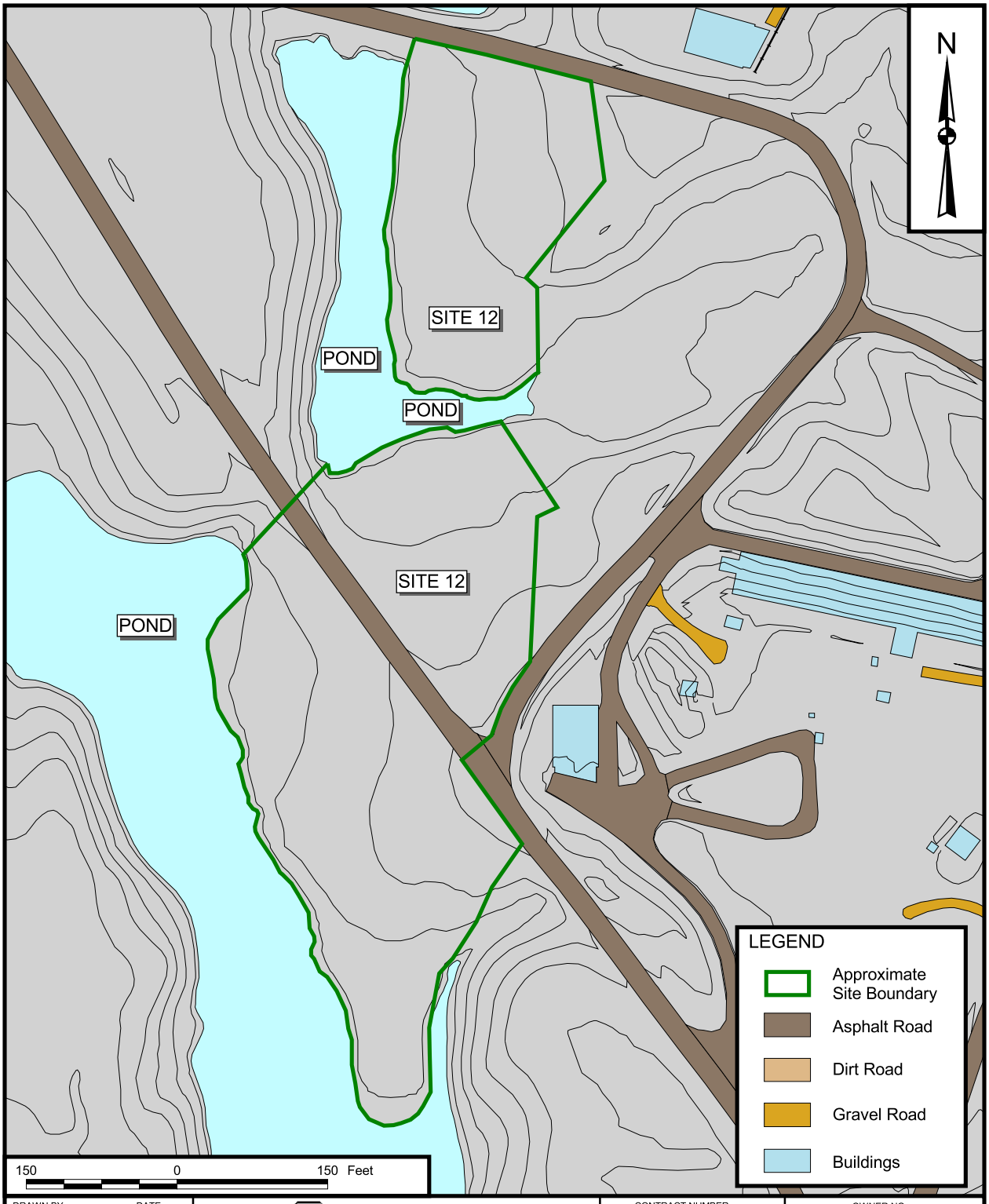

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 12 - TOWN GUT LANDFILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-11	REV: 0

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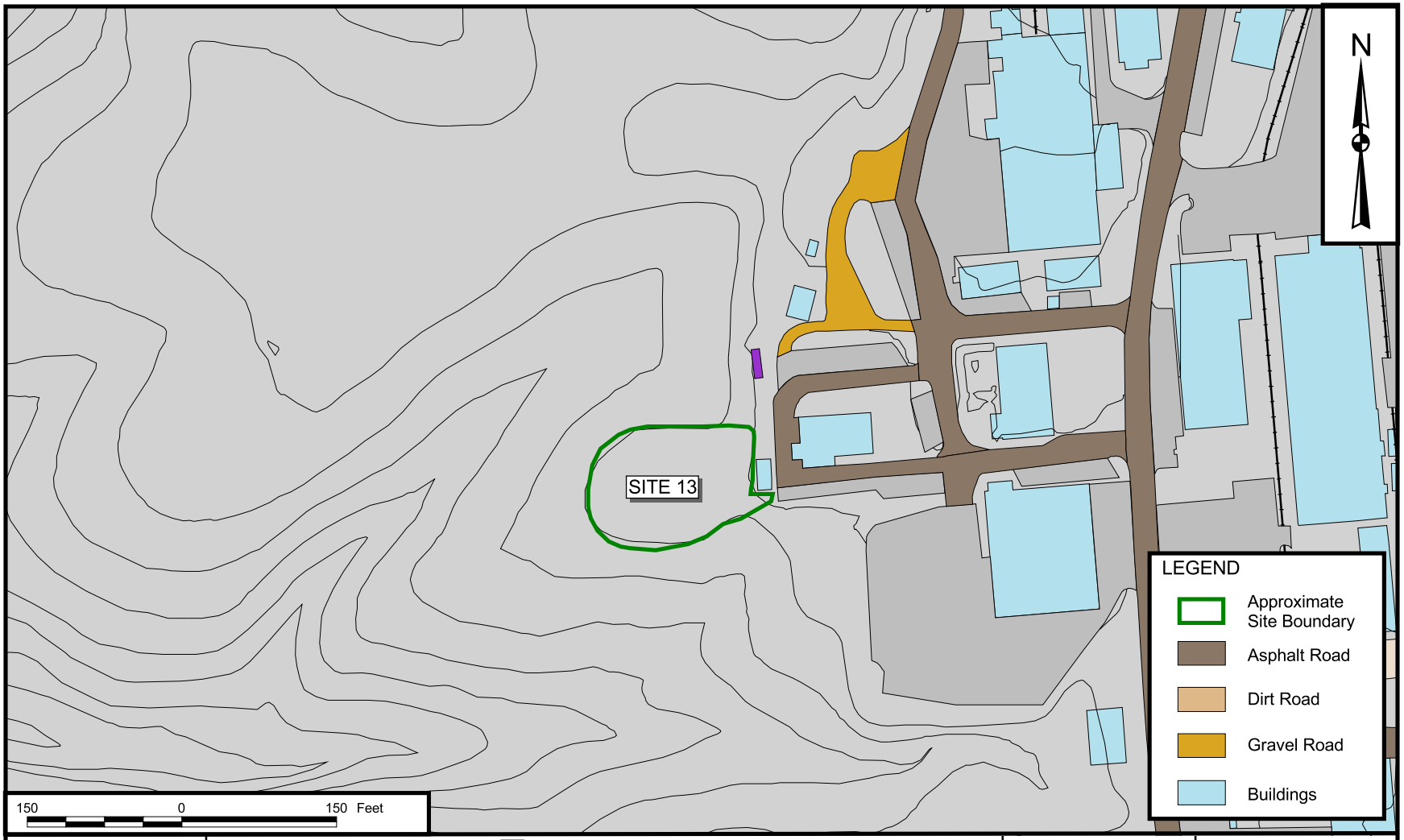

DRAWN BY: K. PEILA	DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019 / OWNER NUMBER: —
CHECKED BY: GJL	DATE: 8/7/02	SITE 13 - PAINT SOLVENTS DISPOSAL DUMPING GROUND MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL / DATE: 8/8/02
COST/SCHEDULE-AREA			APPROVED BY: — / DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE A-12 / REV: 0

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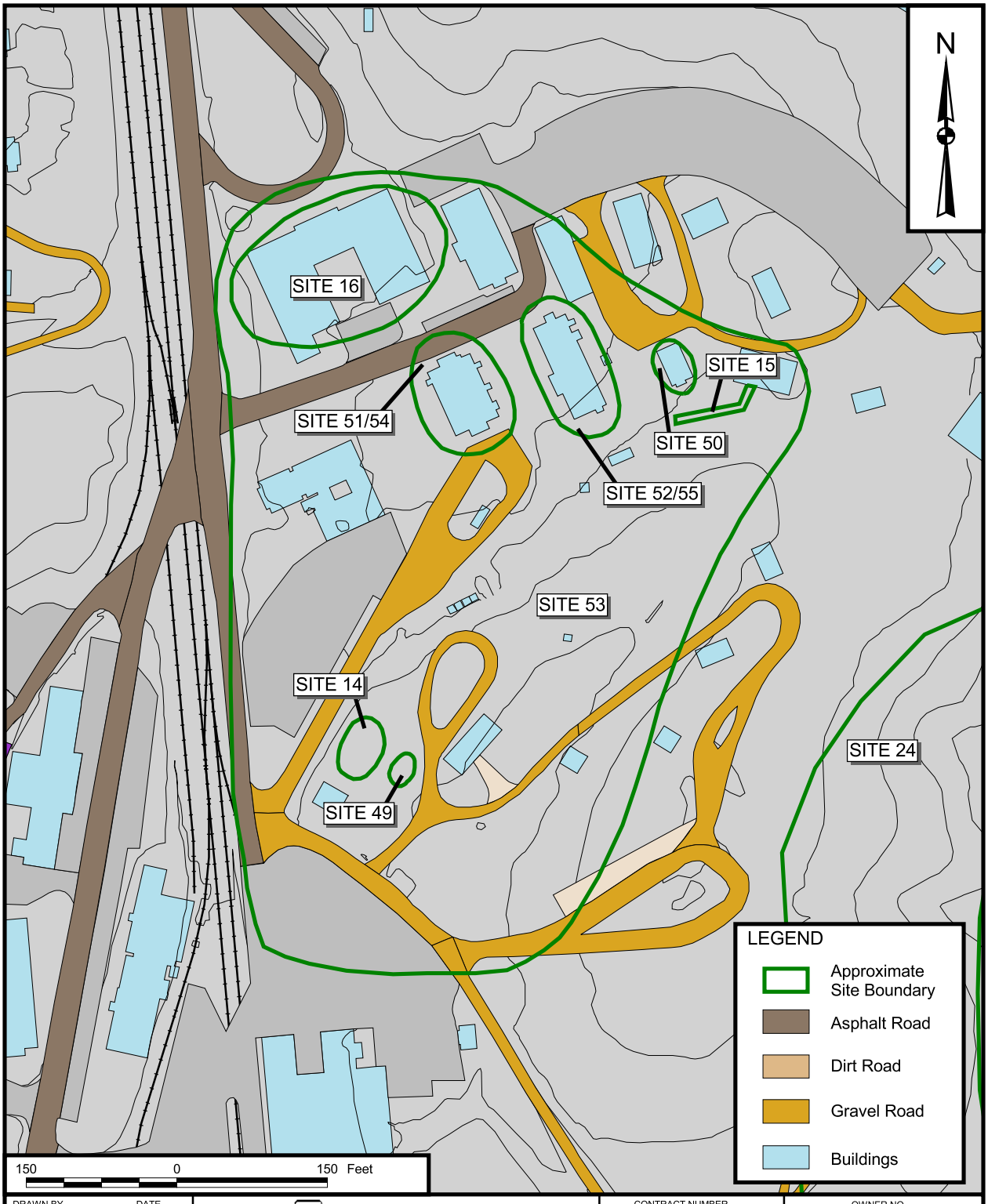

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITES 14, 15, 16, 49, 50, 51/54, 52/55 AND 53 MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-13	REV: 0

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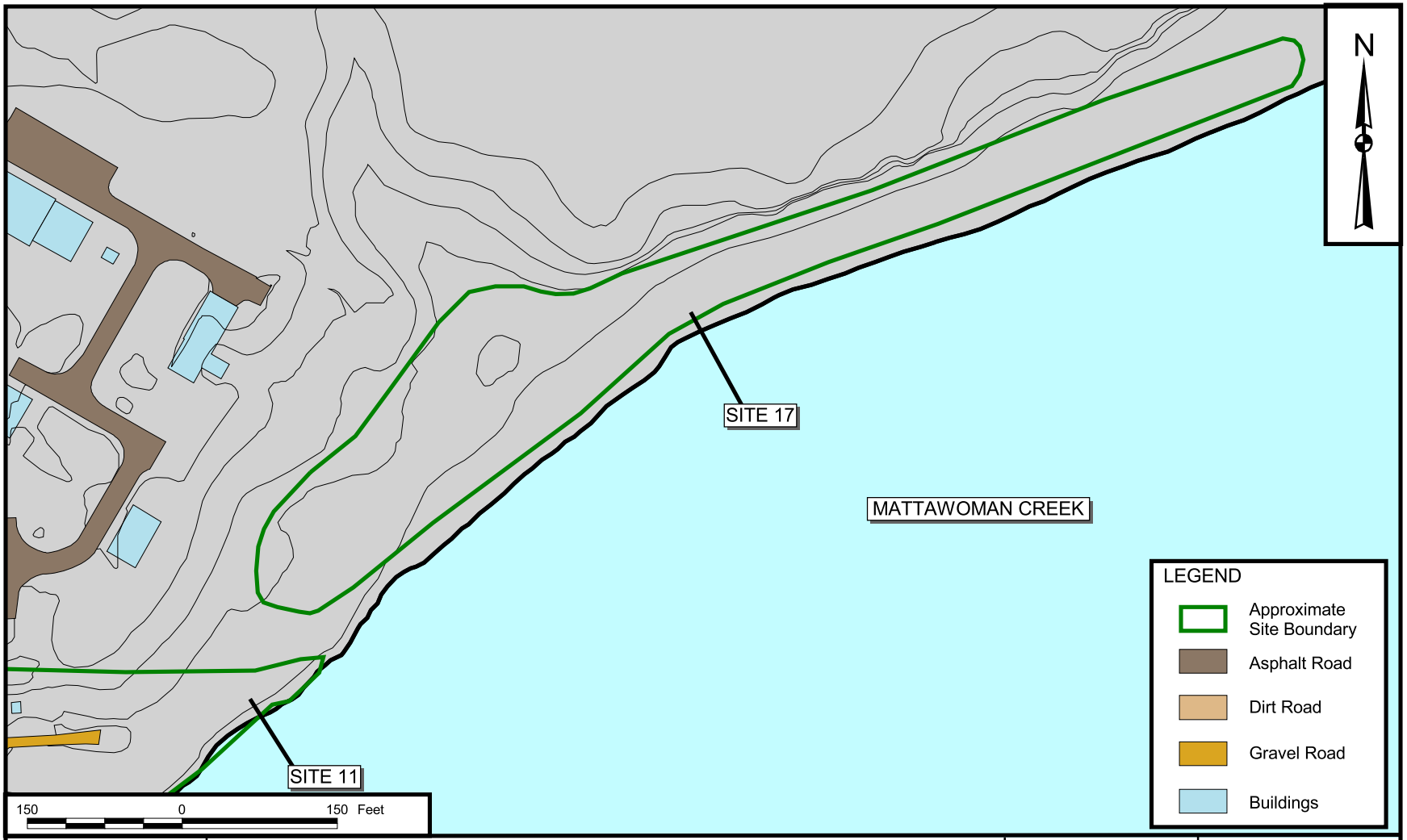
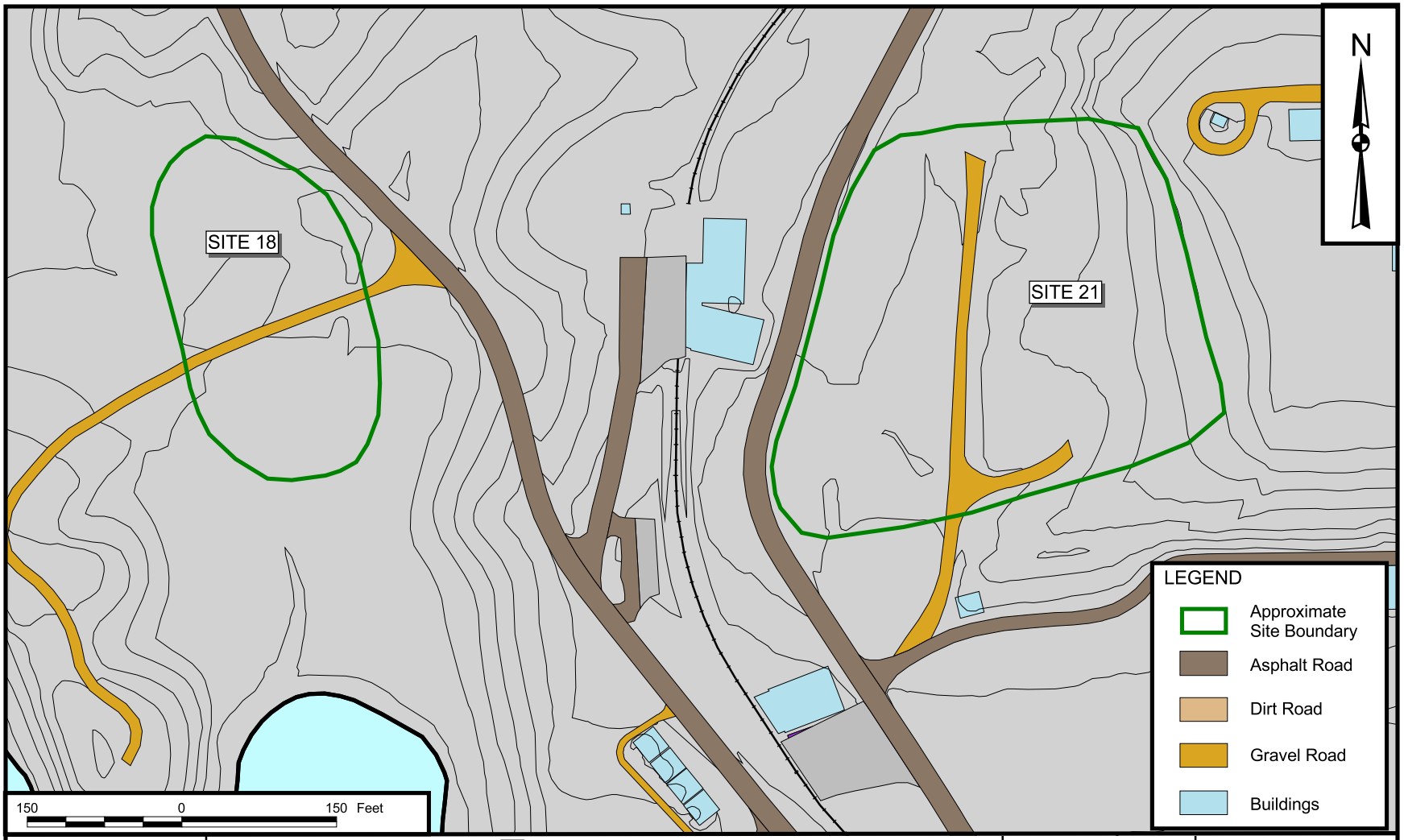


DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 17 - DISPOSED METAL PARTS ALONG SHORELINE MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-14	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SITE 17 8/8/02 KMP



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 18 - HOG ISLAND AND SITE 21 - BRONSON ROAD LANDFILL MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-15	REV: 0

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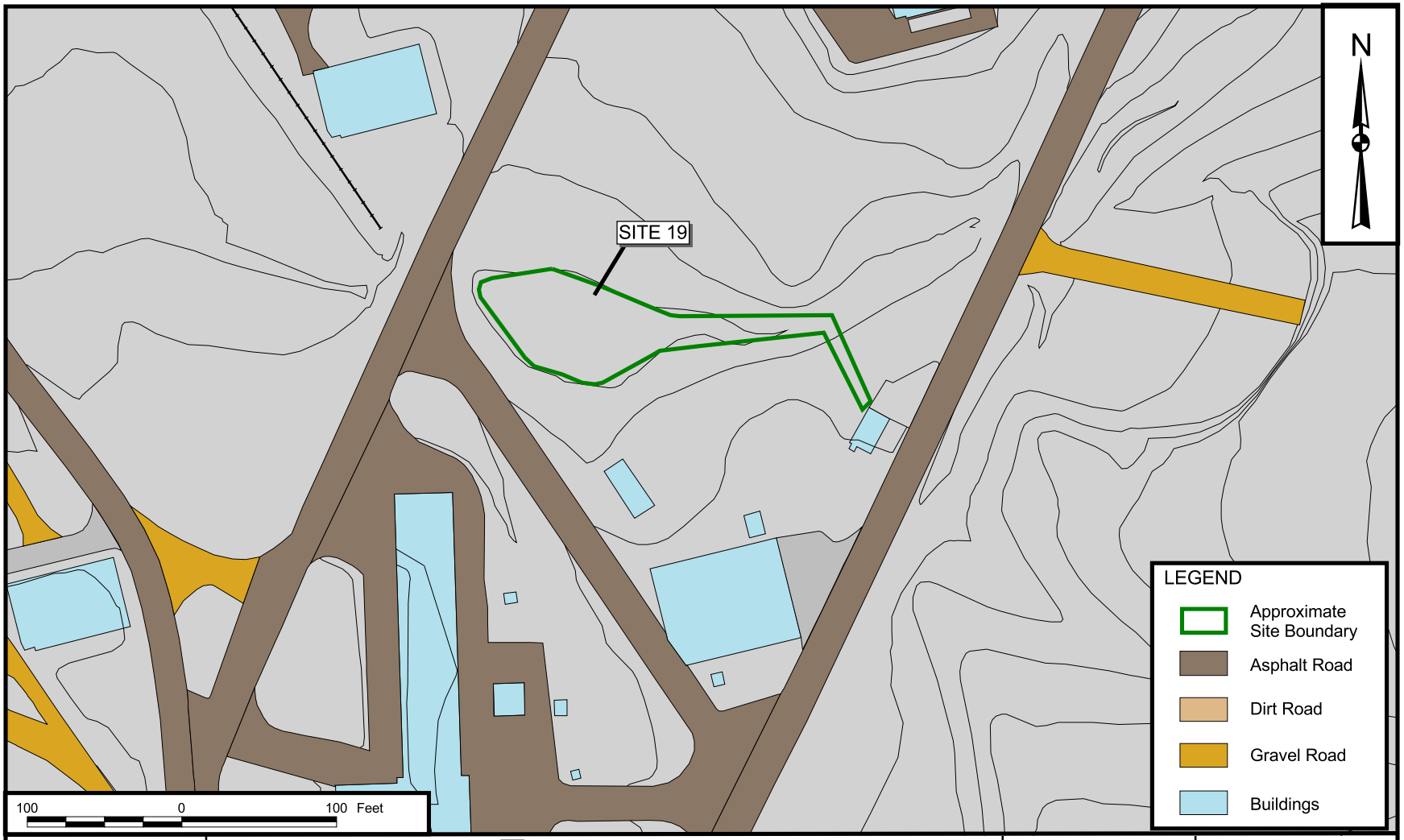

DRAWN BY: K. PEILA	DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019 / OWNER NUMBER: —
CHECKED BY: GJL	DATE: 8/7/02	SITE 19 - CATCH BASIN AT CHIP COLLECTION HOUSE (1051) MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL / DATE: 8/8/02
COST/SCHEDULE-AREA			APPROVED BY: — / DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE A-16 / REV: 0

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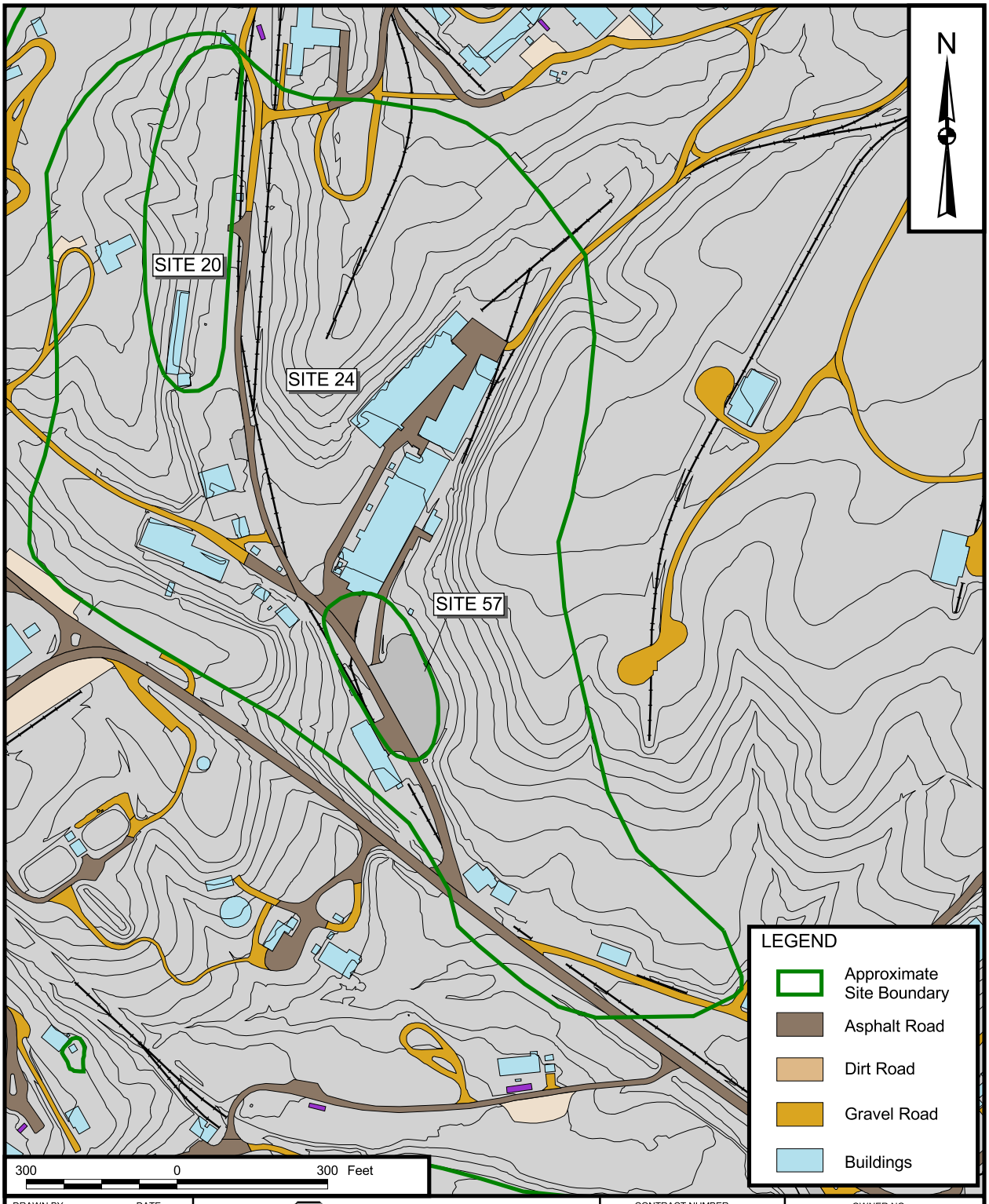

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 20 - SINGLE-BASED POWDER FACILITY, SITE 24 - ABANDONED DRAIN LINES AND SITE 57 - TCE BUILDING 292 AREA MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-17	REV: 0

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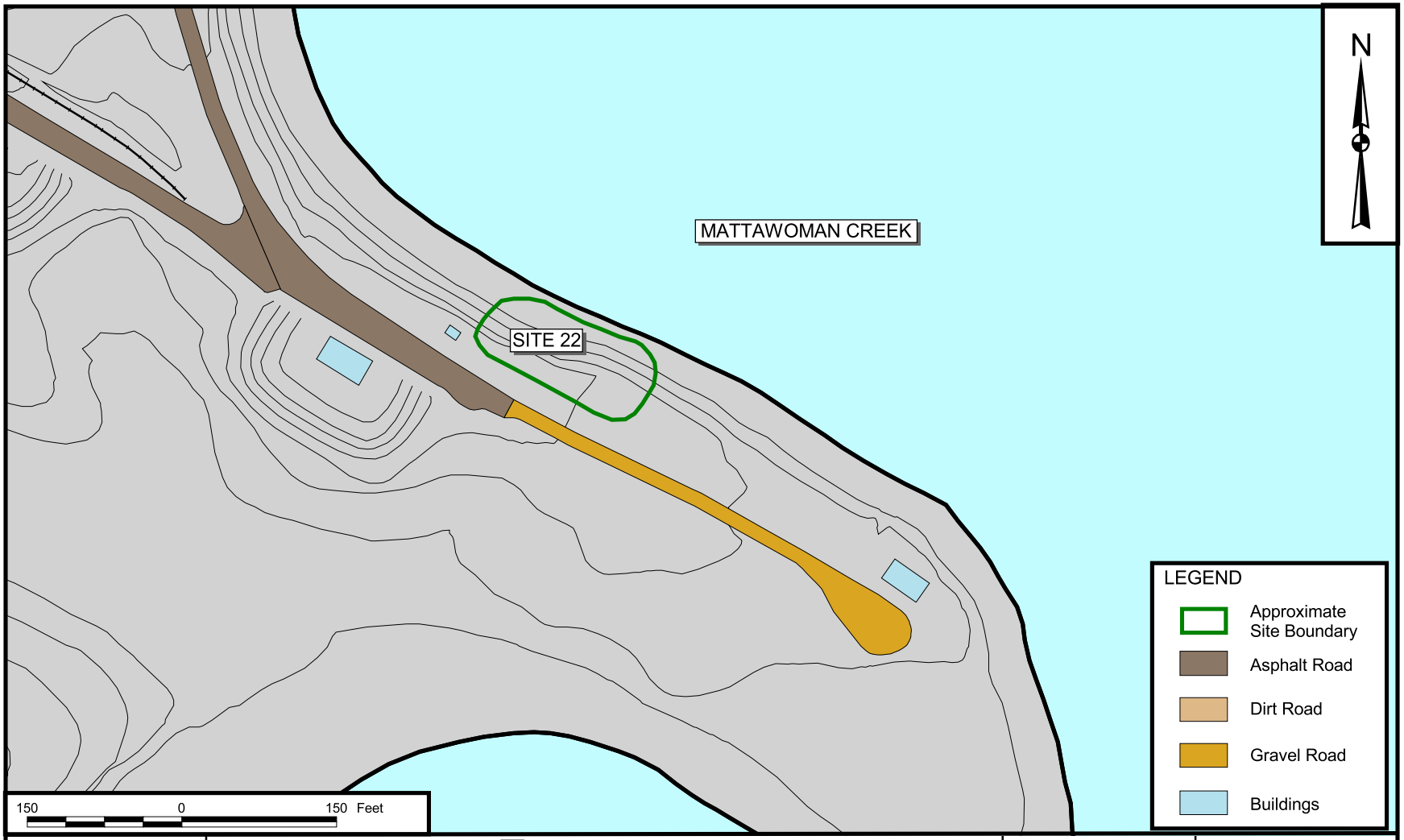

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 22 - NG SLUMS BURNING SITE MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-18	REV: 0

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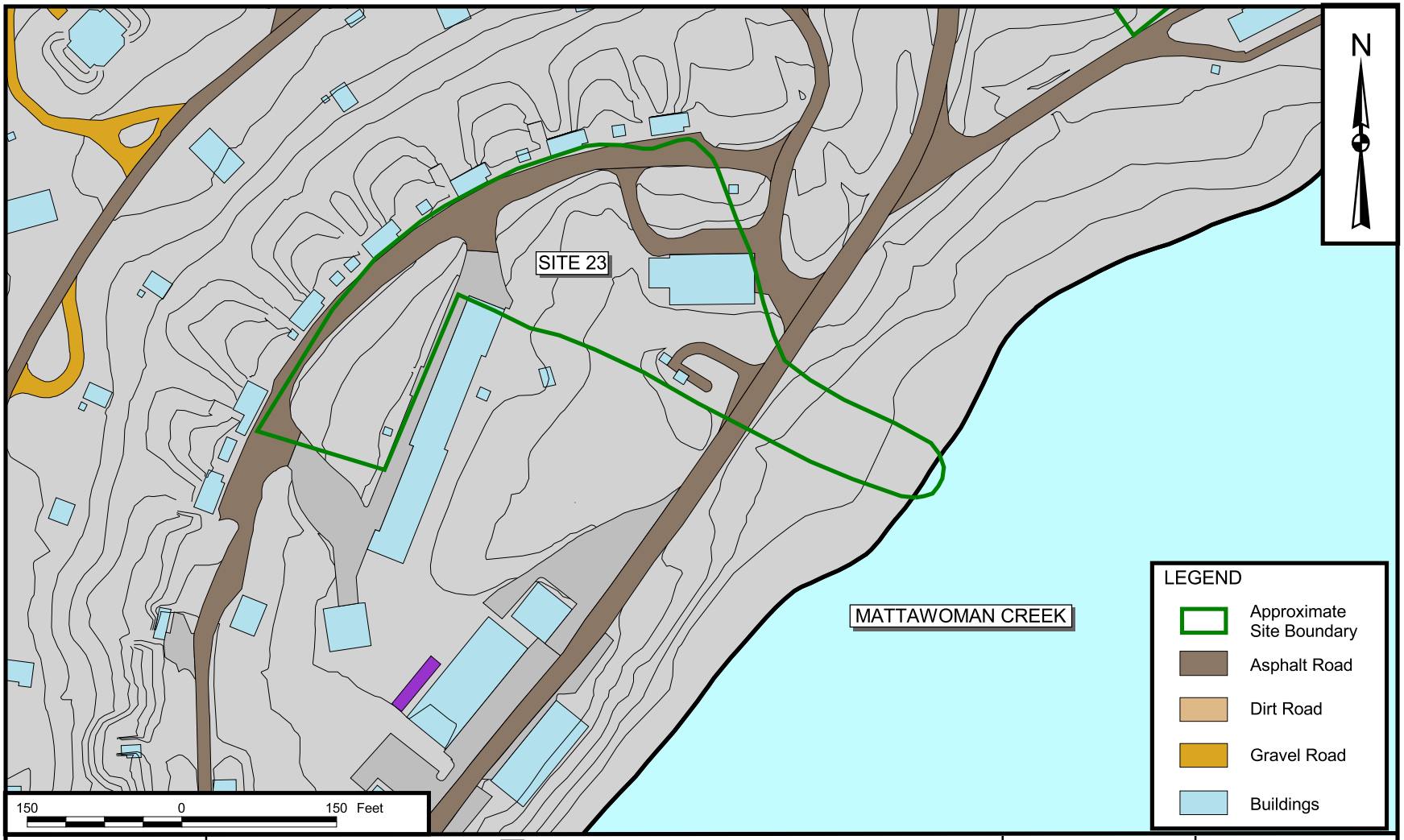

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 23 - HYDRAULIC OIL SPILL DISCHARGES FROM EXTRUSION PLANT MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-19	REV: 0

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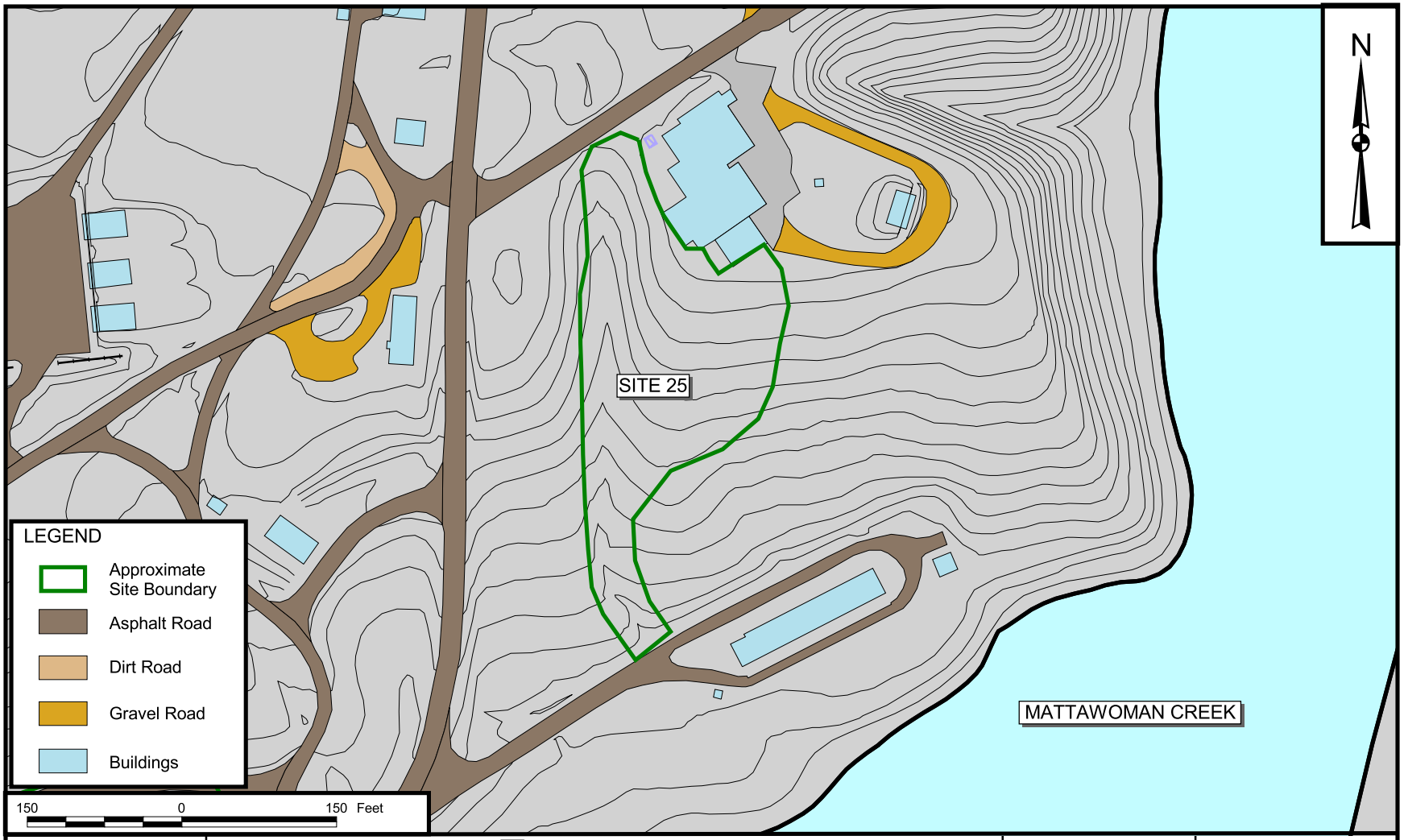

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 25 - HYPO DISCHARGE X-RAY BUILDING NO. 2 MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-20	REV: 0

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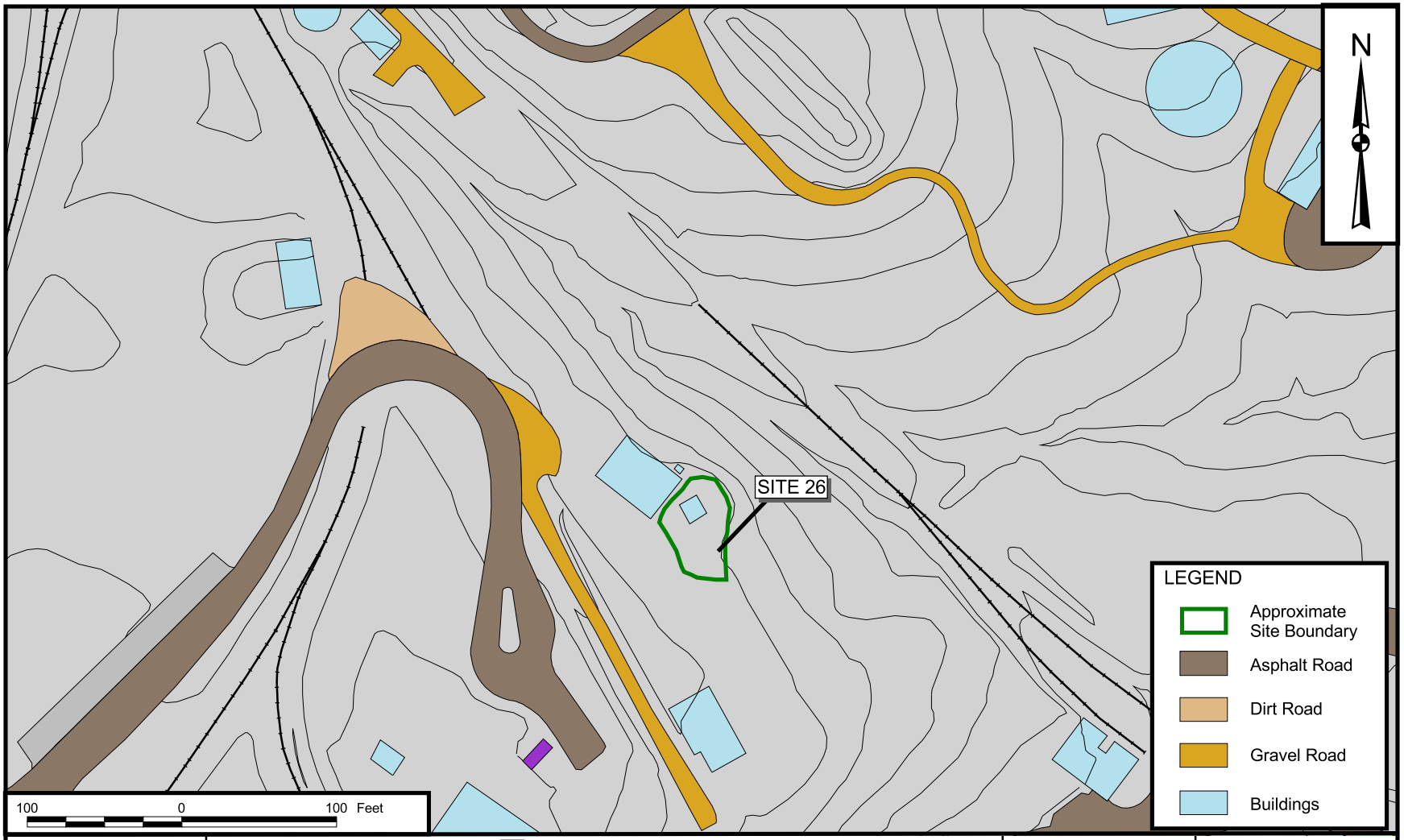

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 26 - THERMAL DESTRUCTOR 2 MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-21	REV: 0

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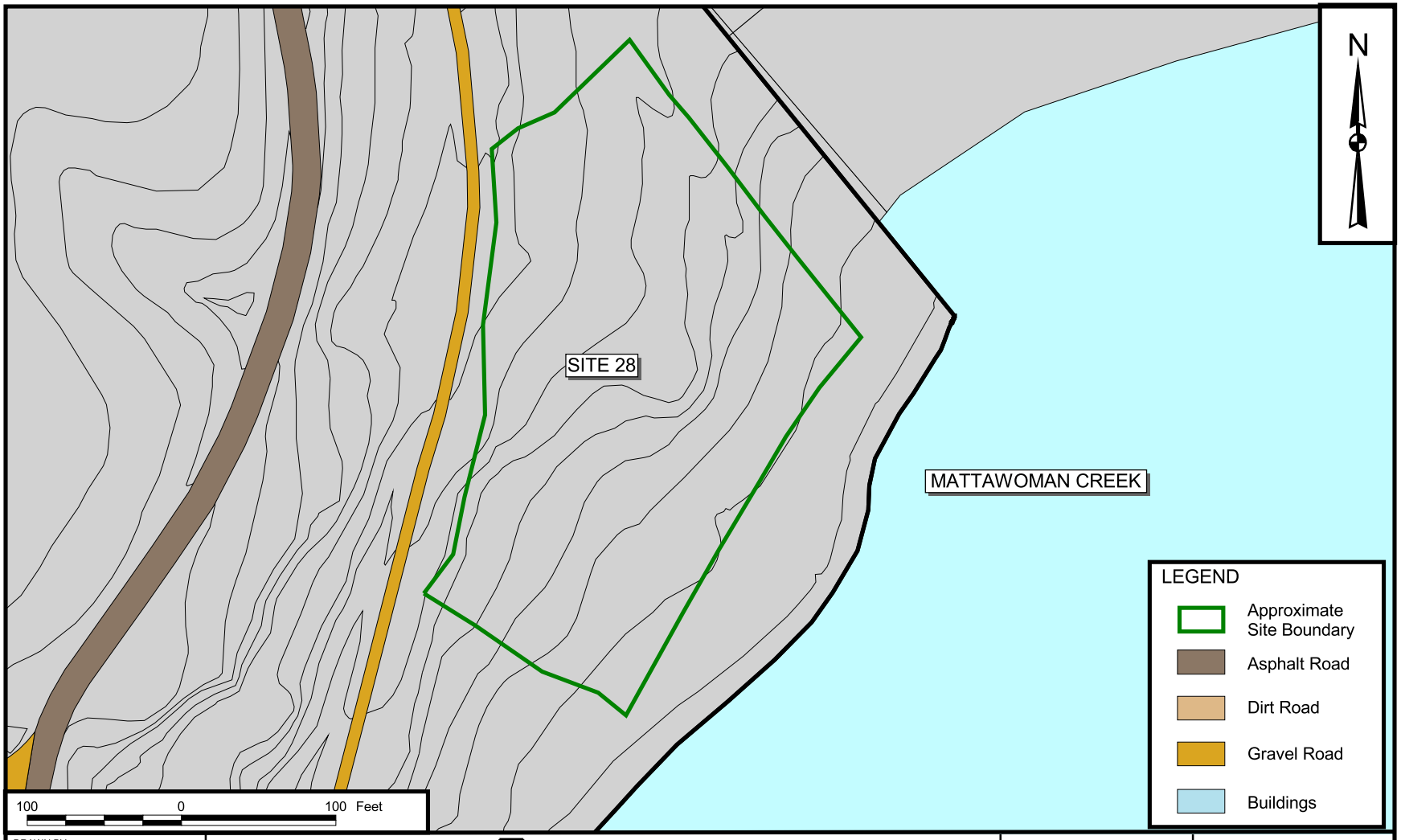

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 28 - ORIGINAL BURNING GROUND MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-22	REV: 0

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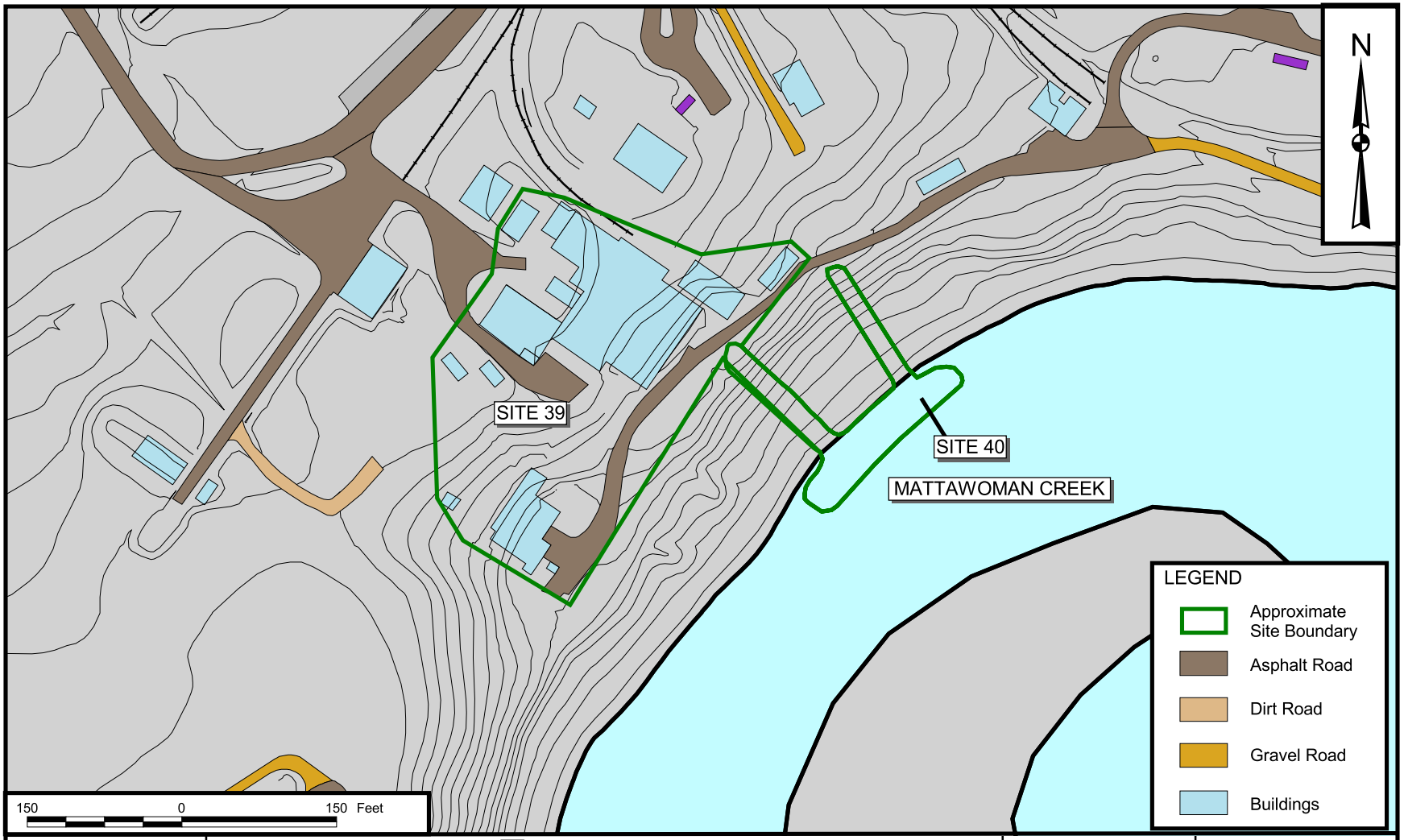
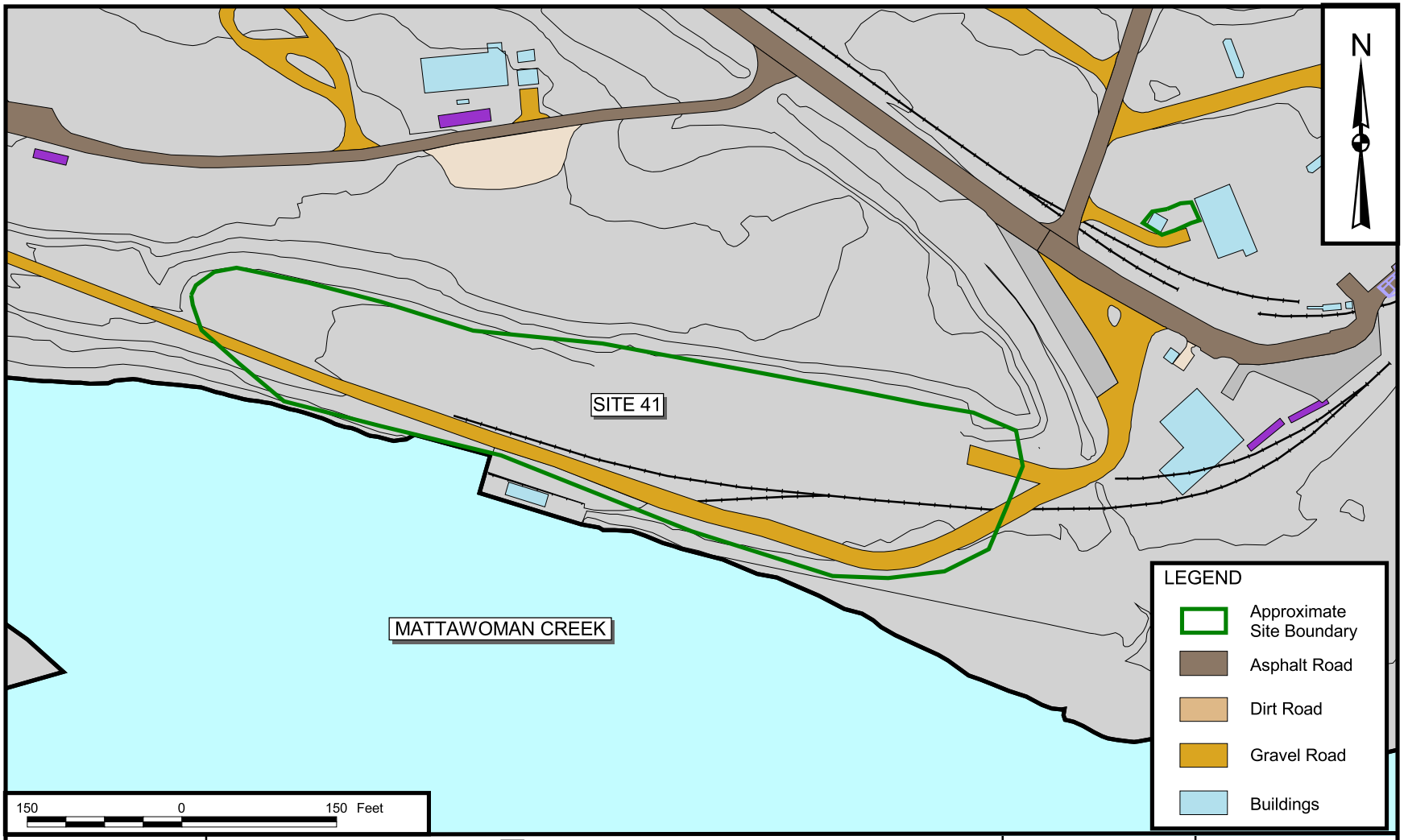


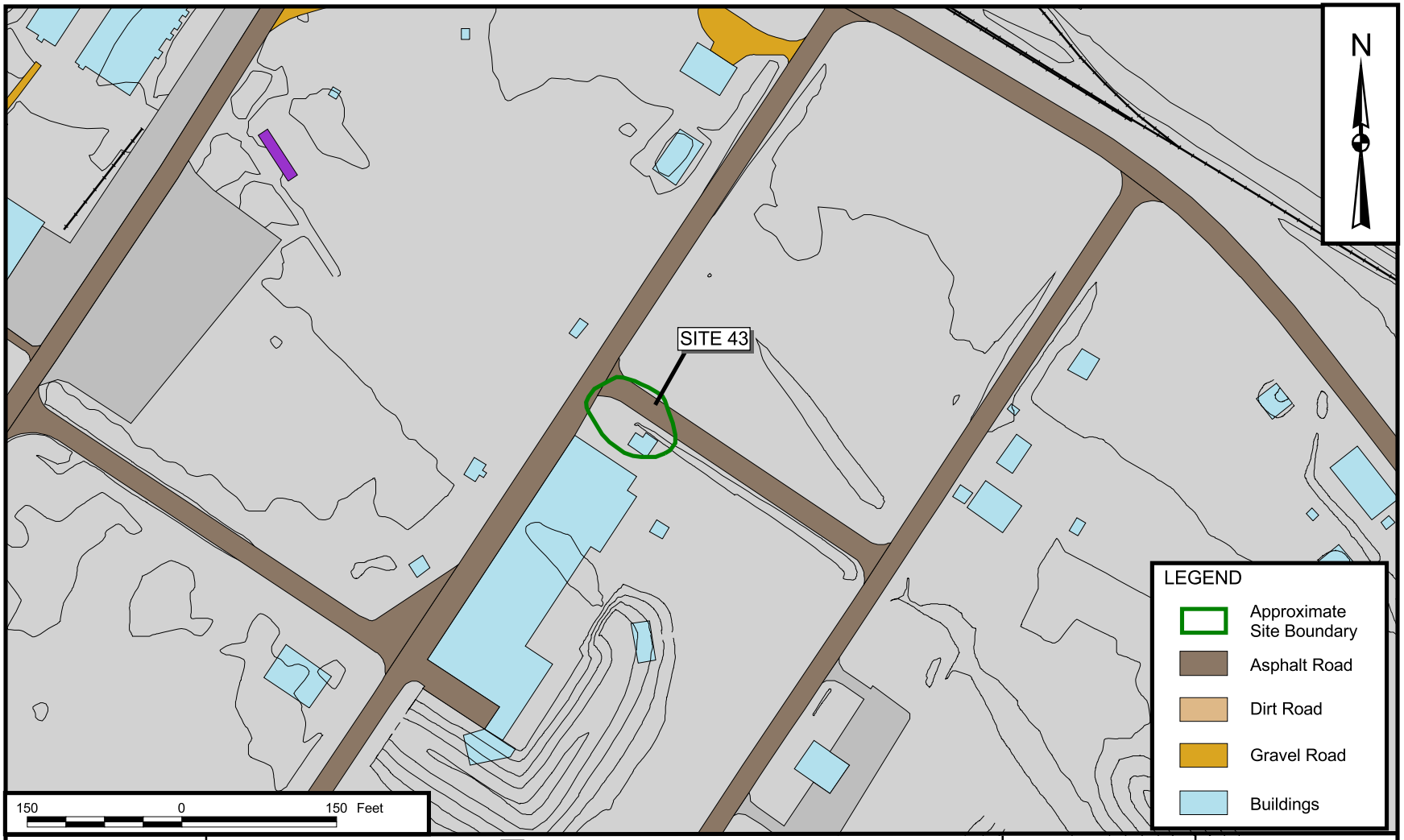
DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 39 - ORGANICS PLANT AND SITE 40 - SILVER AND PALLDIUM CATALYST IN SEDIMENT MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-23	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SITE 39/SITE 40 8/8/02 KMP



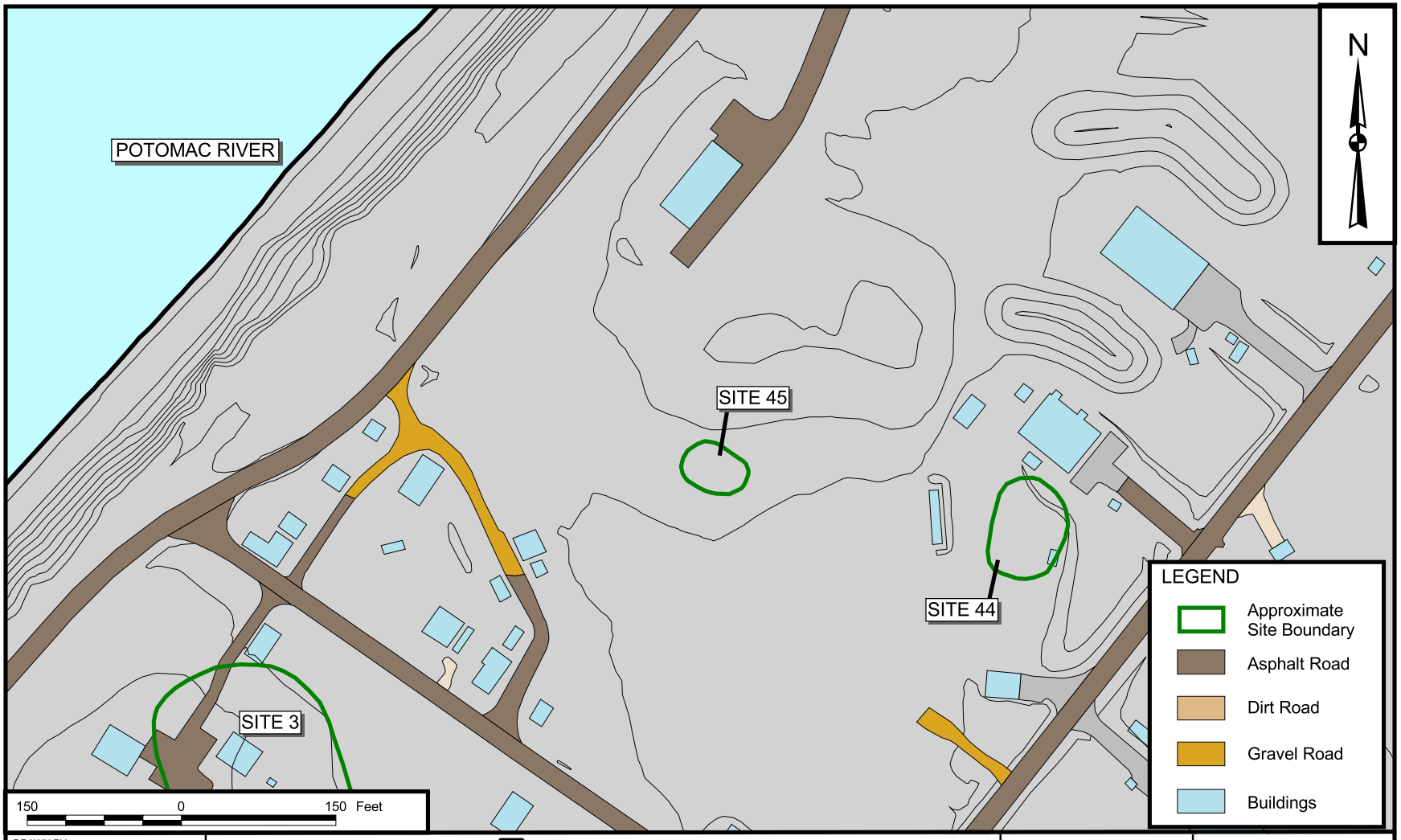
DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 41 - SCRAP YARD MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-24	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SITE 41 8/8/02 KMP



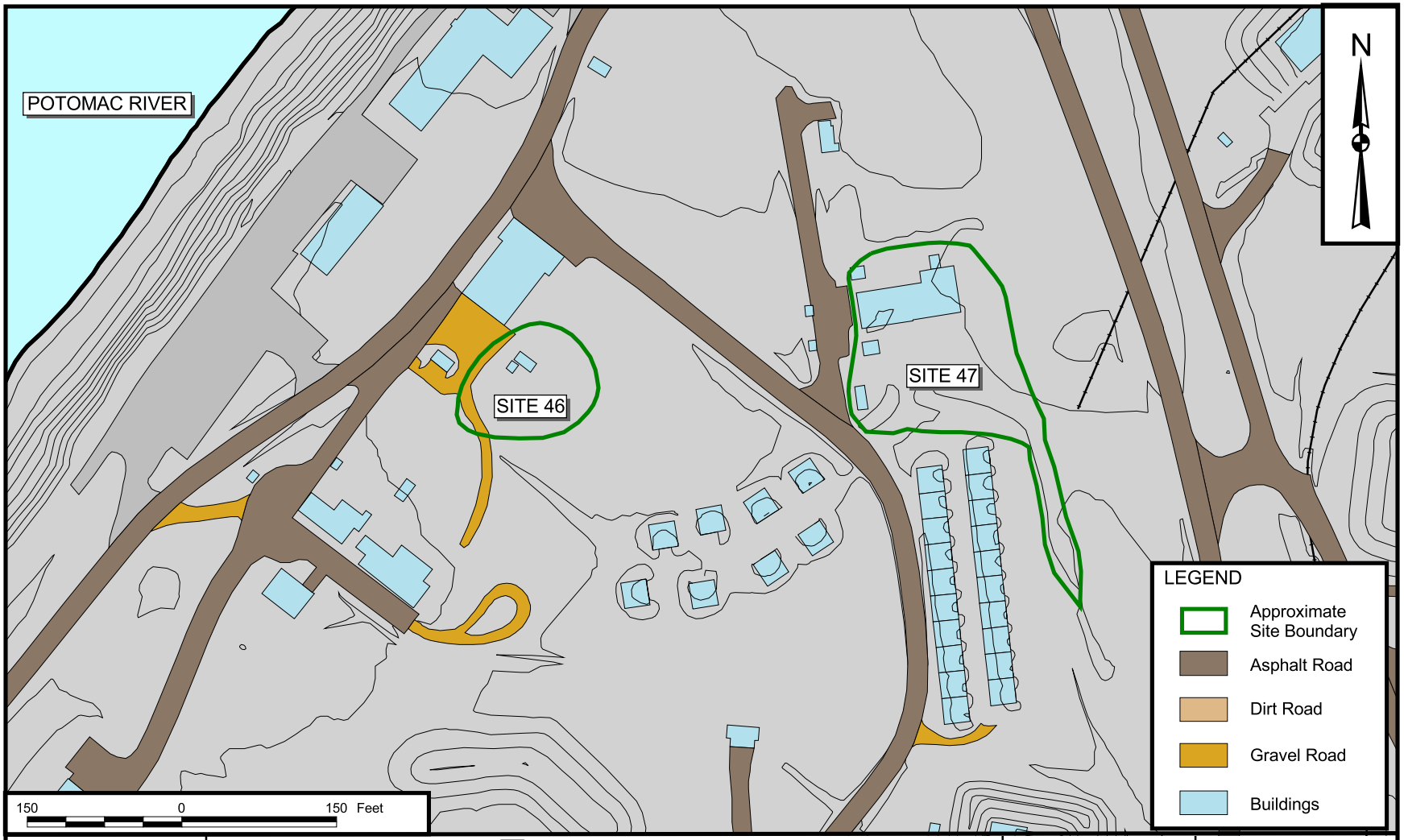
DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 43 - TOLENE DISPOSAL SITE MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-25	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SITE 43 8/8/02 KMP



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 44 - SOAK OUT AREA AND SITE 45 - ABANDONED DRUM MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-26	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SITE 44/SITE 45 8/8/02 KMP



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 46 - CADMIUM SANDBLAST GRIT AND SITE 47 - MERCURIC NITRATE DISPOSAL AREA MAIN AREA IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE A-27	REV: 0

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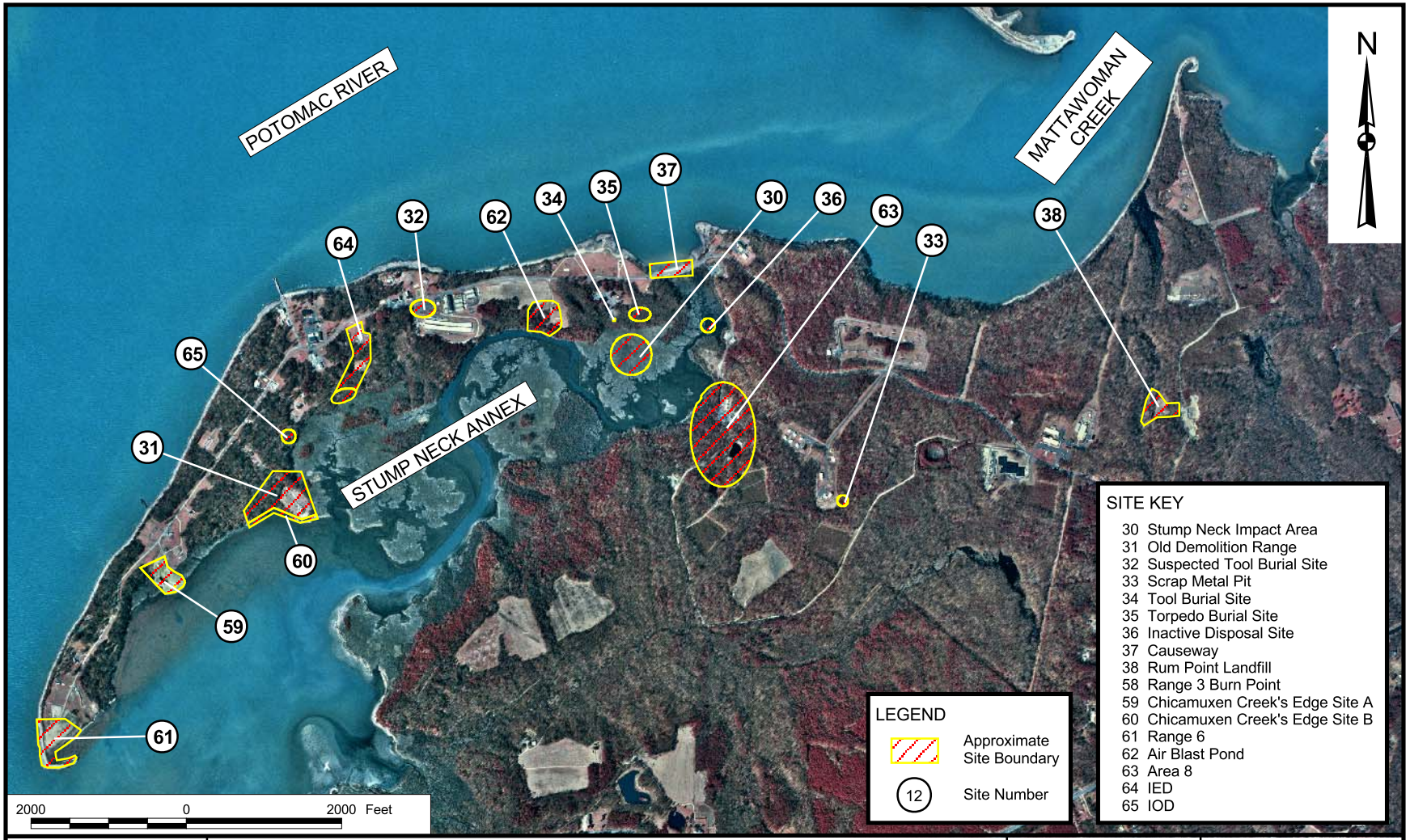
APPENDIX B

IHDIV - STUMP NECK ANNEX SITE FIGURES



DRAWN BY K. PEILA	DATE 7/26/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER 4019 / OWNER NUMBER —
CHECKED BY GJL	DATE 7/26/02	SITE LOCATION MAP STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY GJL / DATE 8/8/02
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE B-1 / REV 0

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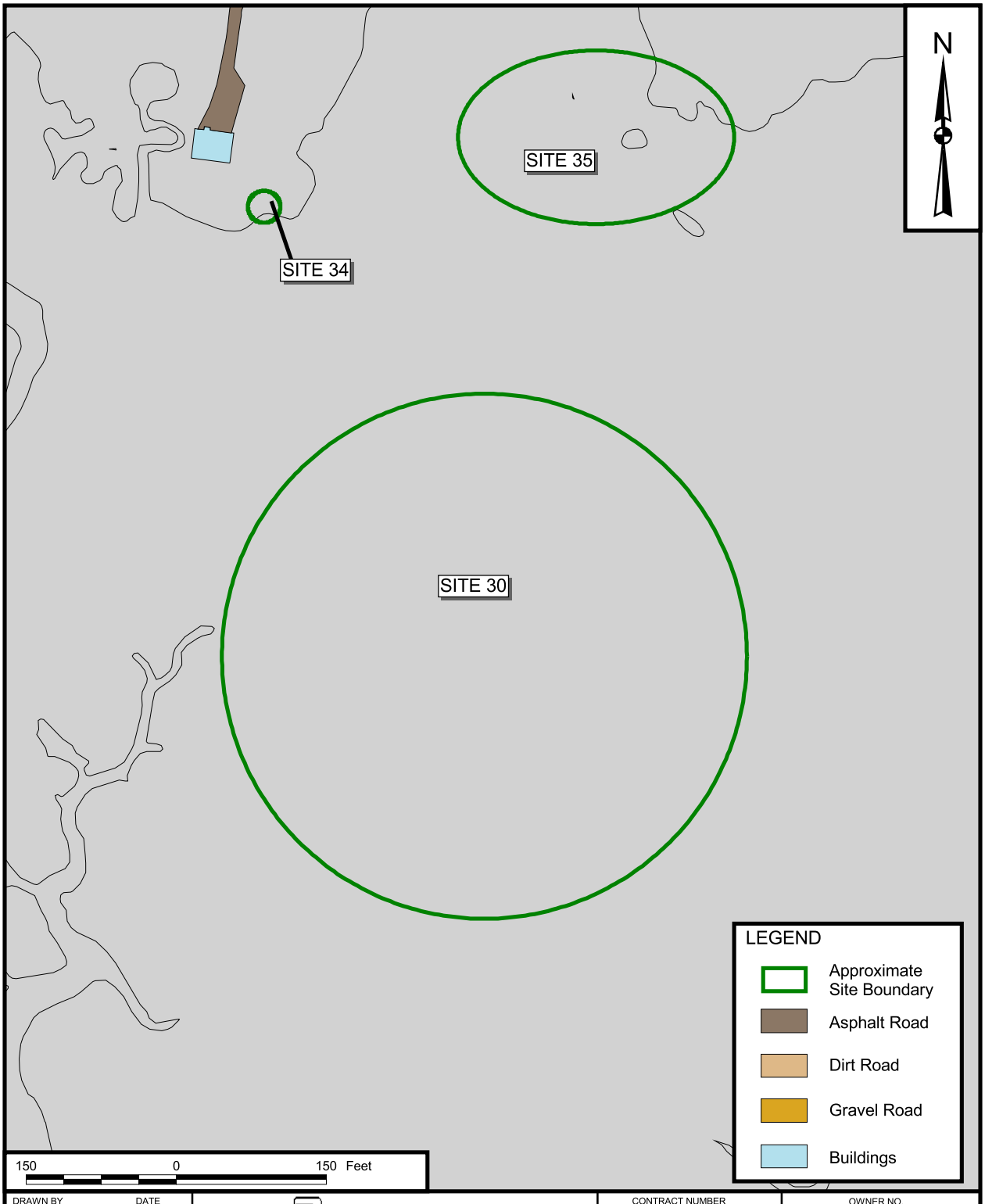
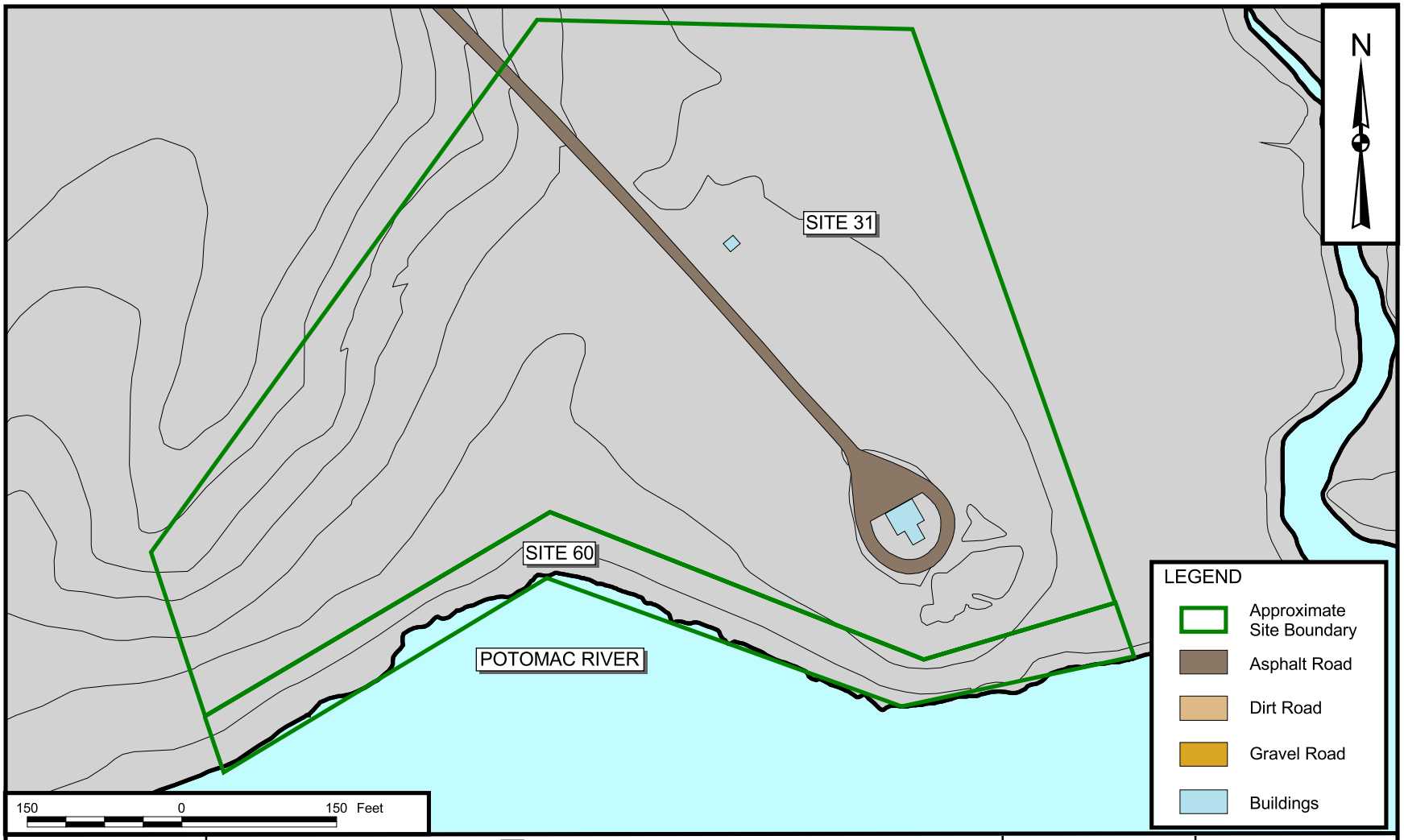


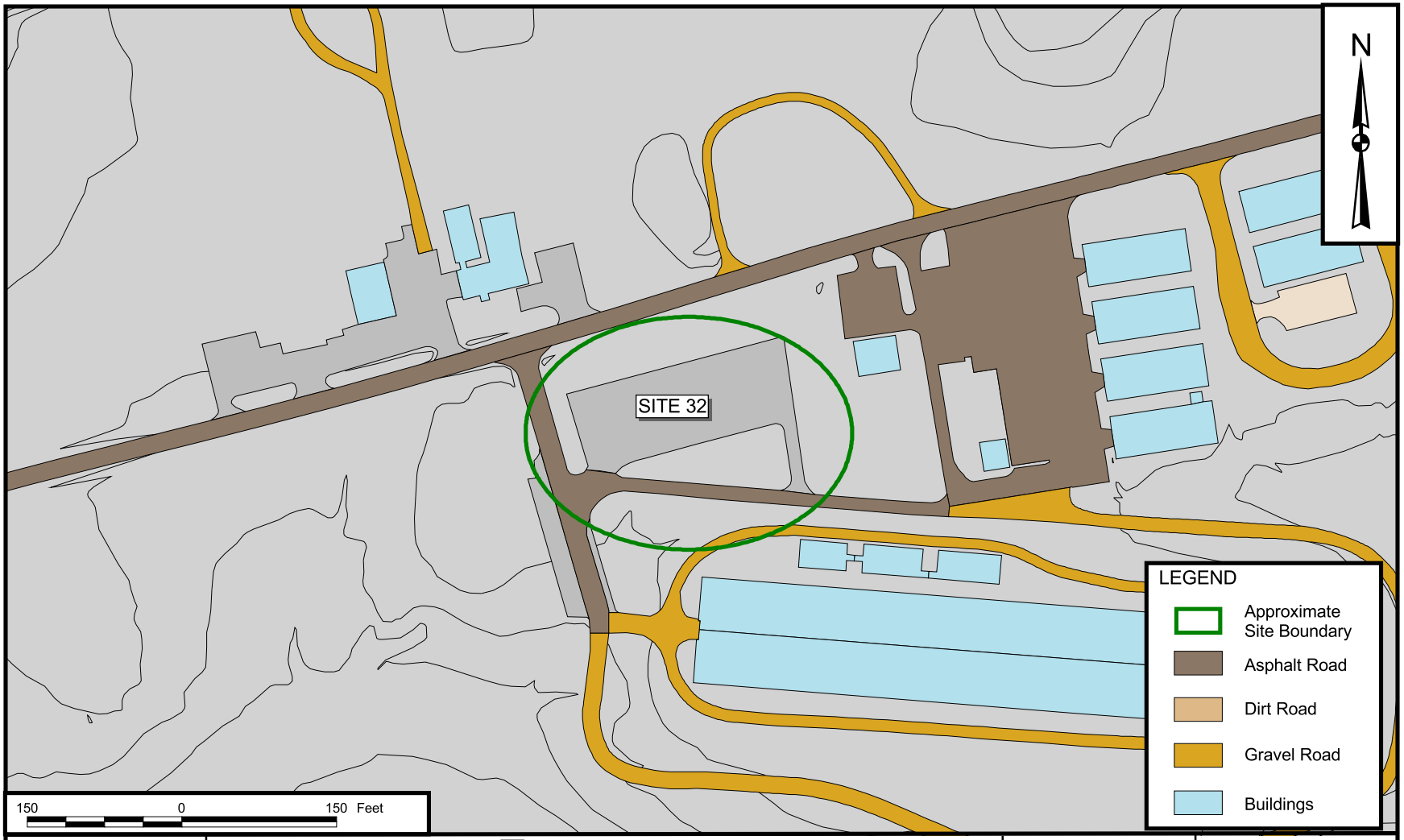
DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 30 - STUMP NECK IMPACT AREA, SITE 34 - TOOL BURIAL SITE AND SITE 35 - TORPEDO BURIAL SITE STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-2	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SN SITE 30/SITE 34/SITE 35 8/8/02 KMP



DRAWN BY K. PEILA — DATE 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER 4019	OWNER NUMBER —
CHECKED BY GJL — DATE 8/7/02	SITE 31 - OLD DEMOLITION RANGE AND SITE 60 - CHICAMUXEN CREEK'S EDGE SITE B STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY GJL — DATE 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY — — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE B-3	REV 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SN SITE 31/SITE 60 8/8/02 KMP



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 32 - SUSPECTED TOOL BURIAL SITE STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-4	REV: 0

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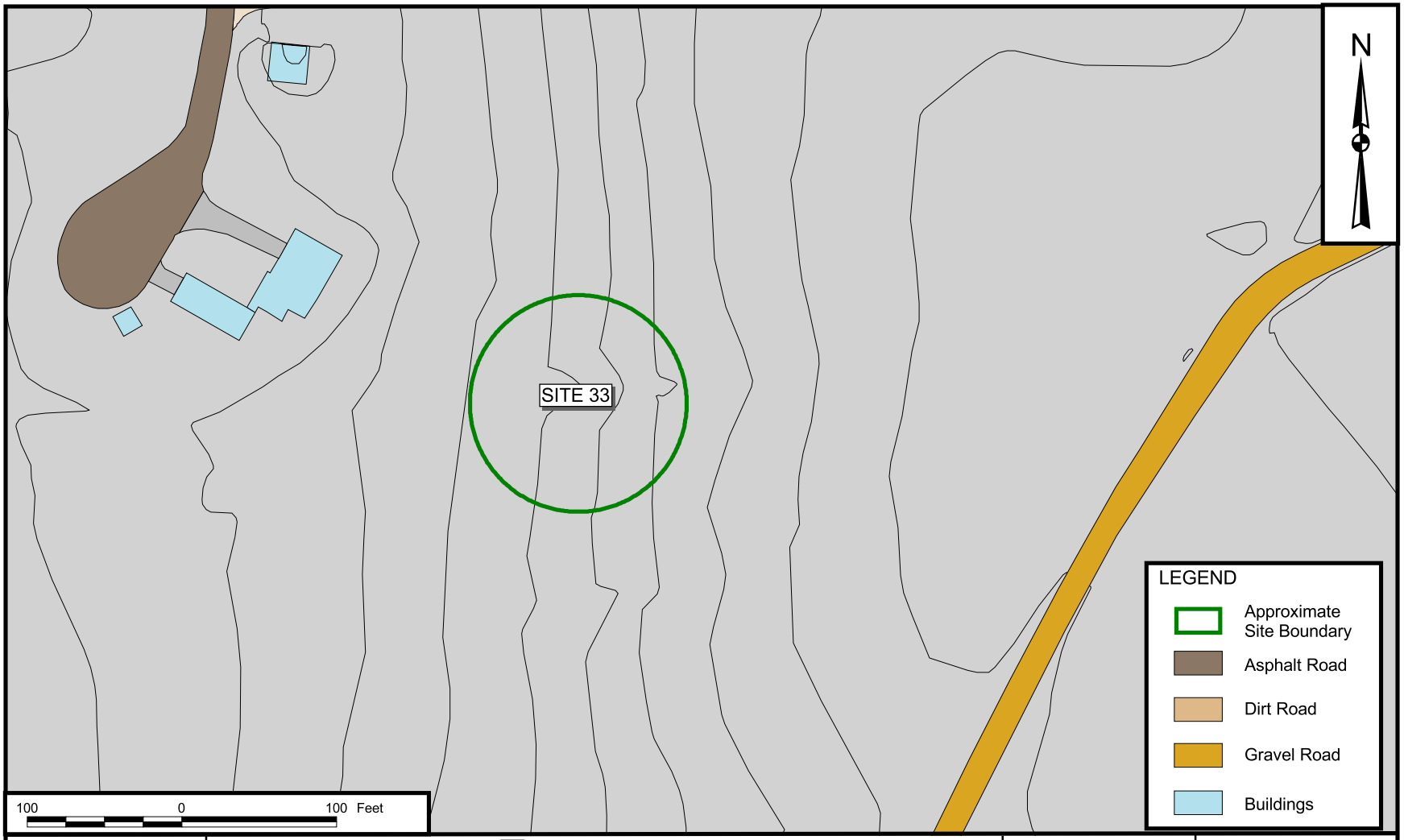
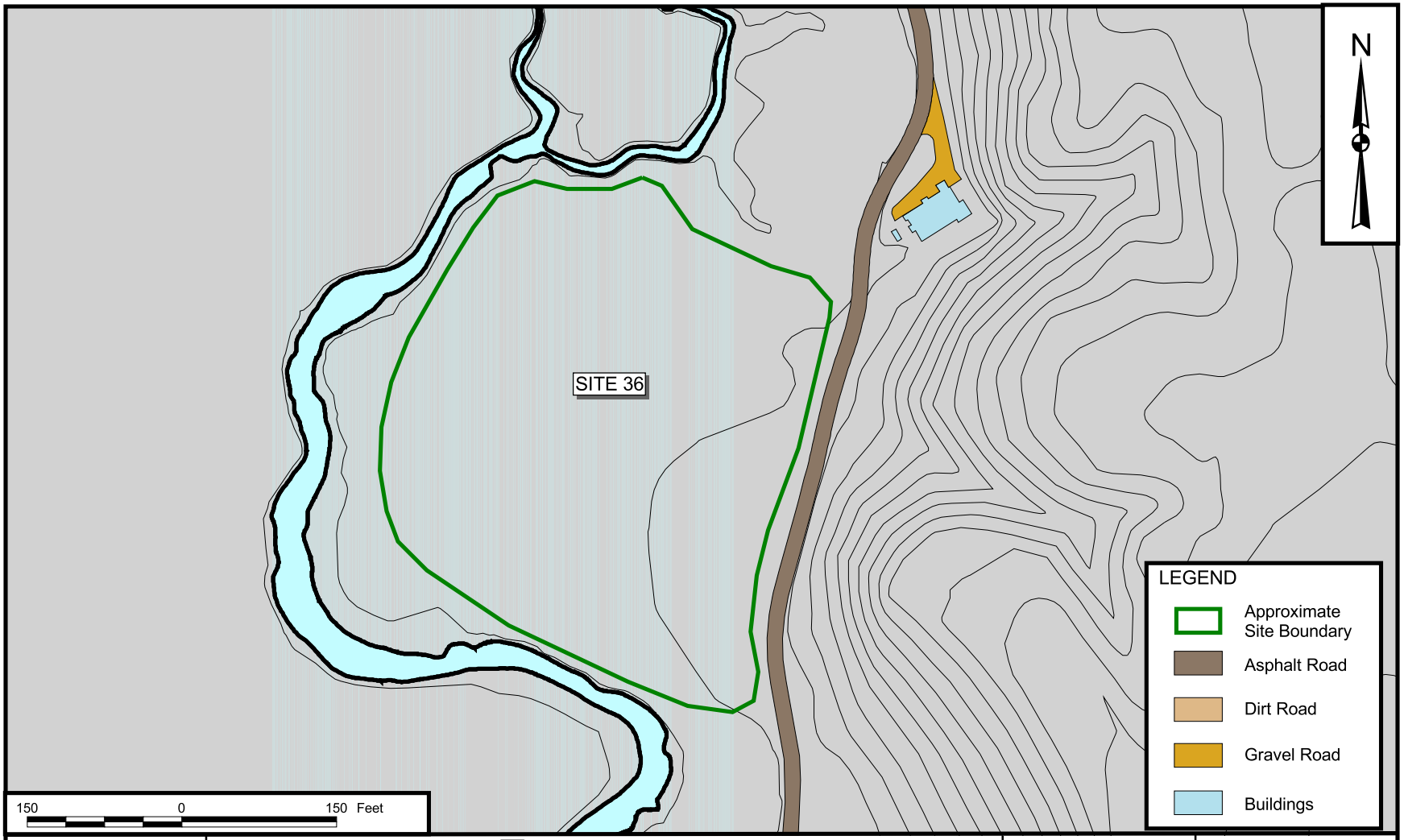


DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 33 - SCRAP METAL PIT STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-5	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SN SITE 33 8/8/02 KMP



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 36 - INACTIVE DISPOSAL SITE STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-6	REV: 0

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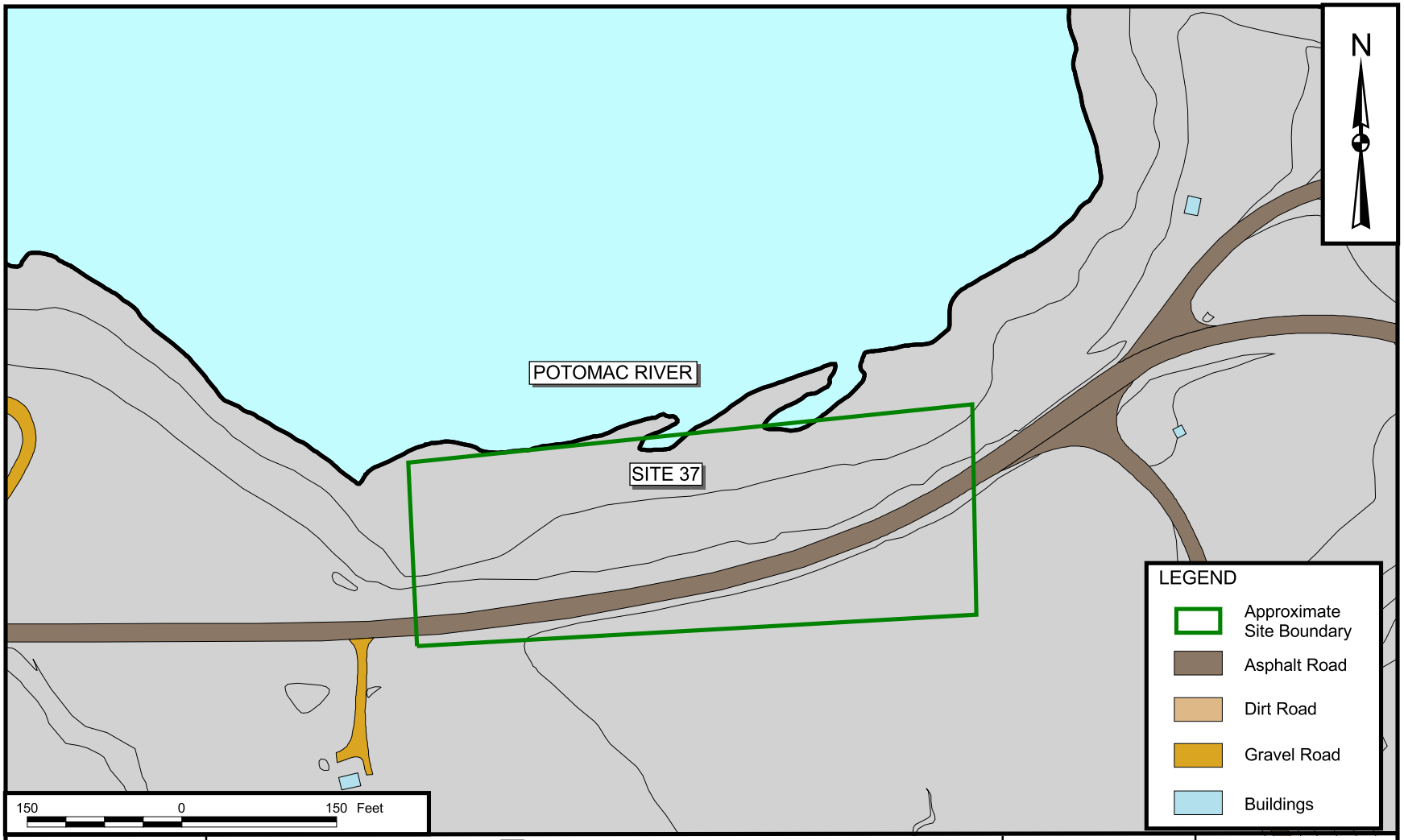
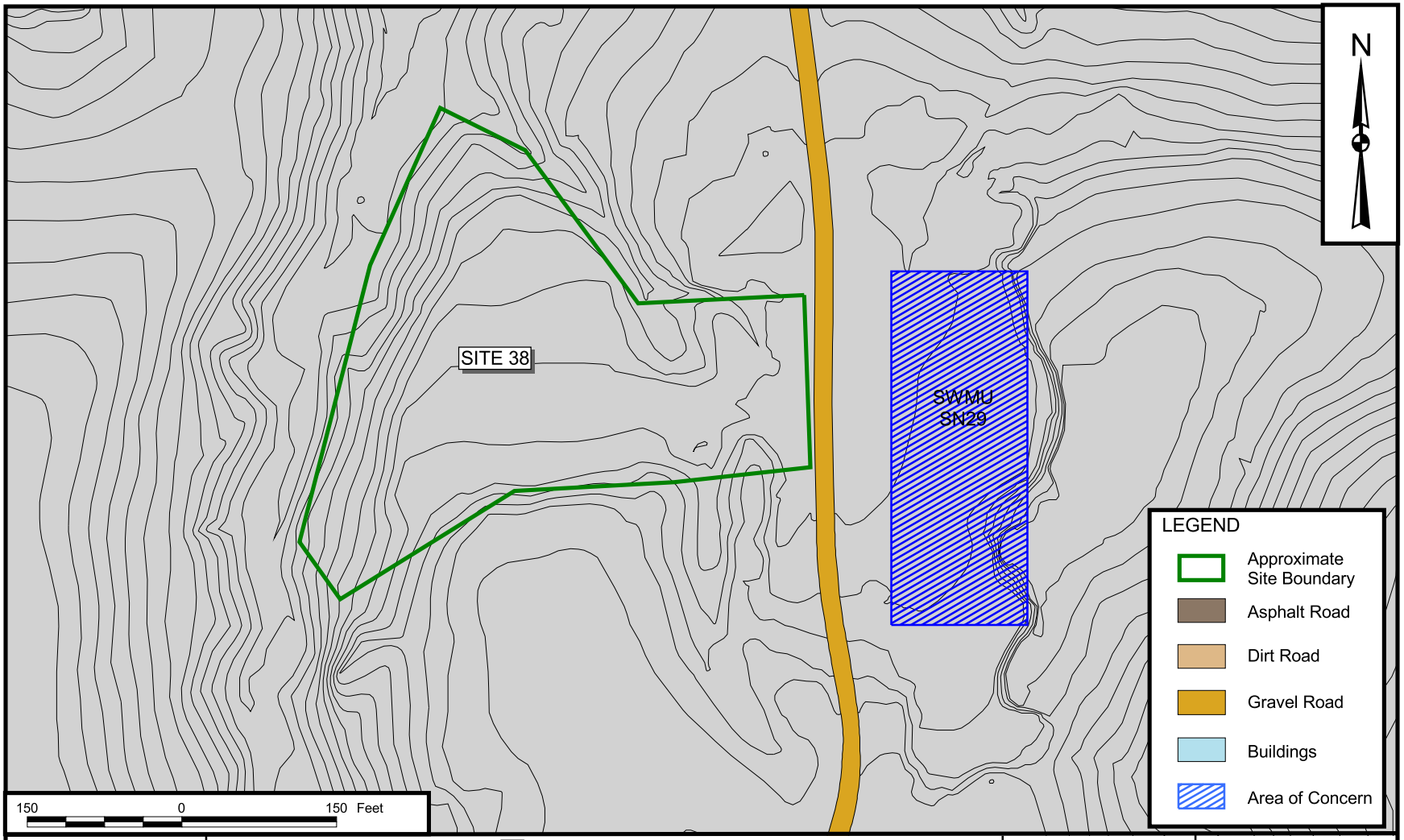


DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 37 - CAUSEWAY STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-7	REV: 0

P:\GIS\INDIANHEAD_NSWC\APR\COMMUNITYRELATIONSPLAN.APR SN SITE 37 8/8/02 KMP



DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 38 - RUM POINT LANDFILL STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-8	REV: 0

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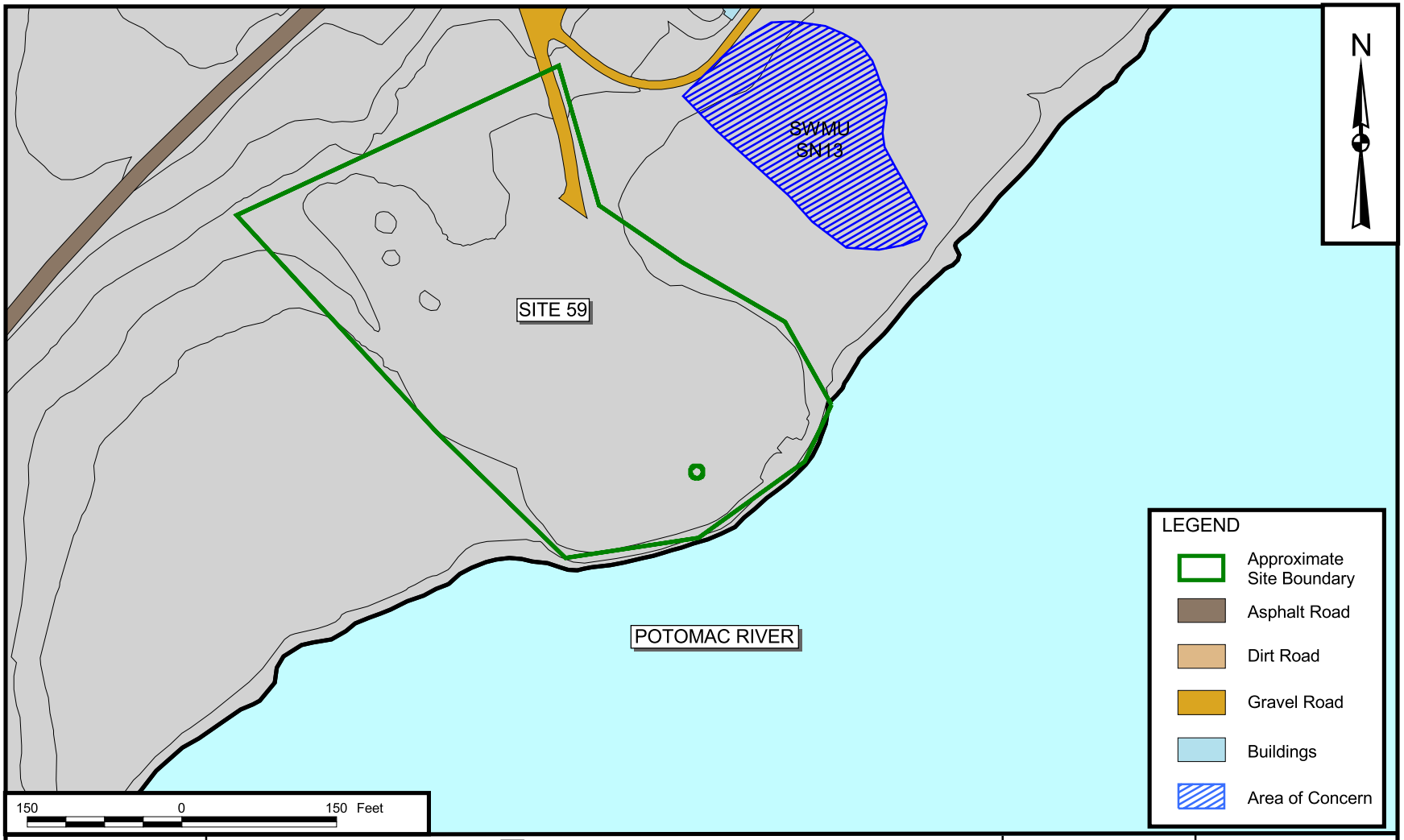

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 59 - CHICAMUXEN CREEK'S EDGE SITE A STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-9	REV: 0

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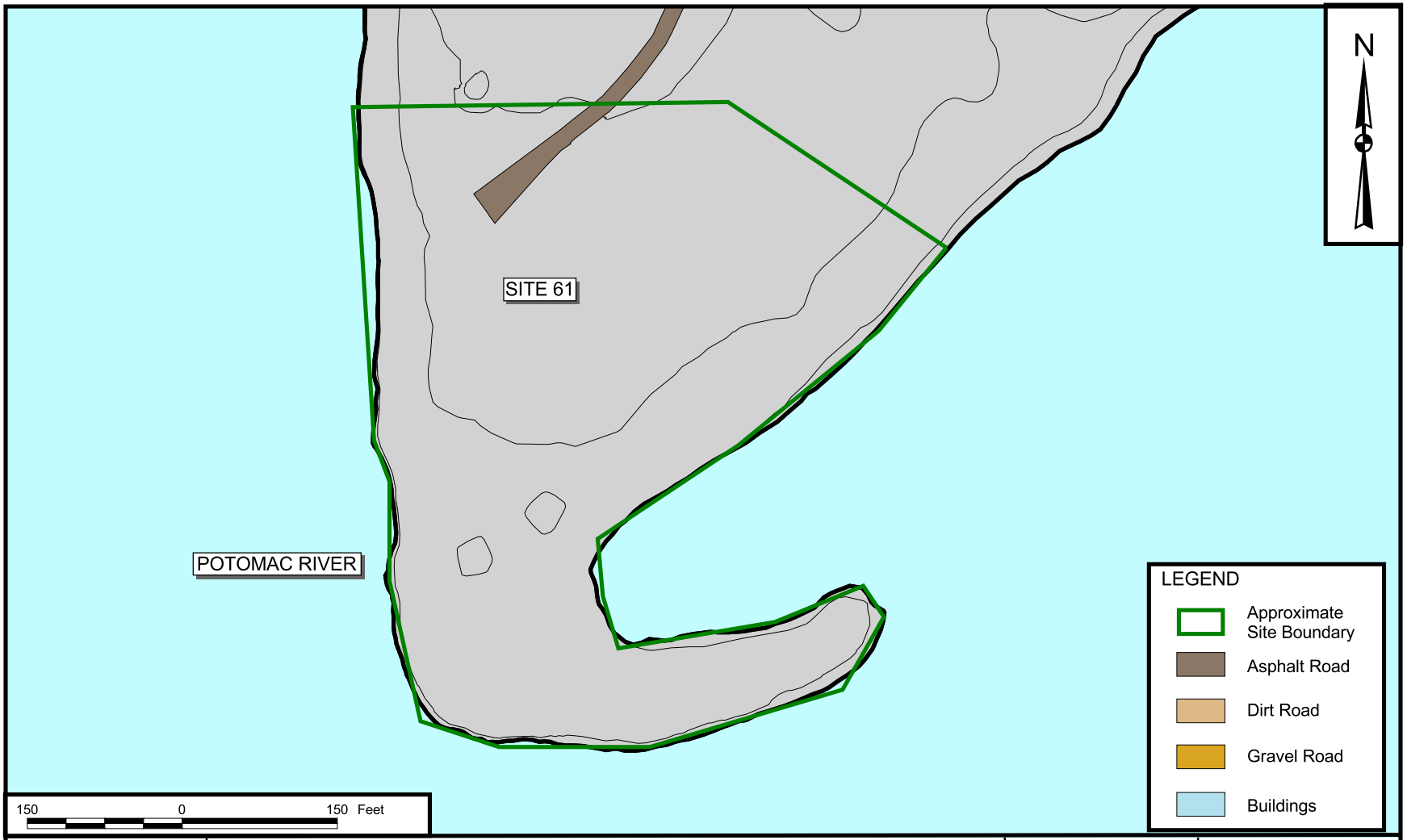

DRAWN BY K. PEILA DATE 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER 4019	OWNER NUMBER —
CHECKED BY GJL DATE 8/7/02	SITE 61 - RANGE 6 STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY GJL DATE 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE B-10	REV 0

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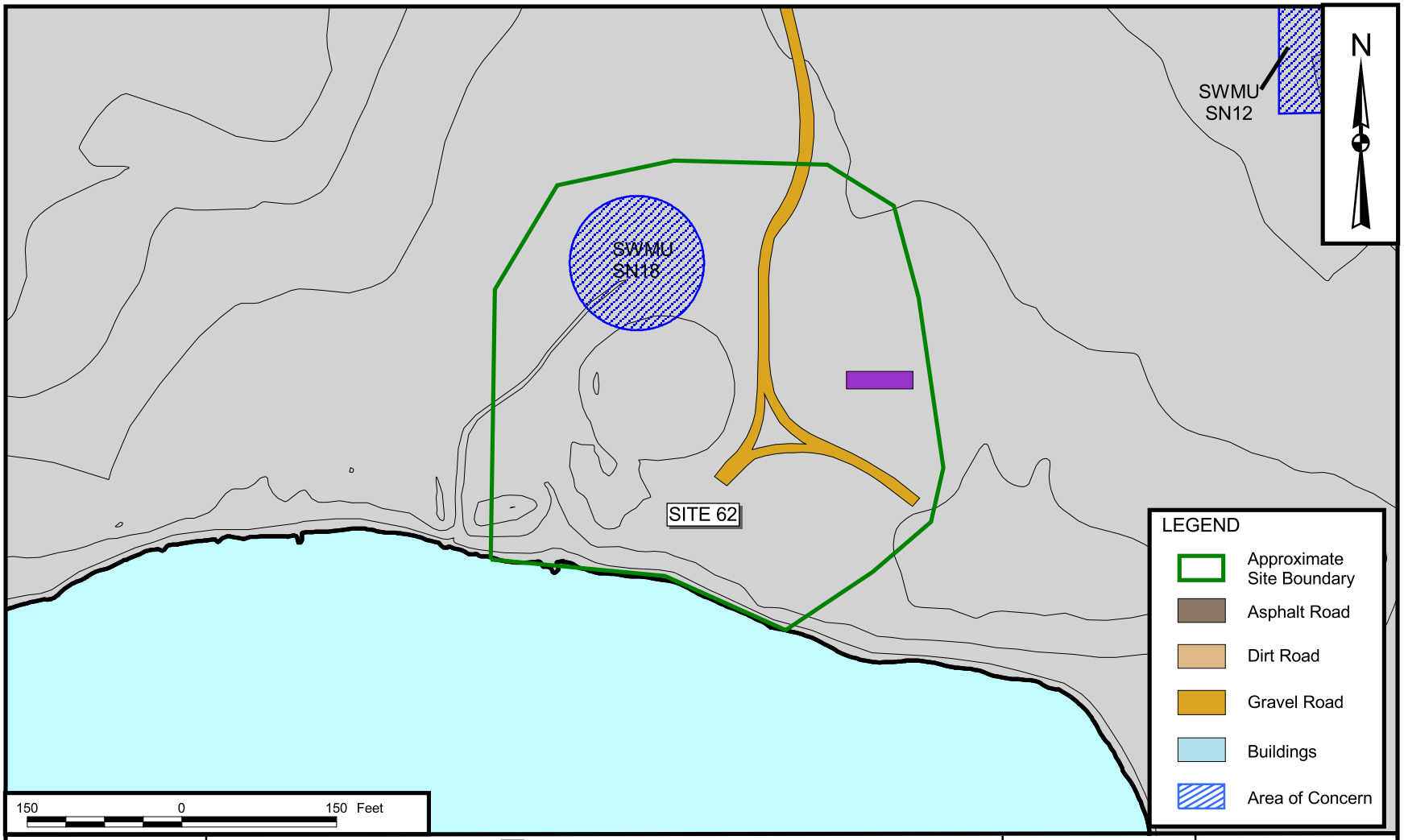

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 62 - AIR BLAST POND STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-11	REV: 0

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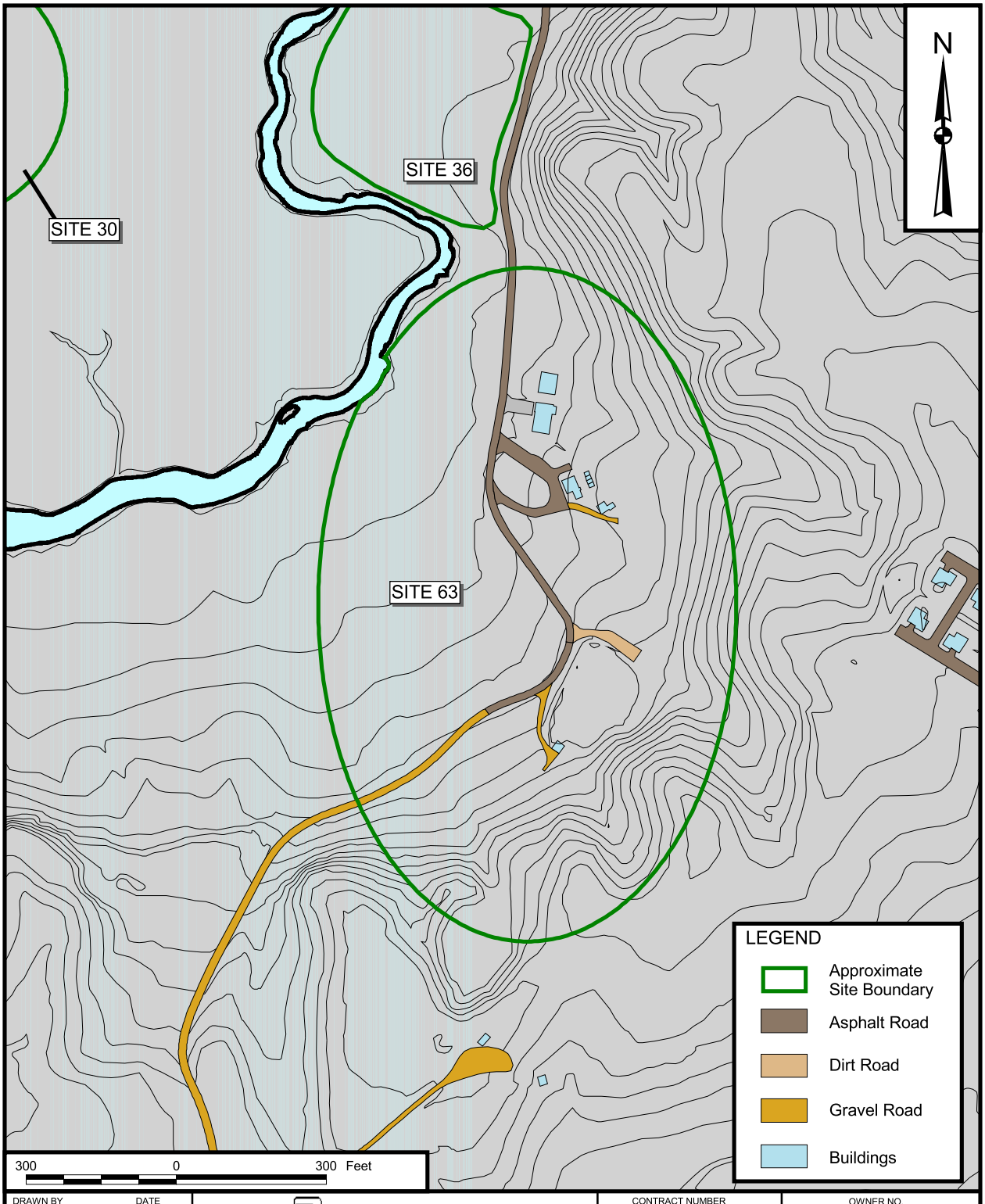

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 63 - AREA 8 STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-12	REV: 0

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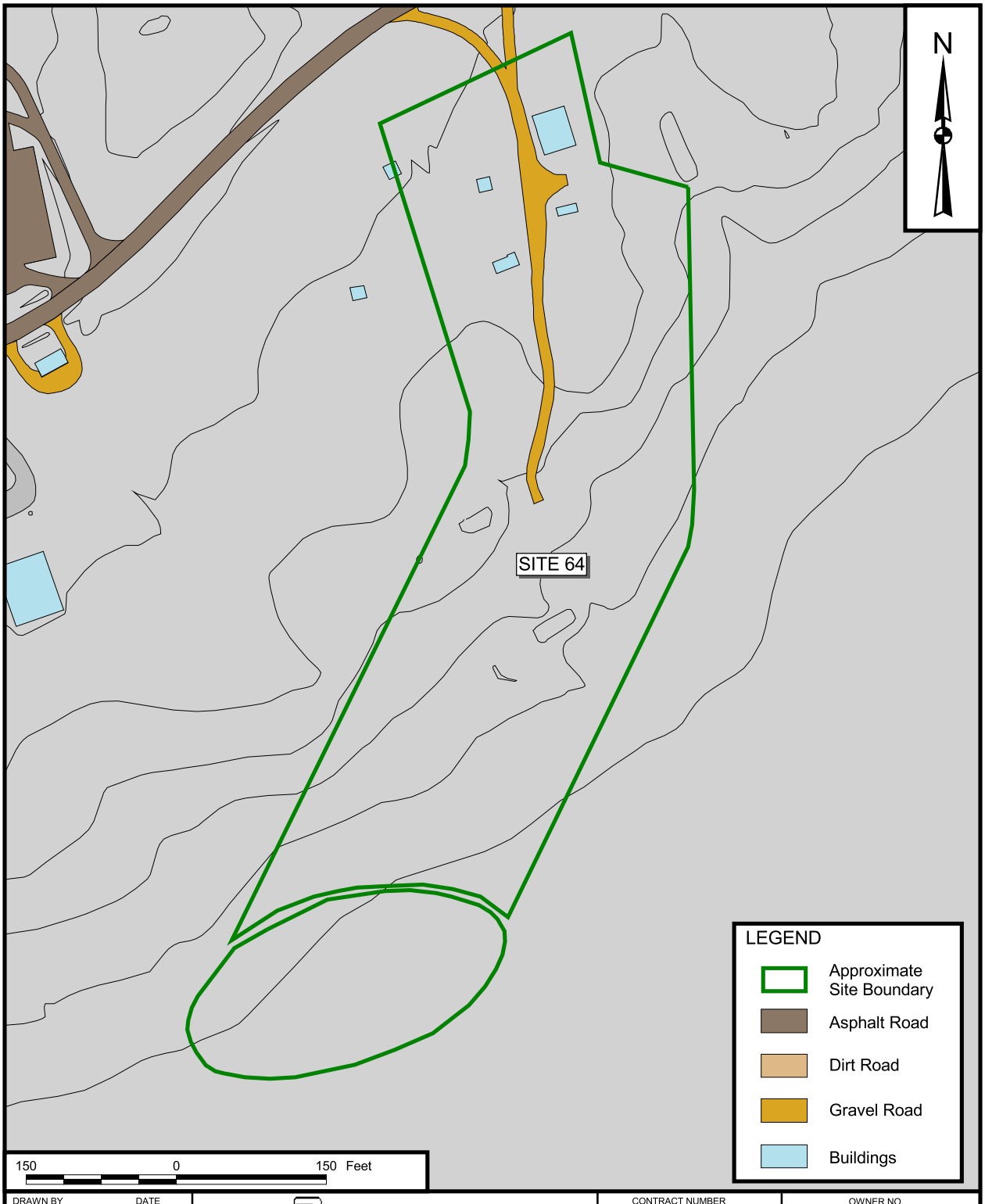

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NO.: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 64 - IED STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-13	REV: 0

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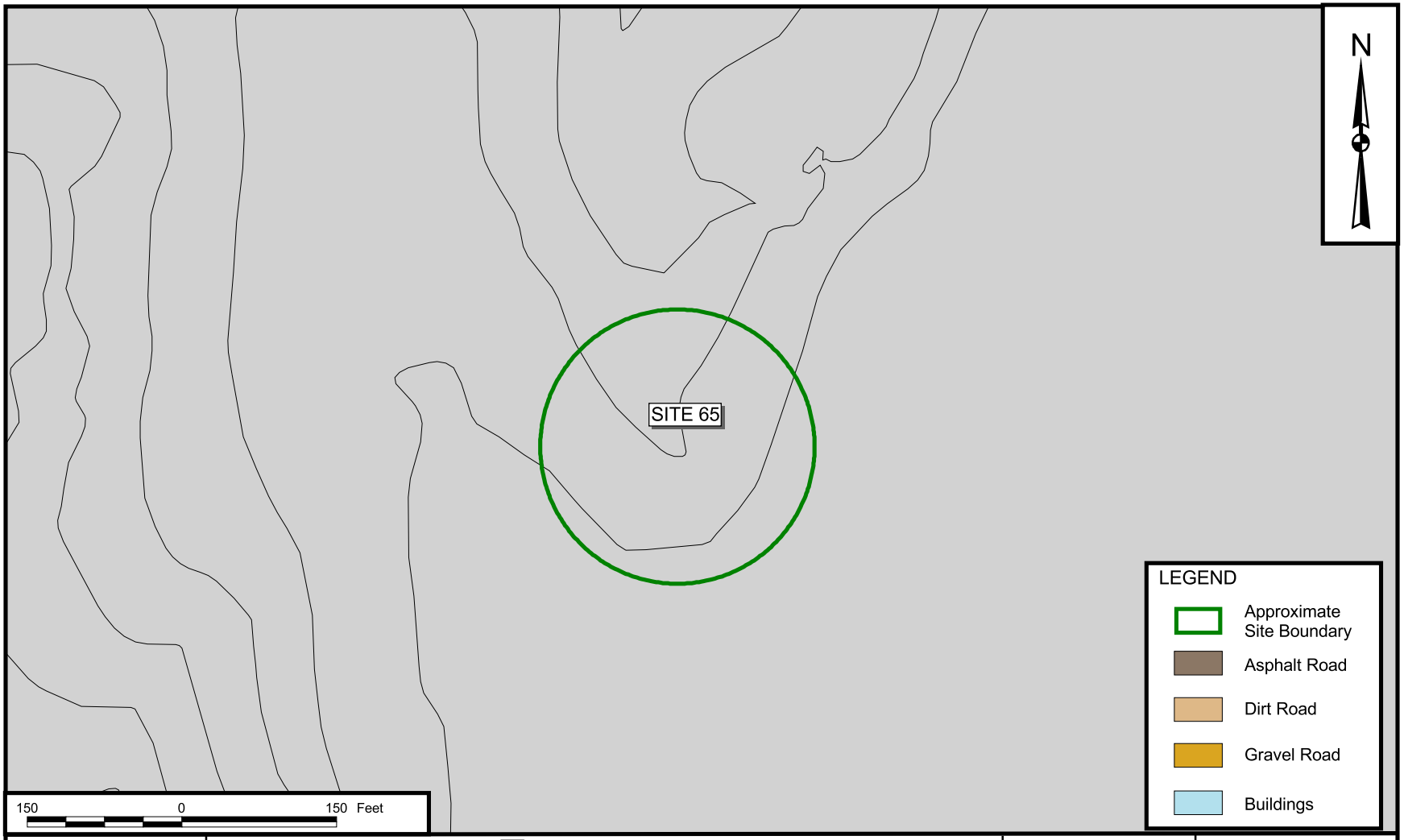

DRAWN BY: K. PEILA — DATE: 8/7/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER: 4019	OWNER NUMBER: —
CHECKED BY: GJL — DATE: 8/7/02	SITE 65 - IOD STUMP NECK ANNEX IHDIV - NSWC, INDIAN HEAD, MARYLAND	APPROVED BY: GJL — DATE: 8/8/02	
COST/SCHEDULE-AREA		APPROVED BY: — — DATE: —	
SCALE: AS NOTED		DRAWING NO.: FIGURE B-14	REV: 0

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APPENDIX C

PHOTO LOG

(PROVIDED UNDER SEPARATE COVER)