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FINAL

SITE MANAGEMENT PLAN

NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CONTRACT TASK ORDER 0036

JANUARY 1998

Prepared for:

DEPARTMENT OF THE NAVY
NAVAL FACILITIES
ENGINEERING COMMAND ATLANTIC DIVISION
Norfolk, Virginia

Under the:

LANTDIV CLEAN II Program
Contract N62470-95-D-6007

Prepared by:

CH2M HILL FEDERAL GROUP, LTD.
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1998-1999
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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AST	Aboveground Storage Tank
AWQC	Ambient Water Quality Criteria
Baker	Baker Environmental, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHF	Contaminant Hazard Factor
CLEAN	Comprehensive Long-Term Environmental Action Navy
DOD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
EOD	Explosives Ordnance Disposal
EPIC	Environmental Photographic Interpretation Center
FFA	Federal Facility Agreement
FY	Fiscal Year
HRSD	Hampton Roads Sanitation District
IAS	Initial Assessment Study
IRP	Installation Restoration Program
LOEL	Lowest Observed Effect Level
MPF	Migration Pathway Factor
NEDED	Naval Explosives Development Engineering Department
NEESA	Naval Energy and Environmental Support Activity
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OU	Operable Unit
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PRAP	Proposed Remedial Action Plan
PRG	Preliminary Remediation Goal
PW	Public Works
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

RF	Receptor Factor
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RRR	Relative Risk Ranking
SI	Site Investigation
SMP	Site Management Plan
SSA	Site Screening Area
SSP	Site Screening Process
STP	Sewage Treatment Plant
SWMU	Solid Waste Management Unit
TNT	Trinitrotoluene
TRC	Technical Review Committee
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
WES	Waterways Experimental Station
WPNSTA Yorktown	Naval Weapons Station Yorktown, Yorktown, Virginia

1.0 INTRODUCTION

This report presents the Site Management Plan (SMP) for Naval Weapons Station Yorktown, Yorktown, Virginia (WPNSTA Yorktown). As part of the Federal Facility Agreement (FFA, USEPA, 1994b), the SMP is required as the management tool for planning, reviewing, and setting priorities for all remedial response activities to be conducted at the facility. The SMP is updated annually to revise priorities of activities as work progresses and additional information becomes available. This SMP presents the rationale for the sequence of future investigation and remediation activities to be completed and the estimated schedule for completion of these activities, with detailed schedules and deadlines presented for Fiscal Years (FY) 1998 and 1999, as required by the FFA. The use of an SMP allows for annual adjustment in scheduled activities for reasons such as Federal budgetary constraints, changes in scope of investigation/remediation activities or other unanticipated events without modifying the FFA.

Section XII of the FFA requires that the SMP include the detailed scheduling of activities for two fiscal years, annual updating of the scheduled activities, and review and approval by the United States Environmental Protection Agency (USEPA) Region III and the Commonwealth of Virginia. As part of the FFA development and by mutual consent of the Navy and the USEPA, several Resource Conservation and Recovery Act (RCRA) Solid Waste Management Units (SWMUs) have been included for investigation and evaluation under the FFA. There are 15 former SWMUs, two areas identified in the Environmental Photographic Interpretation Center (EPIC) study, one area of concern (AOC), and one former Installation Restoration Program (IRP) site to be investigated. These 19 areas have been termed Site Screening Areas (SSAs) and are listed in Appendix A of the FFA. Also, two AOCs (which have been designated SSAs), two SSAs, and one site have been added for investigation and evaluation which were not included in the FFA, and based on the results of the site screening process (SSP), four SSAs have been retained as sites for additional Remedial Investigation/Feasibility Study (RI/FS) efforts. Scheduled activities for the 21 sites and 19 SSAs are presented in this SMP.

1.1 Facility Description

WPNSTA Yorktown is a 10,624 acre installation located on the Virginia Peninsula in York and James City Counties and the City of Newport News (Figure 1-1). The installation is bounded on the northwest by the Naval Supply Center Cheatham Annex, the Virginia Emergency Fuel Farm, and the

future community development of Whittaker's Mill; on the northeast by the York River and the Colonial National Historic Parkway; on the southwest by Route 143 and Interstate 64; and on the southeast by Route 238 and the community of Lackey.

WPNSTA Yorktown, originally named the U.S. Mine Depot, was established in 1918 to support the laying of mines in the North Sea during World War I. The establishment of the depot was the culmination of a search process, begun in 1917 at the request of Congress, to locate an Atlantic coast site for a weapons handling and storage facility. For 20 years after World War I, the depot received, reclaimed, stored, and issued mines, depth charges, and related materials. During World War II, the facility was expanded to include three additional trinitrotoluene (TNT) loading plants and new torpedo overhaul facilities. A research and development laboratory for experimentation with high explosives was established in 1944. In 1947, a quality evaluation laboratory was developed to monitor special tasks assigned to the facility, which included the design and development of depth charges and advanced underwater weapons. On August 7, 1959, the U.S. Mine Depot was redesignated the U.S. Naval Weapons Station. The primary mission of WPNSTA Yorktown is to provide ordnance, technical support, and related services to sustain the war-fighting capability of the armed forces in support of national military strategy. The long-term plans for the facility are the same as the present plans, with land use also generally the same as at present (Department of the Navy, 1991).

1.2 Environmental Status/Previous Investigations and Reporting

The environmental condition of WPNSTA Yorktown is being investigated through the Department of Defense's IRP. On October 15, 1992, WPNSTA Yorktown was included on the National Priorities List (NPL) primarily due to the facility's proximity to wetlands and the potential impact on the surrounding environment.

Previous investigation reports completed through the IRP include an Initial Assessment Study (IAS) (July 1984), two Confirmation Study Reports (June 1986 and June 1988), a Remedial Investigation (RI) Interim Report (July 1991), a Site 21 Site Inspection Report (February 1992), a Focused Biological Sampling and Risk Evaluation Report (April 1993), and a Round One RI Report (July 1993). The following paragraphs briefly describe the most important previous investigations conducted at WPNSTA Yorktown.

1.2.1 Initial Assessment Study

The purpose of the IAS (C. C. Johnson & Associates, Inc. and CH2M Hill, July 1984) was to identify and assess sites posing a potential threat to human health and/or the environment due to contamination from past operations. A total of 19 potentially contaminated sites was identified based on information from historical records, aerial photographs, field inspections, and personnel interviews. Each site was evaluated for the type of contamination, migration pathways, and pollutant receptors. The IAS concluded that 15 of the 19 sites were of sufficient threat to human health or the environment to warrant Confirmation Studies.

1.2.2 Confirmation Study

Two rounds of data were obtained during the Confirmation Study. During the first round of sampling, conducted in the winter of 1986, environmental samples were collected from the 15 sites identified in the IAS. This effort was documented in the "Confirmation Study Step IA (Verification), Round One," (Dames & Moore, June 1986). The initial sampling effort included:

- Installation and sampling of 26 monitoring wells
- Collection of 21 surface water and sediment samples
- Collection of 26 surface soil samples
- Chemical analysis of the samples collected

The second round of sampling was conducted during November and December 1987. The Round Two effort included:

- Collection of 26 groundwater samples from the previously installed wells
- Collection of 26 surface water and 32 sediment samples
- Collection of 12 surface soil samples
- Chemical analysis of the samples collected

The results of the analyses and comparisons with appropriate regulatory standards were presented in the "Confirmation Study Step IA (Verification), Round Two," (Dames & Moore, June 1988). The results of these field efforts were combined and summarized in the Draft RI Interim Report

(Dames & Moore, February 1989). This report was subsequently revised by Versar in 1991 to incorporate comments from the Technical Review Committee (TRC); this report is referred to as the RI Interim Report. The RI Interim Report recommended that further RI activities be completed at 14 of the 15 sites for which data were available.

1.2.3 Site 21 Site Investigation

In November 1990, WPNSTA Yorktown personnel identified an additional site (Site 21, the Battery and Drum Disposal Area) that had not been included in the previous investigations. A Site Investigation (SI) at Site 21 was conducted in October 1991. Three monitoring wells were installed and sampled, and surface and subsurface soil samples were collected. The results of this investigation were presented in the "Draft Final Site Inspection Report, Site 21-Battery and Drum Disposal Area, Naval Weapons Station Yorktown, Yorktown, Virginia" (Baker/Weston, February 1992).

1.2.4 Focused Biological Sampling and Preliminary Risk Evaluation

The Focused Biological Sampling and Preliminary Risk Evaluation Report (Baker/Weston, April 1993b) summarized the results of a limited biological tissue, surface water, and sediment sampling effort conducted in October 1992. The primary object of the sampling program was to evaluate the potential human health risk associated with consumption of fish and shellfish taken from select waters within WPNSTA Yorktown.

1.2.5 Round One RI

The RI Interim Report recommended that 14 of the 15 sites be included for further study. However, based on evaluation of the available data, all 15 sites were recommended for further study during the Round One RI. In addition, based on the data obtained from the SI at Site 21, this site also was included in the Round One study (Baker/Weston, July 1993a).

The Round One RI sampling effort included:

- Geophysical investigations
- Biota investigations

- Tidal investigations
- Aquifer testing
- Monitoring well installation (23 wells)
- Collection of 51 groundwater samples (22 new wells, 29 existing wells; one newly installed well was dry)
- Collection of 196 surface water and sediment samples
- Collection of 115 surface soil samples
- Collection of 48 subsurface soil samples
- Chemical analysis of the samples collected

The results of the Round One RI indicated that further investigation was needed at all of the 16 sites, with the exception of Site 5, to better define the nature and/or extent of contamination associated with each site. A No Action Record of Decision (ROD) was finalized in September, 1994 for Site 5.

1.2.6 Round Two RIs/SSA Investigations

The Round Two RI field investigation was conducted for: (1) Sites 6, 7, 12, 16 and SSA 16 and Background for the York River Drainage Area in 1994; (2) Sites 9 and 19 in 1995 to supplement the Round One RI; (3) Sites 1, 3, 4, 11, 17, 21, and 22 in 1996 to supplement the Round One RI; (4) and Sites 2, 8, 18 and SSA 14 in 1997 to supplement the Round One RI. Additional soil, subsurface soil, surface water, sediment and groundwater samples and biota were collected.

In addition to the Round Two RI, SSAs 1, 3, 6, 7, 12, and 15 were investigated during 1994. Environmental media including surface soil, subsurface soil, groundwater, surface water, and sediment were investigated at those SSAs having potential impacts to these media. SSAs 2, 17, 18, and 19 were investigated in early 1995 and SSAs 8, 11, 12, and 13 were investigated in early 1996. Again, surface soil, subsurface soil, groundwater, surface water and sediment were investigated where applicable.

Based on the results of the SSP, SSAs 1, 6, 7, and 18 were retained as Sites 23, 24, 25, and 26, respectively for additional RI/FS efforts. These SSAs posed unacceptable human health and/or ecological risk as a result of risk screening.

SSAs 17 and 19 have been removed from the RI/FS process because the SSAs did not pose unacceptable human health or ecological risk as a result of risk screening. Long-term monitoring at

SSA 2 has been included in a RCRA Part B Permit Application. SSA 15 was combined with another investigation area (Site 12).

1.2.7 Reporting

Subsequent to the field investigations, RI Reports and SSP Reports were generated for sites and SSAs. The following reports have been submitted in Draft form to USEPA Region III and the Commonwealth of Virginia:

RI Reports

- Sites 11 and 17
- Sites 4, 21, and 22
- Sites 6 and 7

Feasibility Studies

None

Proposed Remedial Action Plan (PRAP)/RODs

- Sites 1 and 3

SSP Reports

None

Miscellaneous Reports

- WES Bench Scale Treatability Study Report

The following reports have been submitted in Final form to USEPA Region III and the Commonwealth of Virginia:

RI Reports

- Site 16/SSA 16
- Site 12
- Sites 9 and 19
- Sites 1 and 3

Feasibility Studies

- Site 12
- Sites 9 and 19
- Sites 1 and 3

PRAPs/RODs

- Site 5 (No Further Remedial Action)
- Site 16/SSA 16 (No Further Remedial Action with Institutional Controls)
- Site 12
- Sites 9 and 19

SSP Reports

- SSAs 1, 6, 7, and 15
- SSAs 2, 17, 18, and 19
- SSAs 8, 11, 12, and 13

Miscellaneous Reports

- Community Relations Plan
- Environmental Restoration Site Photograph Album

- Focused Biological Sampling and Preliminary Risk Evaluation Report
- Site 5 Risk Evaluation Report
- Background Literature Review Report
- Pilot Scale Treatability Study for Explosives Contaminated Soil
- York River Background Report
- WES Treatability Study Work Plan
- Sites 4 and 21 Post Removal Confirmatory Sampling Report and Baseline Risk Assessment
- Soil Assessment Report for SSA 12
- Habitat Evaluation
- Installation Restoration Program Site and SSA Photograph Album
- Relative Risk Ranking System Data Collection Investigation Report for SSAs 9, 10, and 14

Operable Units (OUs) have been determined for the following sites:

Site 5 - OU I
Site 16/SSA 16 - OU II
Site 12 - OUs III, IV, V
Sites 9 and 19 - OUs VI and VII
Sites 1 and 3 - OUs VIII and IX

Operable Unit No. I (Site 5)

A "No Action" Record of Decision for Site 5 was signed in September 1994. There are no other IRP activities associated with this site.

Operable Unit No. II (Site 16/SSA 16)

A "No Further Remedial Action with Institutional Controls" Record of Decision for Site 16/SSA 16 was signed in September 1995. There are no other IRP activities associated with this site.

Operable Unit No. III (Site 12 Area A Soil)

A soil/clay equivalent cover will be constructed on soil which exceeds the USEPA lead action level (400 mg/kg). Erosion control measures and institutional controls will be implemented. Institutional controls include groundwater and land use restrictions. Long-term surface water monitoring of Ballard Creek also will be implemented.

Operable Unit No. IV (Site 12 Areas B/C and Wood/Debris Disposal Area Soil)

A "No Action" Record of Decision for Site 12 Areas B/C and Wood/Debris Disposal Area soil was signed in May 1997. There are no other IRP activities associated with this OU.

Operable V (Site 12 Groundwater across the Study Area and Surface Water and Sediment in Ballard Creek

Long-term groundwater monitoring as per the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) will be implemented. The NCP includes a review of the remedy every 5 years. In addition, surface water and sediment within Ballard Creek will be monitored as agreed to by USEPA, VDEQ, and DoN.

Operable Unit No. VI (Site 19 Conveyor Belt Soil)

Removal of explosives contaminated soil (i.e., 2,4,6-trinitrotoluene greater than 15 mg/kg and RDX greater than 5 mg/kg) from beneath the conveyor belt (to a depth of 4 feet bgs) and biological treatment at the Site 22 biocell will be conducted in early FY 1998. Aluminum concentrations in surface soil (0-6" depth) will be excavated around Building 527 and placed in the bottom of the conveyor belt excavation. Excavated areas will be backfilled with clean fill and regraded. No monitoring or 5 year reviews are necessary for this OU.

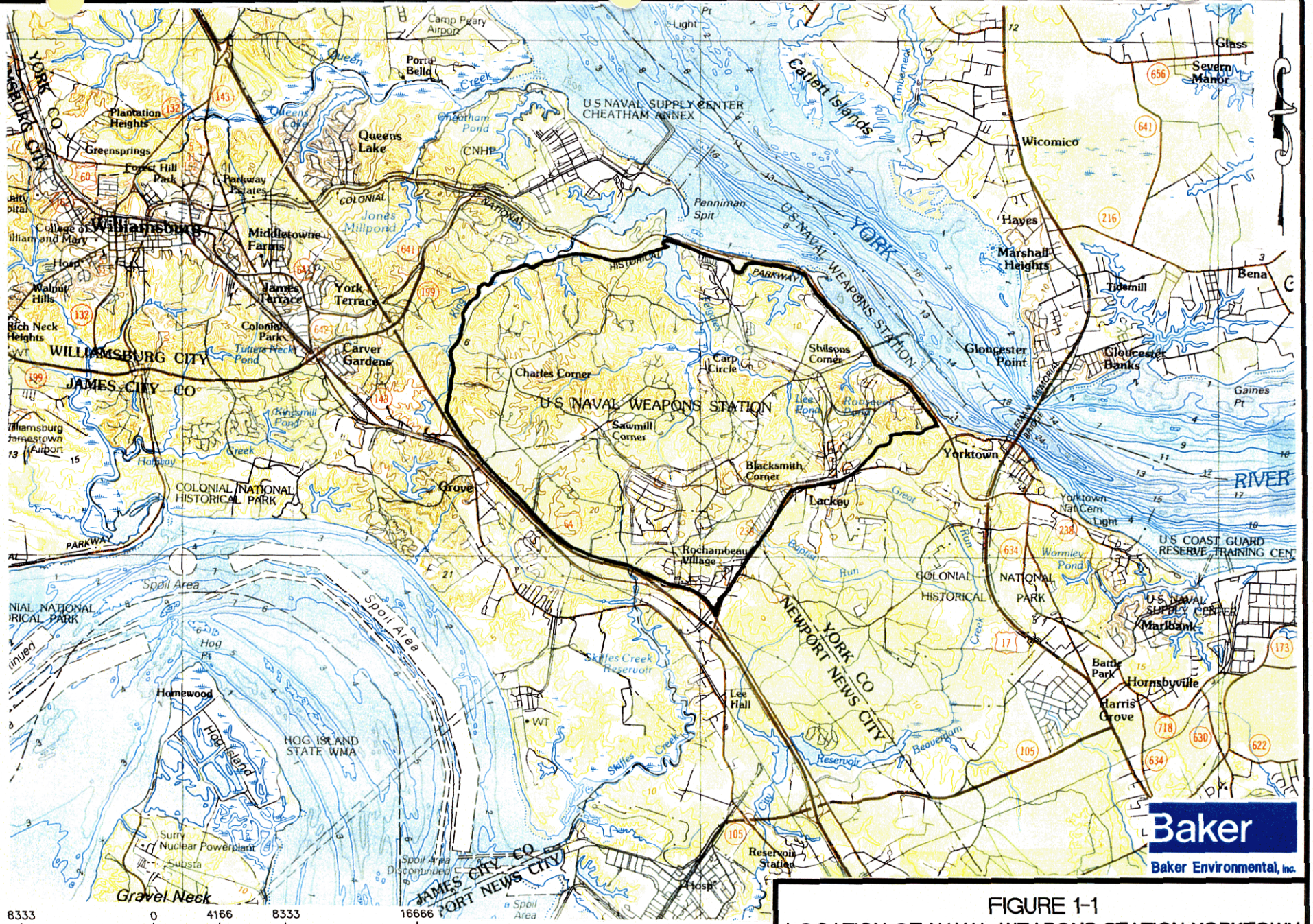
Operable Unit No. VII (Site 9 Soil, Surface Water and Sediment)

No Actionis specified for this OU because human health risks fall within acceptable risk ranges and remediation would result in greater harm to the environment than the presence of low level contamination.

1.3 Report Organization

The remainder of this report contains five sections. Section 2.0 presents a brief description of the sites and SSAs. Section 3.0 presents a summary of the procedures to be followed as part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process that will be used at WPNSTA Yorktown. Section 4.0 presents the system used to rank the sites implementing the relative risk ranking system. Section 5.0 provides the schedules for the planned activities at the Station and the assumptions used to develop these schedules. Section 6.0 provides the references used in preparing this document.

SECTION 1.0 FIGURES



SOURCE: U.S.G.S. 1:100,000-SCALE PLANIMETRIC MAP, WILLIAMSBURG, VIRGINIA, 1984.

FIGURE 1-1
LOCATION OF NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

01089 D01Y

2.0 SITE AND SSA DESCRIPTIONS

This section presents a brief description of each of the current RI/FS sites and SSAs. Table 2-1 lists these areas and Figure 2-1 depicts their approximate sizes and locations.

2.1 Site Descriptions

This section describes the history of the disposal practices at each of the recently investigated RI/FS sites included in the FFA, the four newly added sites which were former SSAs, and the site which has been added for investigation and evaluation which was not included in the FFA. The information presented is from previous studies (C.C. Johnson & Associates and CH2M Hill, 1984; USEPA, December 1992a and b) and has been updated based on additional historical review and discussions with WPNSTA Yorktown personnel. The site descriptions are presented in numerical order for ease of reference.

2.1.1 Site 1 - Dudley Road Landfill

Site 1 is a 6-acre area located just north of the headwaters of Indian Field Creek. The solid waste landfill was in use from approximately 1965 to 1979 for general disposal, with one area used for disposal of plastic lens grinding waste until 1983. The solid waste landfill operated under a conditional permit (No. 287) issued by the Commonwealth of Virginia. The site was originally used for sand mining. There is an abandoned sand reclamation pit on the eastern edge of the site and a pond in the western portion of the landfill area. The water level of the pond fluctuates greatly. Seasonal ponding also occurs in the southeastern section of the site. Wastes disposed within the depression created by sand mining included asbestos insulation from steam piping; oil, grease, paint, and solvent containers; nitramine-contaminated carbon; household appliances; scrap metal banding; construction rubble; plastic lens grinding wastes; tree limbs; lumber; packaging wastes; electrical wires; and waste oil. The landfill received an estimated 255 tons of waste during the time in which the site was in use. Currently, the landfill is covered by approximately 2 feet of soil and the abandoned sand reclamation area is covered by 8 feet of soil.

2.1.2 Site 2 - Turkey Road Landfill

Site 2 is a 5-acre landfill located east of Turkey Road in a wetland area adjacent to the southern branch of Felgates Creek. Operations at the landfill reportedly began in the 1940s and ceased in 1981. Wastes disposed in this landfill include mercury and carbon-zinc batteries, tree stumps and limbs, construction rubble, missile hardware (e.g., wings, fins and power packs), electrical devices, and unidentified drums and/or tanks. Waste quantities have been estimated at 240 tons during the period of use. Hard waste material (mine casings) was primarily located along the tributaries to the southern branch of Felgates Creek. A removal of hard waste material was conducted during the summer of 1994 at Site 2. Wastes encountered at Site 2 included large concrete masses, asphalt, HEPA filter drums, scrap metal, empty drums, miscellaneous construction/demolition debris, and unexploded ordnance (UXO). Excavated wastes consisted of batteries/soil. All ordnance items were certified as inert.

2.1.3 Site 3 - Group 16 Magazine Landfill

Site 3 is a 2-acre area located behind the Group 16 magazines, just south of Site 1 (separated from Site 1 by a ravine), along the headwaters of Indian Field Creek. The landfill is named for its proximity to the Group 16 Magazines. The history of this landfill is unrelated to the operations at the magazines. The landfill area was reportedly in use from 1940 to 1970 and received an estimated 90 tons of waste during the time in which the site was in use. The site was originally used for sand mining. Wastes that were disposed within the depression created by sand mining include solvents, sludge from boiler cleaning operations, grease trap wastes, Imhoff tank skimmings containing oil and grease, and animal carcasses. Currently, most of the site, which is overgrown with trees, is covered by approximately 2 feet of soil with some scattered surface debris.

2.1.4 Site 4 - Burning Pad Residue Landfill

Site 4 is a 6-acre landfill located adjacent to the explosives burning facility just south of West Road. This area was in use between 1940 and 1975 and received an estimated 595 tons of waste during the time in which the site was in use. Carbon-zinc batteries from underwater weapons, burning pad residues, tree stumps, fly ash from coal-fired burners, mine casings, electrical equipment, and transformers were reportedly buried at this site. A large battery disposal area was identified in the

southeastern portion of the site. In addition, construction debris, pipes, glass, concrete, bottles, cans, and drums have been discovered in various locations within the 6-acre area. An ash pile was present in the northeastern corner of the site. A removal action was conducted at Site 4 during the summer of 1994 and the area has been revegetated. Wastes encountered during the removal action included surface debris consisting of large concrete masses, empty drums, steel cables, tree stumps, assorted construction debris, asphalt shingles, slate shingles, scrap metal, and assorted porcelain fixtures including a kitchen sink. Excavated wastes consisted of batteries and explosives containing ash residue. Several suspect UXO devices also were encountered and identified as inert. An approximate total of 7,285 tons of material were removed from the site including 2,460 tons of ash, 3,025 tons of batteries, 1,295 tons of soil, and 510 tons of debris.

2.1.5 Site 5 - Surplus Transformer Storage Area

Site 5 is located near Barracks Road in the northeastern portion of the Station adjacent to the south end of Building 76. Site 5 is also referred to as OU I. The area is approximately 1,000 square feet in size and is fenced. Two concrete pads are located within the fenced area; the remainder of the area is covered with gravel. This site was used from 1940 to 1981 as a storage area for surplus polychlorinated biphenyl (PCB)-containing transformers which were stored on and around the two large concrete pads. After 1981, only non-leaking transformers were stored at this location. Currently, the stored transformers have been removed and the site is no longer used as a transformer storage area.

An estimated 300 pounds of PCB-containing fluids reportedly leaked from stored transformers. A cleanup effort, conducted in December 1982, included the removal of contaminated soil at Site 5. However, the success of this removal effort was not documented (i.e., no information on the amount of soil removed, verification samples, and type and source of backfill). The recently completed Round One RI investigation and a Risk Evaluation confirmed that the contaminated soil was successfully removed during this effort. Based on the results of the Risk Evaluation and limited confirmational sampling by USEPA Region III, a No Action ROD was finalized for Site 5 (OU I) on September 29, 1994.

2.1.6 Site 6 - Explosives-Contaminated Wastewater Impoundment

Site 6 contains a 3-acre, unlined, surface impoundment located adjacent to wetlands along a small tributary to the main branch of Felgates Creek. This area was in use between 1942 and 1975 and received contaminated wastewater from the explosives reclamation facility at Building 109 and from weapons loading operations at Building 110 (AOC C and SWMU 179). The impoundment area was used as a settling basin for nitramine-contaminated washdown water. In 1974, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge into the drainage way. A National Pollutant Discharge Elimination System (NPDES) permit was granted by USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to the Hampton Roads Sanitation District (HRSD). Currently, the impoundment collects only surface runoff from the area between Buildings 109 and 110 (Building 109, pipes and wires have been identified in the FFA for additional RI/FS activities). In addition, north of the impoundment and northwest of Building 1249, a previously excavated area has been identified via aerial photography. This area is currently wooded, but a concrete foundation and concrete rubble are evident.

2.1.7 Site 7 - Plant 3 Explosives-Contaminated Wastewater Discharge Area

Site 7 is a 300-foot long (approximately) drainage area located adjacent to wetlands and along a small tributary to Felgates Creek, approximately one mile upstream from the confluence of Felgates Creek and the York River. This drainage area received nitramine-contaminated wastewater from Loading Plant 3 between the years 1945 and 1975. In 1974, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge into the drainage way. An NPDES permit was granted by the USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to HRSD. Currently, the site has reverted to a natural drainage area and receives no discharge from the Plant 3 complex.

2.1.8 Site 8 - NEDED Explosives-Contaminated Wastewater Discharge Area

Site 8 is a 300-foot drainage way located along the eastern branch of Felgates Creek, approximately 1.5 miles from the confluence of the creek and the York River. This area received wastewater from the Naval Explosives Development Engineering Department (NEDED) complex (Building 456) from 1940 to 1975. The wastewater reportedly contained unspecified solvents, spent/neutralized acids, and

nitramine compounds. In 1974, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge into the drainage area. An NPDES permit was granted by USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to HRSD. Currently, the site has reverted to a natural drainage area.

2.1.9 Site 9 - Plant 1 Explosives-Contaminated Wastewater Discharge Area

Site 9 is a 600-foot drainage ditch located just east of Lee Pond, which empties into the eastern branch of Felgates Creek and topographically downslope from Site 19 (Section 2.1.15). This area was reportedly in use from the late 1930s to 1975. Contaminants in the wastewater from Plant 1 (Building 10) included nitramine compounds as well as organic solvents. During the more than 40 years that the drainage area was used, an estimated 6,800 pounds of nitramine- and solvent-contaminated material may have been discharged to the area. A carbon adsorption tower was installed in 1974 to treat the contaminated wastewater prior to discharge into the drainage area. An NPDES permit was granted by USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to HRSD. Currently, the site has reverted to a natural drainage way for surface runoff from surrounding areas and receives no discharge from the Plant 1 complex. A limited removal action was conducted for hard waste present at Site 9 in the natural drainage way between Bollman Road and Lee Pond during the summer and early fall of 1994. Two types of wastes were removed from Site 9; ordnance which consisted primarily of depth charges, and railroad ties.

A Final Record of Decision for Site 9 has been submitted to USEPA Region III which requires no remedial action for Site 9 soil, surface water, and sediment (OU VII). Groundwater will be evaluated at a later date. The ROD is awaiting signature by the Station and USEPA Region III.

2.1.10 Site 11 - Abandoned Explosives Burning Pits

Site 11 is an area of approximately 0.5-acres located south of Dudley Road, east of Main Road, west of Site 1, and north of a drainage channel leading to Indian Field Creek. This area was used from 1930 to 1950 for burning ordnance and ordnance-contaminated waste. Ashes and residues from the open burning of nitramine-containing wastes and sludges are potentially present at the site. During

the 20 years that the pits were used approximately 200 pounds of nitramine waste residues may have been deposited. Currently, the area is thickly vegetated.

2.1.11 Site 12 - Barracks Road Landfill

Site 12 is a 4-acre landfill located east of Barracks Road, north of the community of Lackey, and northwest of the Colonial National Historical Park along a drainage swale leading to Ballard Creek. This area was in operation from approximately 1925 to the mid-1960s. Wastes reported to have been disposed include refuse, scrap wood, and nitramine-contaminated packaging. Because this facility was the predecessor to the Dudley Road Landfill (Site 1), it is likely that wastes similar to those identified at Site 1 (Section 2.1.1), including solvents, also were disposed in this area. The landfill received an estimated 1,400 tons of waste during the time the site was in use. Adjacent to the landfill are two incinerators (SWMU 142 and SWMU 143) formerly used to burn a variety of waste, both industrial and nonindustrial. Incineration ash from incineration activities was disposed on the hillside behind the incinerator buildings. Scrap metal, charred wood and cloth, and medicine bottles were observed in the ash. Located approximately 400 feet east of Site 12 is the Wood/Debris Disposal Area (formerly SWMU 164 and now considered a part of Site 12), which is approximately 4 acres in size. This area consists of a steep ravine in which wooden pallets and construction debris have been disposed. Each area is currently vegetated and drains toward Ballard Creek. Based on the results of the risk evaluation, a ROD was finalized for Site 12 (OUs III, IV, and V) on May 16, 1997 and remediation of Area A was completed in November 1997.

2.1.12 Site 16 - West Road Landfill

Site 16 is a 5-acre area located adjacent to West Road near Indian Field Road. This site was operated from the early 1950s to the early 1960s. Site 16/SSA 16 also is referred to as OU II. Wastes reported to have been disposed include dry carbon-zinc (Leclanche) batteries, banding materials, pressure transmitting fluid, unknown types of chemicals, and 55-gallon drums (contents unknown). An investigation at this site in 1992 (Baker/Weston, 1993a) confirmed the presence of drums, scrap metal, batteries, mine casings, and construction debris. Another waste area was also identified beneath one of the drum piles. This waste area consisted of glass containers, cans, and newspapers. Landfill boundaries are not evident from visual observation of the area. The site is wooded, except for the northern portion along West Road, which is covered with grasses. A removal action was conducted

at Site 16 during the summer of 1994 to eliminate drums, scrap metal, batteries, and construction debris. Site 16 was evaluated in conjunction with SSA 16 because of its near proximity and geophysical data which indicate overlap between the two areas. Wastes encountered at this site included drums filled with silica gel desiccant, dry cell carbon/zinc batteries, surface debris, steel cables, underwater mine casings, and scrap ordnance. An approximate total of 420 tons of batteries, 60 tons of debris, 125 tons of silica gel, and the following ordnance items were removed: 3 Mk 13 torpedo sections, 3 Mk 51 Underwater mines, 29 Mk 10 Mod 3 mines, 8 500# general purpose bombs, 3 2000# general purpose bombs, 3 Mk 36 mines, 2 AN&M fragmentation bombs, 10 Mk 13 mines, 1 Zuni rocket motor, 1 1,000 pound armor piercing bomb, and 90 Burster tubes. All ordnance items were certified inert. Based on the results of the risk evaluation and limited confirmational sampling by USEPA Region III, a "No Further Remedial Action with Institutional Controls" ROD was finalized for Site 16/SSA 16 (OU II) on September 29, 1995.

2.1.13 Site 17 - Holm Road Landfill

Site 17 is a 2-acre landfill located south of Holm Road and east of Main Road. The site was operated for approximately 10 years, from the 1950s to the 1960s. Wastes reportedly disposed include acid batteries from underwater weapons, hydraulic fluids (Dolconik) from the demilling of torpedoes, other types of hydraulic fluids, drums from the Public Works Department and ordnance production shops, and scrap metal. An estimated 60 tons of waste was deposited during the period the landfill was in use. Currently, the site is overgrown with mature trees and no evidence of surficial waste is apparent. In addition, results from the geophysical investigation of this site during the Round One RI did not indicate any evidence of buried material.

2.1.14 Site 18 - Building 476 Discharge Area

Site 18 is a one-quarter mile long, unlined drainage ditch located north of Building 476 in the southeastern area of the Station along a small tributary leading to Lee Pond. This area was in use for approximately 20 years from the 1940s to the 1960s. The discharge into the area reportedly contained battery acid waste, consisting of hydrochloric acid or calcium hydroxide and dissolved metals such as lead, cadmium, nickel, and antimony. An estimated 100 to 200 pounds of metal may have been discharged during the operational period. Battery acid waste is no longer discharged from Building 476 into this drainage way.

2.1.15 Site 19 - Conveyor Belt Soils at Building 10

Site 19 is a 500-foot long soil strip located beneath and around Building 10, approximately 300 feet from Site 9 and connected to Site 9 via a concrete drainage channel. Nitramine-contaminated soil was reported beneath the conveyor belt between Buildings 10 and 98. In 1973/1974, soil below the conveyor belt was removed; however, later tests indicated that contamination remained.

2.1.16 Site 21 - Battery and Drum Disposal Area

Site 21 covers approximately 1 acre and is located south of West Road adjacent to the ravine that separates Site 21 from Site 4. Historical information for this site is limited. Wastes identified in this area include various sized cans and drums, dry carbon-zinc batteries (Leclanche), empty solvent containers, and scrap metal. A removal action was conducted at Site 21 during the summer of 1994. Wastes encountered at this site consisted primarily of batteries, empty drums, scattered debris and the seven drums of unknown oils previously discussed. A total of 6,070 tons of batteries and screened soil, 90 tons of soil, 650 tons of debris, and four drums of hazardous waste liquids were removed from the site. The site has been revegetated in those areas affected by the removal.

2.1.17 Site 22 - Burn Pad

Site 22 covers approximately 9 acres and is located in the central portion of the Station between Sites 4 and 21. A circular array of 11 steel burning pans were used for burning waste plastic explosives and spent solvents. The pans surround a 150-foot inch diameter circular area. Currently the burn pad is being used to conduct a pilot scale treatability study for explosives-contaminated soil. Soil samples were obtained from the "footprint" of the biocell prior to the placement of liners and footers for the rail system, upon which a gantry rests. Analytical data are not yet available for soil or other environmental media at Site 22.

2.1.18 Site 23 - Building 428 Teague Road Disposal Area

Site 23 (a portion of former SSA 1) is approximately 2.8 acres in size and is located northeast of Building 428, in the northeast portion of the Station along the Station boundary. The size of the site is comprised of 5 smaller areas of SSA 1 which are adjacent to the railroad tracks, the unnamed ditch

and is within the western portion of the former SSA boundary. The York River is located to the north of Site 23 and Roosevelt Pond bounds the area to the west/northwest. The area is wooded and bisected by a railroad track that was constructed in 1919 and operated until 1989. Disposal activities reportedly began in 1940 and ceased in 1960. A pier fire occurred in the mid-1950s and debris from this fire may have been disposed in this area (1955 to 1957). Areal photography suggests that past waste storage practices occurred at Site 23 (primarily in 1945). From 1960 to the present there is no evidence of additional waste storage or release. However, a land survey, conducted in the fall of 1993 as part of a removal action, indicated discrete piles of debris that appear to have been dumped on top of native soil, while other areas of debris appear to be partially buried. The debris was identified as concrete rubble; scrap metal; wooden pilings and railroad ties; empty fuel cans; empty, open, and corroded drums; asbestos pipe insulation; and shingles. A removal action was conducted during the summer and early fall of 1994 to remove surface debris present at Site 23. Items removed included two 55-gallon drums of paint cans/spilled paint, 443 tons of wooden creosote timbers (remains of the burnt pier), 763 tons of ordinary non-hazardous debris, 1,119 tons of debris containing non-friable asbestos, 1,680 pounds of pipe wrapped with friable asbestos, 31 tons of recyclable metal, and two truck batteries. Approximately 5,800 tons of TNT and trinitrobenzene contaminated ash/soil also was removed from an area north of the railroad tracks at the northeast portion of the site. Contaminants of potential concern at Site 23 include polynuclear aromatic hydrocarbons (PAHs) that may be associated with former disposal activities. Additional IRP activities will include investigation of subsurface contamination, impacts on shallow groundwater and an ecological evaluation/habitat evaluation of the unnamed ditch.

2.1.19 Site 24 - Aviation Field

Site 24 (a portion of former SSA 6) is an area (approximately 15 acres in size) located around the helicopter landing pad. It is bounded by Bellfield Road to the north, railroad tracks to the east, Main Road to the south, and storage areas to the west. The site is an open grassy area around the helicopter landing pad where mine components coated with PCB-1254 containing antifoulant were discovered in the subsurface soil. Historically, the area was used as an aviation field until 1927, after which it was used for storage of munitions in underground caches. Aerial photography indicates that peak storage activity on the ground surface occurred in 1968. No storage of liquid or hazardous waste was reported or observed. In addition, this area may also have been used briefly as an explosives burning area although available data do not indicate the presence of nitramines/nitroaromatics.

2.1.20 Site 25 - Building 373 Rocket Plant

Site 25 (a portion of former SSA 7), the Rocket Plant, is approximately 0.14 acres in size and is located immediately northwest of Building 373. Site 25 consists of a 500-gallon (approximately) precast concrete pipe, which was used as an underground storage tank (UST), and the associated cast iron piping. The concrete pipe was installed vertically into the ground with a bottom section cast in the concrete pipe.

Prior to the 1960s, wash/rinse water from the cleanup of formulation/pouring equipment drained into a settling basin within the building for removal of suspended solids. The solids were open burned at Site 4 (Burning Pad Residue Landfill). The wash/rinse water subsequently was discharged into Felgates Creek. The discharge line to the creek was plugged in the early 1960s and a 500-gallon UST was installed to contain the wash/rinse water. From the 1960s to 1980s, the UST received batch wastes from NEDED assembly operations of 2.75-inch rockets as well as the wash/rinse waters. Once the tank was filled, the water was filtered through a carbon unit and discharged to the sanitary sewer system. The UST was closed in the early 1980s when the current aboveground storage tank (AST) was installed. Materials contained within the tanks consisted of binders, curatives, catalysts, stabilizers, and explosives.

In addition to the above areas, USEPA Region III personnel reportedly found "hard waste" (empty mine casings and other miscellaneous wastes) in the woods south/southeast of SSA 7. A removal action was conducted in June/July 1996 to remove the 500-gallon UST and associated piping. During the removal action, the bottom section, which had been cast to the concrete pipe, was heavily stained. The soil from beneath the UST was removed. There were no visible signs of staining along the sides of the UST or in the soil surrounding the sides of the UST. A strong solvent odor was prominent during the removal activities.

2.1.21 Site 26 - Building 1816 Mark 48 Waste Otto Fuel Tank

Site 26 (formerly SSA 18) is approximately 6.7 acres in size and is located in the central portion of the Station at Building 1816, north of Sharpe Road and west of the intersection of Sharpe Road and Lee Road. A 2,500-gallon concrete UST and network of ancillary drain pipes that were formerly used to store waste Otto fuel was located within this area. This fuel consists of a mixture of Otto fuel and

water, which may have also contained oil, denatured ethyl alcohol, detergent, and trace amounts of cyanide, halogenated hydrocarbons, and heavy metals. In late 1987, waste Otto fuel was discovered leaking from the tank. The fuel was removed, the tank was cleaned, and a RCRA closure permit was filed. In March 1995, the 2,500-gallon waste Otto fuel UST was removed along with an 8,000-gallon UST located in the vicinity. Site 26 has been retained as an IRP site because of chlorinated volatiles detected in shallow groundwater. The extent of this contamination has not yet been adequately defined.

2.2 Site Screening Area Descriptions

This section describes the history of past disposal practices at each of the SSAs currently included in the FFA and the four SSAs which have been added for investigation and evaluation which were not included in the FFA. As these are primarily newly identified areas, there is limited information available. The information contained in the following sections has been adapted from USEPA Region III's "RCRA Solid Waste Management Unit Investigation," (December 1992) and "Study Area Analysis, Yorktown Naval Weapons Station Yorktown, Yorktown, Virginia," Volume 1 (November 1992).

2.2.1 Site Screening Area 2 - Former EOD Burning/Disposal Area

SSA 2 is an irregular, U-shaped area located at the north end of the existing Explosives Ordnance Disposal (EOD) range and occupies an area of approximately 400 feet by 450 feet. The area was wooded and strewn with non-explosive arming devices, MK 46 shipping containers, various types of scrap metal, and debris. Numerous earthen berms and depressions indicate the historical use of bulldozers and other earth-moving equipment throughout the SSA. Demolition records indicate that the area was the original site of the EOD range for WPNSTA Yorktown and was actively used throughout the 1950s and 1960s for routine destruction of ordnance material. The area was closed in 1970 and operations were moved south to the present EOD range location. Anecdotal information indicates that the move was prompted by growing concerns that range operations might cause forest fires in the wooded areas bordering the SSA. A removal action was conducted at SSA 2 during the summer and early fall of 1994 to remove three dump truck loads of scrap metal, 14 containers of lead, and 11 live ordnance pieces. The scrap metal included torpedo casings, bomb casings, powder cans, used detonation devices, tractor parts, marsh matting and other miscellaneous debris. Based on the

results of the SSP, no further RI/FS activities will be conducted at SSA 2; however, long-term monitoring of groundwater will be conducted as part of the Part B RCRA permit. Specifications of the long-term monitoring will be presented as part of the final permit.

2.2.2 Site Screening Area 3 - Fire Training Pits and Vicinity

SSA 3 occupies an area of approximately 2.7 acres and is located just north of Main Road and Site 16, the West Road Landfill, in the north central portion of the Station. The area consists of three concrete oil pits; one is T-shaped and the other two are rectangular. One rectangular pit is located at the eastern end of the field, the second rectangular pit is located in the western end of the field, and the T-shaped pit is located in the central section of the field, where a patch of stressed vegetation is evident. Berms were built around each of the pit areas in 1986 and a roof was added to each area in 1991. Debris was reportedly placed in each of the pits, doused with jet fuel and set on fire. In addition, in the vicinity of the pits, there appeared to be portions of a tanker trailer that was formerly used for confined space entry training. The trailer is open on the bottom and placed directly on the soil. The inside of the trailer is blackened and burned. A removal action was conducted during the late spring/early summer of 1996 to remove the fire training pits.

2.2.3 Site Screening Area 4 - Weapons Casing/Drum Disposal Area

SSA 4 occupies approximately one-half acre between Main Road and Bypass Road at the headwaters of one of the tributaries leading to Roosevelt Pond. The area consists of a ravine in which debris, including weapons casings and drums, were deposited. There is a flat, grassy area just along the roadway, indicating that this area may have been an old landfill. Some of the material in the ravine may have been present as a result of landfilling activities. A removal action was conducted at SSA 4 during the summer and early fall of 1994 to remove surface debris in the ravine. The wastes encountered included various types of ordnance, empty drums, miscellaneous construction/demolition debris, fire extinguishers, and nominal amounts of paint wastes and paraffin wax.

2.2.4 Site Screening Area 5 - Bypass Road Landfill

SSA 5 is located just north of Bypass Road and covers approximately 0.9 acres. This area consists of a ravine in which debris is evident. A small stream passes through the site and exits from a culvert

that begins south of Bypass Road. The small stream is the second tributary which flows into Roosevelt Pond. Both Bypass Road and the railroad system were constructed in 1919 and are still in use.

Metal debris, with lesser amounts of concrete and miscellaneous materials, were present at SSA 5. Two empty drums were present. No wood materials were identified among the surface debris piles. A removal action was conducted at SSA 5 during the summer of 1994 to remove the small amount of ordinary debris including empty drums, pipes, scrap metal, and rubble.

2.2.5 Site Screening Area 8 - Building 350 Rail Roundhouse Maintenance Area Trench Outfall

SSA 8 occupies an area of approximately 0.4 acres, and is located outside Building 350, on the western side of the railroad tracks, in the southeastern corner of the Station. Within Building 350 there is one concrete trench, which was (and is presently) used to access train engines from below. The trench is used for train maintenance and there are no records of any releases from the trench. Some dripping from the maintenance activities may have fallen into the trench, but these were covered with absorbent material and put into drums for disposal. The floor of the trench appears heavily stained; however, the trench drain has been plugged. The drain pipe from the trench leads to a catch basin approximately 100 yards south of the locomotive repair building. The outfall associated with the catch basin extends under the railroad tracks toward Bollman Road. Natural surface drainage (overland flow) extends under Bollman Road toward the wooded area east of Site 18. The Final SSP Report for SSA 8 (Baker, July 1997) concluded that this area should not be retained as an IR site for further investigation.

2.2.6 Site Screening Area 9 - Building 1751 Chemistry Laboratory Neutralization Unit and Drainage Area

SSA 9 occupies an area of approximately 1.9 acres, and is located adjacent to Building 1751 in the north central portion of the Station (near Site 8, the NEDED Explosives-Contaminated Wastewater Discharge Area). This SSA consists of a below-grade cylindrical unit into which acids from the Chemistry Lab are discharged for neutralization. The integrity of the unit is unknown, it is below ground. The unit was in operation from 1969 to early 1995. The process was diverted to the sanitary

sewer and ultimately to HRSD in 1995. In addition, there are four underground septic tanks in the area. Historical records indicate that industrial waste may have been stored in these tanks.

2.2.7 Site Screening Area 10 - Building 28 X-Ray Facility Tank Drain Field

SSA 10 is located at Building 28 in the south central portion of the Station and occupies an area of approximately 5.8 acres. The X-ray process was begun in the late 1960s. The area consists of a septic tank drain field that receives sanitary wastewater from the X-Ray Facility at Building 28. By the end of Fiscal Year 1997, the wastewater will be diverted to the sanitary sewer and ultimately to HRSD. Before silver recovery units were installed, the tanks may have stored hazardous wastes. Stressed vegetation is apparent in this area.

2.2.8 Site Screening Area 11 - Building 3 Neutralization Unit

SSA 11 is located at the southeast corner of Building 3 in the eastern section of the Station (southwest of Site 12 near SSAs 12 and 13) and occupies an area of approximately 0.2 acres. SSA 11 consists of an open, metal tank (approximately 3 feet by 5 feet by 3 feet deep) and associated trench and sump. This tank was apparently used for neutralization of wastes from an unknown process, but has been inactive for at least 15 years. Chipping and pitting are evident in the trench and sump. The trench drains to the storm sewer system. The outfall from the SSA 11 storm sewer system is located in the vicinity of the headwaters of Ballard Creek.

The Final SSP Report for SSA 11 (Baker, July 1997) concluded that this area should not be retained as an IR site for further investigation.

2.2.9 Site Screening Area 12 - Public Works Storage Yard/Building 683 Vicinity

SSA 12 is approximately 1.5 acres in size and is located in the Public Works (PW) storage yard and the surrounding area in the eastern portion of the Station near Site 12 and SSAs 11 and 13. Surface water bodies are not located in near proximity of this SSA. One area consists of a field, approximately 150 feet by 300 feet, in which waste generated by the Public Works Department is stored. Drums of used motor oil and used batteries were observed on pallets and directly on the ground (Kearney, 1992). Historically, the area was used to store old tires. Another area, controlled by Building 645, consists

of a fenced in yard used to store new electrical transformers and other electrical equipment. Used or damaged transformers were not stored at SSA 12. The new transformers were staged on pallets before installation. Historical records indicated that wastes may have been stored in this area in the past. In addition, there is a formerly wooded area where demolition debris were reportedly deposited. Concrete debris are visible at the edge of the area. Currently, approximately one-half of the area is used for vehicle storage.

In September 1994, a soil investigation was conducted by Baker Environmental, Inc. (Baker) at SSA 12 related to the proposed location of a new building (P-518). This investigation involved the sampling of surface and subsurface soil to determine if site soil was contaminated, and thus, affecting the construction of the new building (Baker, 1995).

In February 1996, the potential presence of an UST was discovered during site reconnaissance when a partially buried pipe was discovered in the area. It is reported that the UST may have been a gasoline tank. This tank was removed prior to any formal UST program; therefore, records of the removal are not available.

The Final SSP Report for SSA 12 (Baker, July 1997) concludes that this area should not be retained as an IR site for further investigation.

2.2.10 Site Screening Area 13 - Building 529 Battery Drainage Area

SSA 13 occupies an area of approximately one-half of an acre and is located outside of Building 529 in the eastern portion of the Station near Site 12 and SSAs 11 and 12. The area consists of pavement where neutralized battery washwater, created from washing the external portion of the batteries and neutralizing the washwater with baking soda, was released and migrated to a storm drain approximately 100 feet away. The storm drain is located below the southeastern corner of the concrete platform of Building 529. The pavement on the western side of Ballard Road and the eastern side of Building 529 is sloping on all sides toward the storm drain. The surface water is channeled to the storm sewer system and eventually to the Ballard Creek headwaters. The entire area is asphalt covered. The pavement is currently worn, but intact, with some vegetation apparent.

2.2.11 Site Screening Area 14 - Building 537 Discharge to Felgates Creek

SSA 14 occupies an area of approximately 0.4 acres and is located outside of Building 537 between Site 8 (NEDED Explosives-Contaminated Wastewater Discharge Area) and SSA 9 (Building 1751 Chemistry Laboratory Neutralization Unit and Drainage Area), in the north central portion of the Station. This SSA consists of a pipe leading from the building, through which nitramine-contaminated wastewater was reportedly discharged to Felgates Creek. Some rubble and rusted piping were found where this pipe was reportedly located.

The Final SSP Report for SSA 14 (Baker, July 1997) concluded that this area should not be retained as an IR site for further investigation.

2.2.12 Site Screening Area 15 - Sewage Treatment Plant #1/Sludge Drying Beds and Discharge Area

SSA 15 is comprised of the sewage treatment plant (STP) #1/Sludge Drying Beds and Discharge Area and represents AOCs 5, 6, and 7, which are also former sewage treatment plants. SSA 15 is located in the southeastern corner of the Station, east of Buildings 3 and 4 and south of Site 12 (Barracks Road Landfill). This site covers approximately 0.3 acres and consists of an Imhoff tank, a trickling filter, a sludge drying bed, and a chlorination unit. Wastewater reportedly entered the Imhoff tank, which operated as a primary settling basin for the waste. The water then was passed through the trickling filter for biological treatment and pumped back to the Imhoff tank for secondary settling. The water was chlorinated in the chlorination unit and discharged to a tributary of Ballard Creek. Sludge from the Imhoff tank periodically was removed and placed in the sludge drying bed. STP #1 received and managed only sanitary waste from physical plants and the Officer's Club located nearby, but may have treated nitramine-containing and other industrial wastewater. WPNSTA Yorktown personnel have reported, during the operation of STP #1, a mercury-containing bearing on the trickling filter cracked, allowing mercury to be released. Also, WPNSTA Yorktown personnel indicated that sludges from SSA 15 were transported to SSA 6 and landfarmed. Currently, substantial vegetation is present in the sludge drying bed. Based on the results of the SSP, no further RI/FS activities will be conducted however, because of its proximity to Site 12 and the Industrial Area, final action at SSA 15 will be addressed in the Site 12 ROD. No further RI efforts are recommended for AOCs 5, 6, and 7.

2.2.13 Site Screening Area 16 - Building 402 Metal Disposal Area and Environs

SSA 16 is located between West Road and a set of railroad tracks, just west of Building 402 and encompasses the northern area of Site 16. The area is a large dirt field, approximately 0.4 acres in size, where scrap metal was stored. Site 16/SSA 16 also is referred to as OU II. Dumpsters containing scrap metal are located on the lower southwest side of the yard; scrap metal and empty drums also are scattered over the ground surface near these dumpsters. This area was reportedly used for scrap metal storage prior to the construction of the Hazardous Waste Storage Facility.

SSA 16 was evaluated in conjunction with Site 16 because of its near proximity and geophysical data which indicate overlap between the two areas. Based on the results of the risk evaluation and limited confirmational sampling by USEPA Region III, a "No Further Remedial Action with Institutional Controls" ROD was finalized for Site 16/SSA 16 (OU II) on September 29, 1995.

2.2.14 Site Screening Area 17 - Building 1456 Mark 46 Waste Otto Fuel Tank

SSA 17, which occupies an area of approximately 330 feet by 310 feet, is located northwest of SSA 18 in the central portion of the Station. This SSA is located approximately 400 feet north of Sharpe Road and approximately 2,000 feet northwest of the intersection of Sharpe and Lee Roads. This area previously consisted of an inactive, 5,000-gallon, underground steel tank and a network of ancillary drain pipes; the tank was located under the parking apron. This tank was used to store waste Otto fuel generated during cleaning procedures associated with MK 46 torpedo activities. Waste Otto fuel is a mixture of Otto fuel and water which potentially contained oil, denatured ethyl alcohol, detergent, and trace amounts of cyanide. In June 1988, a tank integrity test was performed on the waste Otto fuel tank. The tank system failed the hydrostatic integrity test and was subsequently taken out of service, the floor drains leading to the tank were sealed, and a RCRA closure and post-closure plan was submitted to VDEQ in November 1988. The 5,000-gallon waste Otto fuel UST system was removed in March 1995. The MK 46 torpedo shop subsequently accumulated waste Otto fuel in compatible, 55-gallon drums, which were stored for less than 90 days prior to transport off site for disposal. Waste Otto fuel is not currently generated or stored at SSA 17. Based on the results of the SSP, no further RI/FS activities will be conducted at SSA 17.

2.2.15 Site Screening Area 19 - Beaver Road/Ponds 11 and 12 Drainage Area and Environs

SSA 19, which occupies an area of approximately 164 acres (3,000 feet by 3,500 feet), is located in the northwestern section of the Station and encompasses the area surrounding the EOD range, including drainage into Ponds 11 and 12. A smaller pond, Pond 11A, is situated along the northwest perimeter of the SSA. SSA 19 is circumjacent to SSA 2. The area is used for explosive waste destruction. The EOD range began operations in 1970 when the former disposal range (SSA 2) was taken out of service. Soil is stacked approximately 40 feet above ground surface, holes are dug about 12 to 20 feet into the mound of soil, the holes are filled with explosive ordnance and backfilled. The explosives are detonated; the same soil is used repeatedly. During the winter, this area is covered and grass is grown to prevent erosion. Unlined settling ponds collect runoff, through pipes, from this area. Effluent from these ponds may discharge to nearby Ponds 11 and 12 and ultimately to King Creek and the York River. In addition, nine metal containers of varying sizes are used for burning explosive waste when hotter burning is required. This type of burning is performed one to two times per year, primarily in the summer. Based on the results of the SSP, no further RI/FS activities will be conducted at SSA 19.

2.2.16 Site Screening Area 20 - Lee Pond

Lee Pond is an approximately 4.1 acre pond located in the east central portion of the Station. The pond receives drainage from Building 10 at Site 9 located due east of the pond. The drainage area is approximately 500 to 600 feet in length and was subjected to a limited removal action in 1994. Lee Pond also receives stormwater runoff from the industrial area and sites therein such as Sites 18 and 19 and SSAs 8 and 22.

Lee Pond empties into a channel which in turn flows around the Site 16/SSA 16 study area into Felgates Creek. The pond has been subjected to limited investigations by the Commonwealth of Virginia in 1994 and a Focused Biological Sampling and Preliminary Risk Evaluation (Baker, 1993b). Water levels in Lee Pond are raised and lowered during summer and winter respectively for support of the local ecology.

2.2.17 Site Screening Area 21 - Roosevelt Pond

Roosevelt Pond is an approximately 22.2 acre pond located in the eastern portion of the Station. The pond receives stormwater from the industrial area and sites therein such as SSAs 4 and 5.

Roosevelt Pond empties into the York River. The pond has been subjected to limited investigations by the Commonwealth of Virginia in 1994 and a Focused Biological Sampling and Preliminary Risk Evaluation (Baker, 1993b).

2.2.18 Site Screening Area 22 - Sand Blasting Grit Pile

Site Screening Area 22 (formerly AOC 4) is an area which consists of approximately 0.5 acres in the eastern portion of WPNSTA Yorktown adjacent to Building 530. Building 530 was built and put into operation in 1945 and operated until the early to mid 1980s. Bomb fins and wings, inert bomb casings, and various other inert ordnance items were grit blasted inside Building 530 in a blasting booth and outside at the northern end of the building near a personnel door. Blasting material may have been composed of coal slag or steel grit. The blasting booth within the building utilized a dust collector. The dust which was accumulated in the dust collector may have been deposited in the vicinity of the northern side of Building 530. AOCs were investigated in 1995 by Baker. Elevated concentrations of cadmium were detected in SSA 22 soil samples which warranted its retention for further investigation under the SSP.

2.2.19 Site Screening Area 23 - Coal Storage Area

The Coal Storage Area (formerly AOC 21) is an area of approximately 1 acre adjacent to Building 708. Coal was stored in this area from 1953 to the late 1970s. The coal pile was surrounded by a 9-inch thick reinforced concrete wall. The walled in storage area is referred to as Building 1827. Every 20 feet a hole 2 by 6 inches was located at the ground surface of Building 1827 on the north side of the walled area. These holes were to release water from the coal storage area. Currently, only residual coal remains within the coal storage area. As with other AOCs, SSA 23 was investigated in 1995 and elevated concentrations of inorganics including arsenic and vanadium were detected in surface soil samples. Some samples were collected near the drainage holes in the wall surrounding the coal pile. Additional investigation under the SSP is therefore necessary to determine potential human health risks and ecological concerns associated with this SSA.

2.2.20 Site Screening Area 24 - Bracken Road Incinerator and Environs

The Bracken Road incinerator (formerly AOC 22) is in an area approximately 0.1 acres located north of Site 5 (Surplus Transformer Storage Area), northeast of a cooling pond (76A), and south of railroad tracks. The USEPA conducted sampling activities and detected metals and nitramine compounds

exceeding regulatory screening levels. Additional investigation under the SSP is therefore necessary to determine potential human health risks and ecological concerns associated with this SSA.

SECTION 2.0 TABLES

TABLE 2-1

SITES AND SITE SCREENING AREAS
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Site No.	Site Name	SSA No.	SSA Name
1	Dudley Road Landfill	2	Former Explosives Ordnance Disposal Burning/Disposal Area
2	Turkey Road Landfill	3	Fire Training Pits and Vicinity
3	Group 16 Magazine Landfill	4	Weapons Casing/Drum Disposal Area
4	Burning Pad Residue Landfill	5	Bypass Road Landfill
5	Surplus Transformer Storage Area	8	Building 350 Rail Roundhouse Maintenance Area Trench Outfall
6	Explosives-Contaminated Wastewater Impoundment	9	Building 1751 Chemistry Laboratory Neutralization Unit and Drainage Area
7	Plant 3 Explosives-Contaminated Wastewater Discharge Area	10	Building 28 X-Ray Facility Drain Field
8	Naval Explosives Development Engineering Department (NEDED) Explosives-Contaminated Wastewater Discharge Area	11	Building 3 Neutralization Unit
9	Plant 1 Explosives-Contaminated Wastewater Discharge Area	12	Public Works Storage Yard/ Building 683 Vicinity
11	Abandoned Explosives Burning Pits	13	Building 529 Battery Drainage Area
12	Barracks Road Landfill	14	Building 537 Discharge to Felgates Creek
16	West Road Landfill	15	Sewage Treatment Plant #1 Sludge Drying Beds and Discharge Area
17	Holm Road Landfill	16	Building 402 Metal Disposal Area and Environs
18	Building 476 Discharge Area	17	Building 1456 Mark 46 Waste Otto Tank
19	Conveyor Belt Soils at Building 10	19	Beaver Road/Ponds 11 and 12 Drainage Area and Environs
21	Battery and Drum Disposal Area	20	Lee Pond
22	Burn Pad	21	Roosevelt Pond
23	Building 428 Teague Road Disposal Area	22	Sand Blasting Grit Pile (formerly AOC 4)
24	Aviation Field	23	Coal Storage Area (formerly AOC 21)
25	Building 373 Rocket Plant	24	Bracken Road Incinerator and Environs (formerly AOC 22)
26	Building 1816 Mark 48 Waste Otto Tank		

Note:

Shading indicates field investigations and report writing activities have been completed.

SECTION 2.0 FIGURES

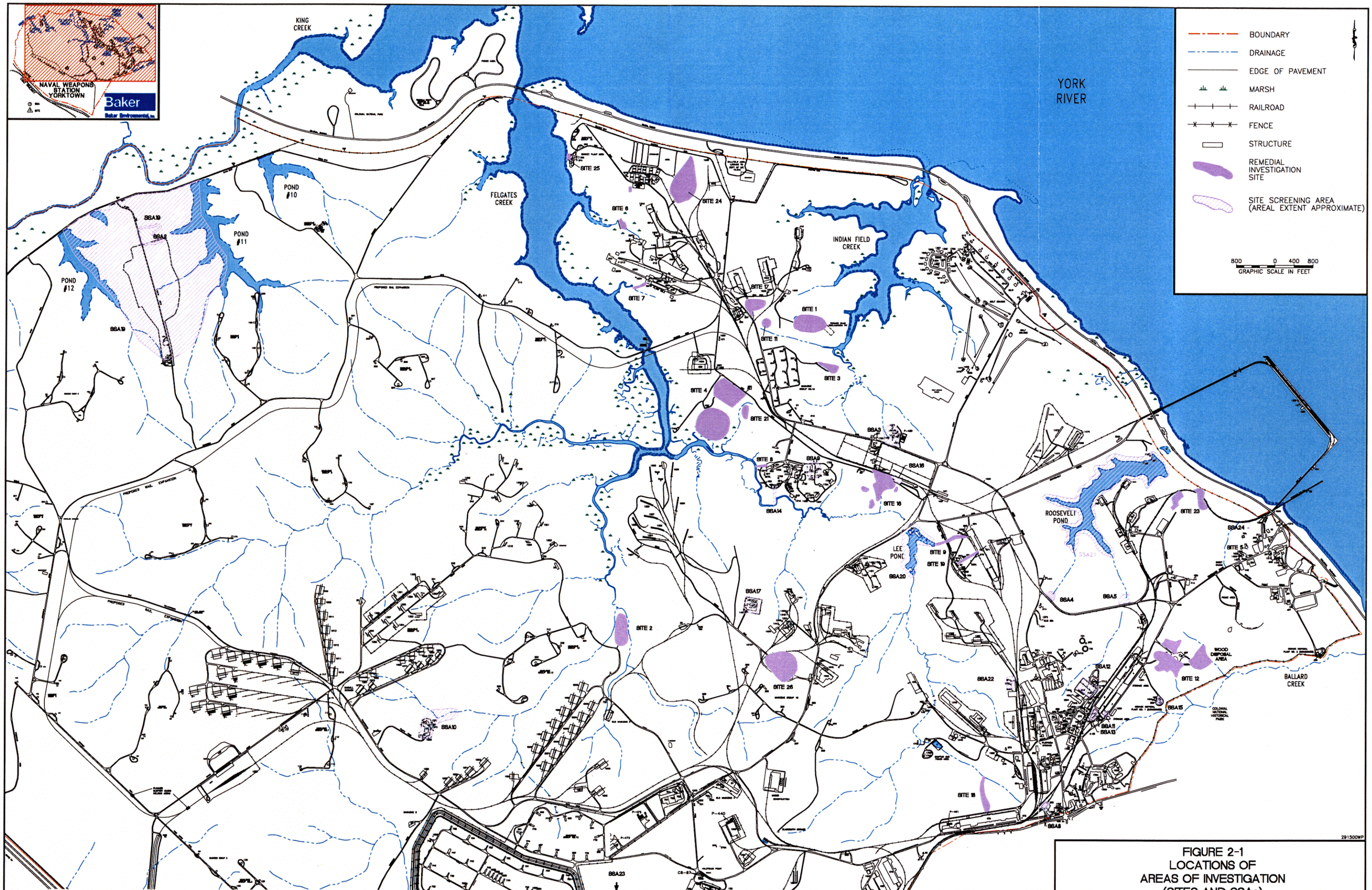


FIGURE 2-1
LOCATIONS OF
AREAS OF INVESTIGATION
(SITES AND SSAs)

NAVAL WEAPONS STATION YORKTOWN — YORKTOWN, VIRGINIA

SOURCE: NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA.

3.0 CERCLA PROCESS ACTIVITIES

The investigation and remediation activities to be completed at identified sites at WPNSTA Yorktown will follow the guidelines established by the USEPA as part of the CERCLA process. Once an SSA has been identified as potentially containing contaminated media (soil, sediment, groundwater, etc.) and the site screening investigation and risk screening process (both limited in scope) have determined that a potential risk to human health and/or the environment exists, the SSA will be subjected to full RI/FS process. However, a removal action and/or an interim remedial action also may be appropriate. The decision to implement one or a combination of these actions at either already established RI/FS sites or SSAs is dependent upon the nature and extent of contamination at the site, how well it is characterized, the degree of associated human health and/or environmental risks, and the complexity of the potential remedial actions (i.e., how apparent the optimal remedy is). CERCLA processes are described below.

3.1 RI/FS Process

The RI/FS process is generally the longest step in investigating and remediating CERCLA sites. Figure 3-1 outlines the steps to remedial action under the RI/FS process. For the RI/FS, a full RI, Baseline Risk Assessment, and FS are completed, along with a Proposed Remedial Action Plan (PRAP) prior to the formal public comment period. After the public comments have been addressed as part of the Responsiveness Summary in the ROD, the ROD is placed in the Administrative Record. Subsequent to completion of the ROD, remedial design (RD) activities are initiated, followed by the implementation of the remedial action (RA).

Presumptive remedies also are part of the RI/FS process. Presumptive remedies apply to certain types of sites such as landfills which received a variety of waste types and where containment of these wastes is the preferred remedial alternative. Candidate sites for presumptive remedies should be identified early in the investigative process. Once identified, presumptive remedy sites follow the same general process as presented in Figure 3-1, but have streamlined RIs and FSs. Streamlined RI/FS documents evaluate the sites and site dynamics, evaluate risks and bypasses the initial screening and identification of remedial alternatives other than containment.

The FFA for WPNSTA Yorktown mandates the integration of the CERCLA Program with Station RCRA issues. The SSP was developed jointly by USEPA Region III, Commonwealth of Virginia and the Navy to address RCRA SWMUs and AOCs in a manner consistent with the CERCLA process. RCRA SWMUs and AOCs have been designated as SSAs and are evaluated to determine whether significant contamination exists to warrant further investigative or remedial activities (Figure 3-2). If unacceptable human health risks or ecological risks do not exist, SSAs are recommended for no further action. If risks do exist, removal actions, interim actions, or additional RI/FS activities are proposed and the SSA becomes an IRP site.

3.2 Removal Actions

Removal actions are those actions taken to clean up or remove released hazardous substances from the environment. In addition, a removal action also may be implemented to mitigate, minimize, or prevent damage to human health and the environment from a release or threat of a release by limiting exposure to the hazardous substances (i.e., security fencing or access limitation). Removal actions are classified as either time-critical or non-time-critical. Time-critical removal actions are conducted when there is an imminent threat to human health and the environment, such as corroded drums of wastes that are leaking into groundwater. Non-time-critical removal actions are defined as actions that, based on the degree of potential risk to human health and/or the environment, may be delayed for six months or more before on-site cleanup is initiated.

All removal actions which occurred at WPNSTA Yorktown were classified as non-time-critical removal actions. A removal action may be completed any time during the RI/FS process; however, it will often begin prior to the completion of the RI/FS to mitigate the spread of contamination. There are no removal actions currently planned at WPNSTA Yorktown.

Figure 3-3 shows the general process for non-time-critical removal actions. Rather than preparing an FS, an Engineering Evaluation/Cost Analysis (EE/CA) is completed which focuses only on the substances to be removed and not on all potentially contaminated media (other contaminated media will be addressed as part of the RI/FS process). Because the scope of a removal action is typically smaller than a final, full-scale remedial action, the time frames for completion of the EE/CA, related design efforts, and implementation of the removal action are much shorter than for a full scale FS.

The opportunity for public involvement is similar to the FS, with a public comment period and a Removal Action Memorandum completed to document the evaluation and choice of removal action procedures. It should be noted that a removal action may become the final remedial action if the risk screening/assessment results indicate that further remediation is not required for protection of human health and the environment. Where no further action is required at a site that has undergone a removal action, a no action ROD will be signed between the concerned parties in order to remove the site from the program.

3.3 Interim (Early) Remedial Actions

Early remedial actions are those activities which are designed to provide temporary mitigation of potential risks posed by a site until a final remedial action is selected. As with removal actions, early remedial actions usually take place prior to initiation of a full-scale FS because of the risks posed by the contamination in the area. For example, installation of a groundwater pump and treat system to control plume migration would be considered an early remedial action. Initiation of an early remedial action early in the CERCLA process might reduce costs in the long term by limiting the extent of contaminant migration.

The early remedial action process is shown in Figure 3-4. Rather than preparing an FS, a Focused FS is completed, as is an early action ROD to document the activities to be performed. Design and implementation activities follow. It should be noted that an early remedial action may become the final remedial action if the risk screening/assessment results indicate that further remediation is not required for protection of human health and the environment.

3.4 Presumptive Remedies

Presumptive remedies help to streamline the site cleanup process by eliminating the need for initial identification and screening of alternatives during the FS. Presumptive remedies are preferred technologies for common categories of sites based on historical patterns of remedy selection at similar types of sites. The selection of a presumptive remedy must be considered at the beginning of the RI/FS process so that particular attention can be paid to the risk evaluation, areas of potential contaminant migration, and identification of hot spots.

3.5 Treatability Studies

Treatability studies will be conducted prior to finalization of FS reports to better evaluate a particular technology's performance. Treatability studies are conducted to:

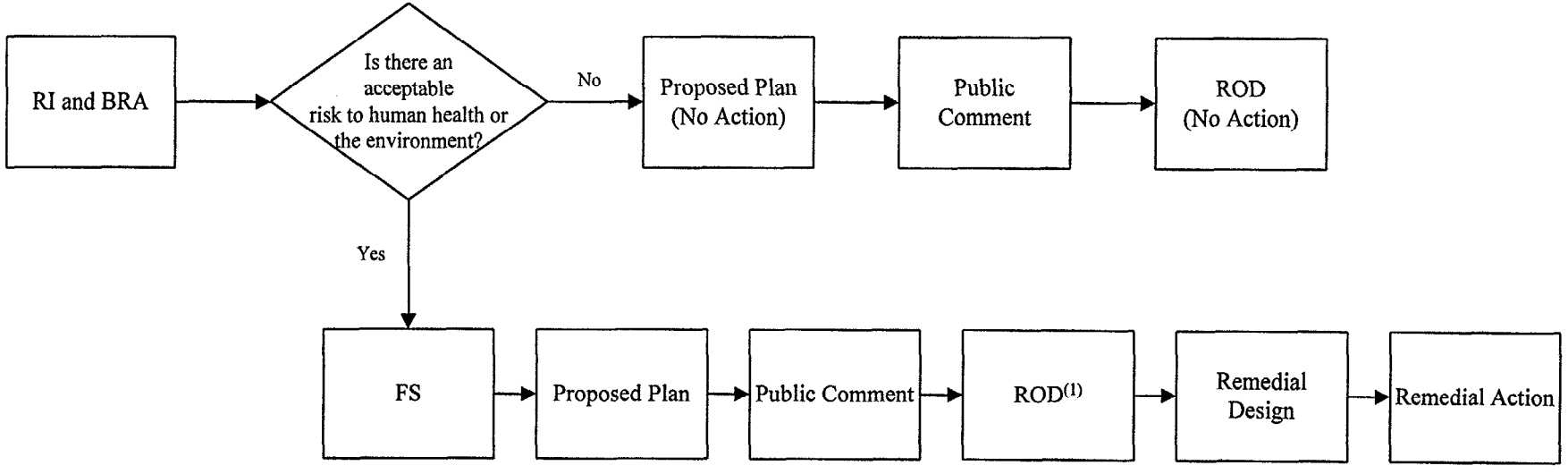
- Provide sufficient data to allow treatment alternatives to be fully developed and evaluated
- Support the remedial design of a selected alternative
- Reduce cost and performance uncertainties for treatment alternatives to acceptable levels to aid in remedy selection.

Treatability studies for explosives-contaminated soil were conducted in FY 1996 and 1997 concurrent with ongoing IRP activities. These studies provided data for FSs involving explosives-contaminated sites.

SECTION 3.0 FIGURES

FIGURE 3-1

RI/FS PROCESS

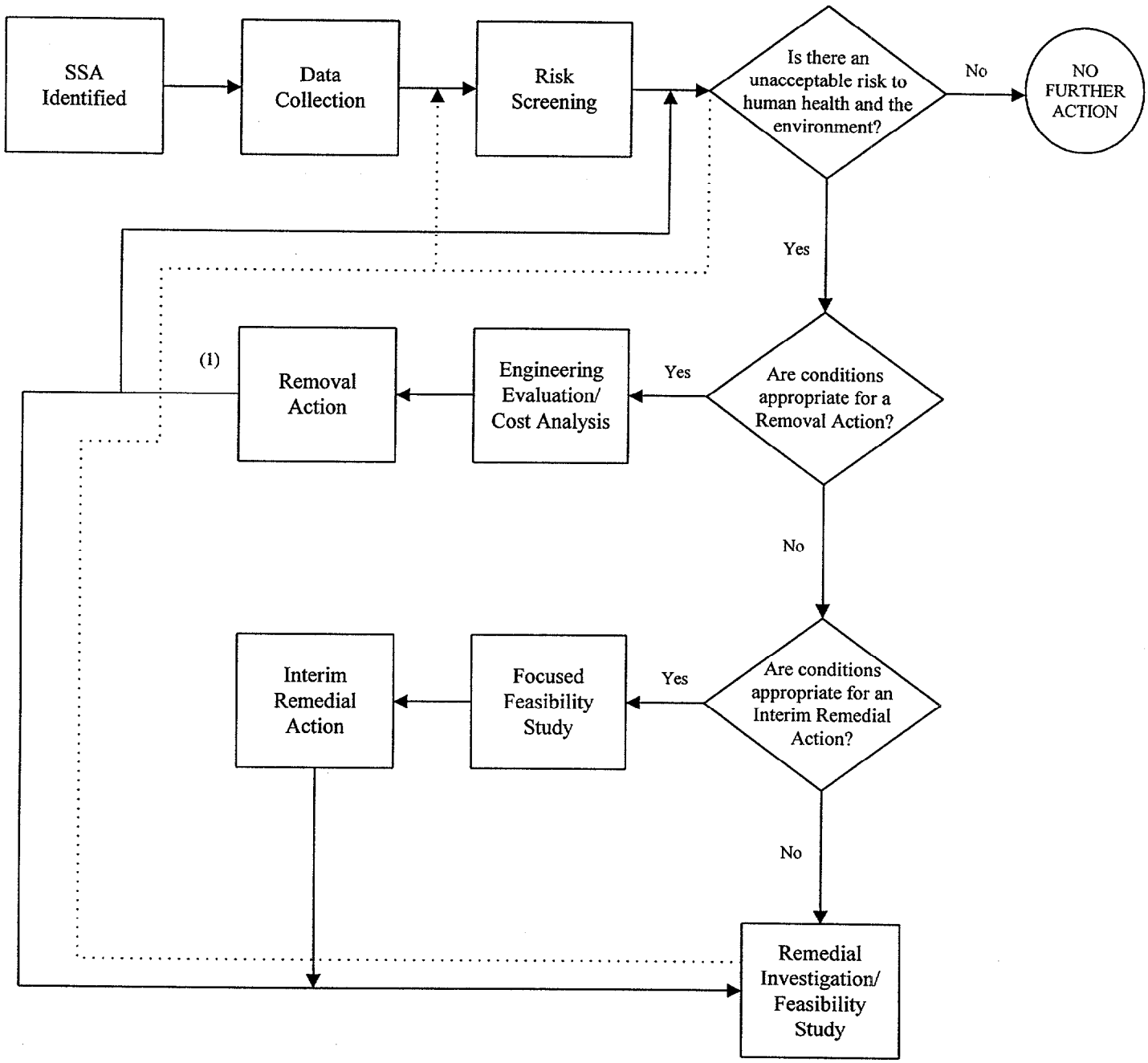


RI = Remedial Investigation
BRA = Baseline Risk Assessment
FS = Feasibility Study
ROD = Record of Decision (including Responsiveness Summary)

(1) Includes summary of any Interim Remedial Actions or Removal Actions for the Operable Unit

FIGURE 3-2

KEY DECISION POINTS DURING THE SITE SCREENING PROCESS

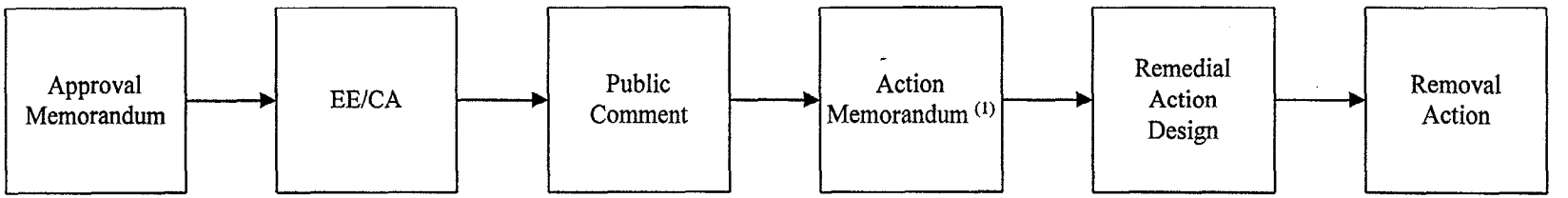


Note:

(1) Steps taken following the Removal Action will depend on the point at which the action is taken during the site screening and RI/FS processes.

FIGURE 3-3

NON-TIME CRITICAL REMOVAL ACTION PROCESS

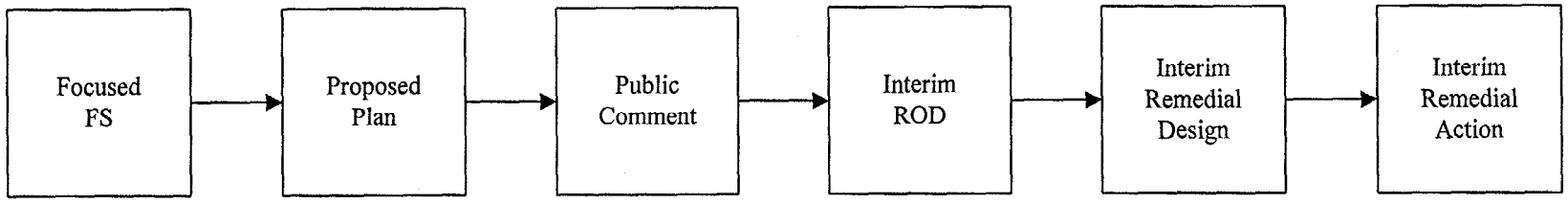


EE/CA = Engineering Evaluation/Cost Analysis

(1) Includes Responsiveness Summary to Public Comment

FIGURE 3-4

INTERIM REMEDIAL ACTION PROCESS



FS = Feasibility Study
ROD = Record of Decision

4.0 RELATIVE RISK SITE EVALUATION

A quantitative and qualitative ranking system was devised by LANTDIV, USEPA Region III and the Commonwealth of Virginia to prioritize the investigation and remediation (if necessary) of IRP sites and SSAs, respectively, at WPNSTA Yorktown. The quantitative ranking evaluated potential human health and ecological risks posed by sites through a comparison to USEPA Region IX Preliminary Remediation Goal (PRG) values (USEPA, 1994a) and ecological criteria such as Federal Ambient Water Quality Criteria (AWQC). SSAs were evaluated through a review of area or process history and their proximity to the WPNSTA fence line. Appendix A-1 presents the former site ranking approach used at WPNSTA Yorktown.

The DoD formalized the site ranking process in 1994 by adopting the Relative Risk Ranking (RRR) approach (DoD, 1994; U.S. Navy, 1995). RRR is currently being used at all DoD sites to sequence investigative efforts at all SSAs and IRP sites. This section will present an overview of RRR and its use at the Station.

4.1 Relative Risk Ranking

RRR was developed by an interservice working group within DoD comprised of representatives from the Army, Navy, Air Force, and Defense Logistics Agency. The RRR framework has been presented to members of the Federal Facility Dialogue Committee, congressional staff, Federal and State regulators, and environmental interest groups. The function of the RRR framework is to catagorize sites into *High, Medium* and *Low* categories such that sites posing the greatest potential risk to human health and the environment are investigated first.

The RRR framework is based on information basic to risk assessment: potential sources, pathways, and receptors and is similar to the approach used previously at WPNSTA Yorktown. Media evaluated as part of the RRR framework include: groundwater, surface water, sediment, and soil (samples obtained from no deeper than 24"). Each medium is evaluated using three factors. These factors include the Contaminant Hazard Factor (CHF), the Migration Pathway Factor (MPF) and the Receptor Factor (RF). These factors will be discussed in the following paragraphs.

4.1.1 Contaminant Hazard Factor

The CHF is determined by calculating the ratio of the maximum detected concentration of a contaminant in a medium to a risk-based concentration value for the contaminant. USEPA Region IX PRGs are used to determine a CHF for human health. Region IX PRGs for potential carcinogens are multiplied by 100 to coincide with a 10^{-4} cancer risk. Region IX PRGs for noncarcinogens are not modified and correspond to Hazard Quotients of 1.0.

Ratios are derived for potential ecological risks using AWQC values or Lowest Observed Effects Levels (LOELs) and National Oceanic and Atmospheric Administration (NOAA) sediment values. For media containing more than one contaminant ratio from individual contaminants are summed. If the sum of the ratios are greater than 100, the CHF is considered to be significant. A sum of 2 to 100 is considered to be moderate CHF, and a ratio of less than 2 is considered to be a minimal CHF.

4.1.2 Migration Pathway Factor

Information about migration pathways of contamination for a site is summarized as the MPF. Ratings of *Evident, Potential*, and *Confined* are determined by an evaluation of the type of contaminant, professional judgement, and site-specific information. These ratings are defined below.

Evident - Analytical data or observable evidence that contamination is present at, is moving toward, or has moved to a point of potential exposure.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of *evident* or *confined.*

Confined - Low possibility for contamination to be present at or migrate to a point of potential exposure.

4.1.3 Receptor Factor

Information concerning the present or future likelihood of receptors for each site is summarized as the RF. Ratings as *Identified, Potential,* or *Limited* are determined by matching available site information with the following definitions.

Identified - Receptors identified that have access to contaminated media.

Potential - Potential for receptors to have access to contaminated media.

Limited - Little or no potential for receptors to have access to contaminated media.

Potential human and ecological receptors, by medium, are as follows:

- Groundwater - Potential human receptors include potential users of downgradient water supplies for consumption or in food production. Potential ecological receptors are not evaluated.

- Surface Water/Sediment - Potential human receptors include downgradient water supply and potential recreational users. Potential ecological receptors include critical habitats, estuaries, National Parks, wilderness areas and preserves, and marine sanctuaries and habitats known to be used by proposed or designated endangered or threatened species.

- Surface Soil - Potential human receptors include potential future residents (child and adult) and workers. Potential ecological receptors are not evaluated.

4.2 Relative Risk Ranking Results

Results of RRR are presented in Tables 4-1 and 4-2. Inputs for CHFs, MPFs and RFs are presented with corresponding output from RRR in Appendix A-2.

4.3 Site and SSA Prioritization

Under the FY 1997 spending plan, all IRP sites and SSAs were funded for investigation.

Of the 10 SSAs, those exhibiting significant human health or ecological risks will be retained for further investigation as IRP sites. These sites will be prioritized accordingly and addressed in FY 1999. Currently no additional investigative work is scheduled for FY 1998.

SECTION 4.0 TABLES

TABLE 4-1

SITES AND CORRESPONDING RANK DERIVED USING RELATIVE RISK RANKING NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Site Number	Rank						Status
	Soil	Groundwater	Surface Water		Sediment	Overall	
			Human	Marine			
1	Low	High	Medium	NA	High	High	(2)
2	NA	Medium	Medium	NA	High	High	(1)
3	Low	High	NA	NA	NA	High	(2)
4	Medium	High	Medium	NA	High	High	(1)
6	Low	High	Medium	NA	High	High	(2)
7	Low	High	Medium	NA	Medium	High	(2)
8	Low	High	Medium	NA	Medium	High	(1)
9	Medium	High	Medium	High	High	High	(2)
11	High	Medium	NA	High	NA	High	(1)
12	Medium	High	Medium	High	Medium	High	(2)
17	Low	High	NA	NA	NA	High	(1)
18	NA	High	Low	High	Medium	High	(1)
19	High	Low	NA	NA	Medium	High	(2)
21	High	Medium	NA	NA	NA	High	(1)
22	NA	NA	Low	High	NA	High	(1)
23	High	High	High	High	Medium	High	(3)
24	High	High	NA	NA	NA	High	(3)
25	High	High	Medium	Medium	Medium	High	(3)
26	Medium	Medium	NA	NA	NA	Medium	(3)

Status:

(1) - Work Plan/Field Investigation Initiated
(2) - Remedial Investigation/Feasibility Study Report Writing Initiated
(3) - IR Program Work to be funded FY97/98
NA - Not analyzed

TABLE 4-2

SSAs AND CORRESPONDING RANK DERIVED USING RELATIVE RISK RANKING NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

	Rank						
			Surface Water				
SSA Number	Soil	Groundwater	Human	Marine	Sediment	Overall	Groundwater
3	NA	High	NA	NA	NA	High	(3)
4	Medium	NA	NA	NA	NA	Medium	(3)
5	Low	Low	NA	NA	NA	Low	(3)
8	Low	NA	NA	NA	NA	Low	(2)
9	Medium	Medium	NA	NA	NA	Medium	(3)
10	NA	Medium	NA	NA	NA	Medium	(3)
11	NA	NA	NA	NA	NA	NA	(2)
12	High	NA	NA	NA	NA	High	(2)
13	NA	NA	NA	NA	NA	NA	(2)
14	High	NA	Medium	NA	Medium	High	(1)
20	NA	NA	NA	High	NA	High	(3)
21	NA	NA	NA	High	High	High	(3)
22	High	NA	NA	NA	NA	High	(3)
23	High	NA	NA	NA	NA	High	(3)
24	Medium	NA	NA	NA	High	High	(3)

Status:

(1) - SSP Work Plan/Field Investigation Initiated
(2) - SSP Investigation/SSP Report Writing Initiated
(3) - IR Program Work to be funded FY97/98
NA - Not analyzed

5.0 SITE MANAGEMENT PLAN SCHEDULES

This section presents the project schedules for the sites and SSAs identified in Section 2.0 and prioritized in Section 4.0. Schedules depicting the major project activities for each site and SSA are provided. These schedules are tentative based on funding allocation, completion of removal actions, and Government comments received for the reports. In addition, specific submittal deadlines planned for fiscal years 1998 and 1999 have been developed. Appendix B presents actions (removal actions and finalized reports) which have been completed. Appendix C presents sites and SSAs that will undergo removal actions. Appendix D presents detailed schedules for those activities funded during FY 1995. Detailed master schedules for sites potentially undergoing RI, Baseline Risk Assessment, FS or Remedial Design activities in FY 1996 are included in Appendix E, activities in FY 1997 are included in Appendix F, and activities in FY 1998 and 1999 are included in Appendix G.

5.1 Scheduling Assumptions

Assumptions regarding document review periods and deviations from the FFA are discussed in the following sections.

5.1.1 Federal Facility Agreement Assumptions

RI/FS and RD/RA deliverables are classified as "primary" or "secondary" documents in the FFA, as shown in Table 5-1. A primary document is typically a major, discrete portion of an RI/FS or RD/RA activity, whereas a secondary document may be a discrete portion of a primary document or may serve as a feeder document to a primary document. The project schedules have been developed using the primary and secondary document review and comment process specified in the FFA. This process is summarized in Table 5-2.

The time required for review will vary according to the length and complexity of the document. In an effort to expedite document finalization, the draft document review period may be decreased from the FFA 60-day duration to a 30-day period for the secondary documents listed below:

- Treatability Study Work Plan
- Treatability Study Report
- Engineering Evaluation/Cost Analysis Report
- Removal Action Memorandum

These secondary documents are expected to be short in length and relatively straightforward in nature compared to the other primary and secondary documents.

5.1.2 Document Preparation, Field Investigation, and Sample Analysis/Validation Assumptions

Durations for work plan preparation and field investigation activities have been based on the available information for the sites, while taking into account the overall complexity of each area (e.g., size, media types, potential receptors, proximity to other sites). The sampling efforts needed to support RI/FS activities (i.e., required to fill existing risk-, hydrogeologic-, and engineering-related data gaps) also were taken into account. These factors will be more thoroughly evaluated during development of the work plans.

Work Plan development, field investigation, and sample analysis/validation activities for the sites and SSAs have been combined to optimize coordination of these efforts (e.g., document review, field mobilization/demobilization, database management). The site/SSA groupings and estimated work plan (both RI and SSP) and field investigation durations are summarized in Table 5-3.

The work plan durations represent the estimated time required to generate the first draft document (referred to as the Preliminary Draft). The field investigation durations include the time required for subcontractor procurement and mobilization of equipment and personnel.

With respect to sample analysis, a 28-day duration is the contractual turnaround time for Naval Energy and Environmental Support Activity (NEESA-) approved laboratories. Thirty days, however, is a more realistic estimate for receipt of analytical data. Therefore, 30 days was assumed for receipt of all laboratory analyses. For data validation, a 14-day duration was assumed for all analytical data, which is also the standard turnaround time for the data validation firms currently under contract with CH2M Hill, the primary Comprehensive Long-term Environmental Action Navy (CLEAN) II Contractor.

For preparation of other RI/FS and RD/RA documents, "typical" or "average" durations were assumed based on prior experience in preparing these reports. Assumptions concerning document preparation are outlined in Table 5-4. More accurate estimates of document preparation times can be made in subsequent SMPs as more data become available; estimates will be updated in each site-specific work plan.

5.2 Site Management Plan Schedules

This section presents the proposed activities and schedules for the sites and SSAs identified in Section 2.0 and prioritized in Section 4.0 of the SMP. Figure 5-1 presents the overall schedules for completion of activities through FY 2001. Appendix C presents the schedules for removal actions. Appendices D, E, F, and G presents detailed SMP schedules for RI/FS/RD activities funded (or to be funded) during FY 1995, FY 1996, FY 1997, and FY 2000. Appendix D also presents a detailed schedule for the soil treatability study work.

The basic strategy employed during development of the SMP schedules was to overlap the RI/FS and RD/RA activities to the maximum extent practicable in order to compress the entire project schedule. The amount of overlap was based on the degree of dependency between the various tasks and documents and government agencies requested review times. Key dependencies and related assumptions are outlined below.

- Remedial Investigation: Preparation of the Preliminary Draft RI was assumed to start once all the analytical data are received prior to completion of data validation. Certain RI tasks can begin before the data are validated; to prevent duplication of effort, this overlap was assumed to be two weeks.

- Feasibility Study: Many FS tasks are dependent on the nature and extent of contamination which is determined in the RI document. Preparation of the Preliminary Draft FS was assumed to start upon submission of the Draft Final RI for those future sites which require an FS.

- Proposed Plan: Preparation of the Preliminary Draft Proposed Plan was assumed to start upon submission of the Draft Final FS. As comments are received from USEPA and the Commonwealth of Virginia on the FS, modifications to the PRAP will be made concurrently.

- Public Comment Period: The 45 day public comment period on the PRAP will begin when the final PRAP is submitted. Public comments on the PRAP can then be considered and addressed in the Responsiveness Summary section of the ROD.

- Record of Decision: Preparation of the ROD will begin upon submission of the Draft Final PRAP. The final ROD will incorporate all public comments received during the Public Comment Period.

- Remedial Design: The RD was assumed to start when the Draft Final ROD is submitted. Full scale preparation of the RD will; however, not begin until concurrence with the selected alternative(s) is obtained.

5.2.1 Proposed Removal Actions

There are no removal actions currently being performed. A removal action may be performed at Sites 1 and 3 in FY 1998.

5.2.2 RI/FS and RD/RA Schedules

The prioritization of remedial investigation activities at the 21 RI/FS sites and the site screening process activities at the 19 SSAs has been presented in Section 4.0. Appendix C through Appendix G present detailed schedules, including submittal deadlines and target dates, for the activities beginning in FY 1994 through FY 1999 through their completion. Table 5-5 presents primary and secondary deliverables by month.

5.2.3 Treatability Study Schedule

Treatability studies have been conducted for nitramine-contaminated soil present at Sites 6, 7, 9, and 19 to support selection of a remedial technology, should remedial action be required for these and other explosives contaminated sites. The schedule for the treatability study conducted by the U.S. Army Corps of Engineers Waterways Experiment Station (WES) in Vicksburg, Mississippi is presented in Appendix D, Figure D-1. A Final Treatability Study Work Plan has been completed by WES and bench scale treatability study work (reporting phase only) continues. A Draft report from WES has been completed. The Final Report has not been issued to date.

A treatability study using white rot fungus was conducted by Mycotech Corporation beginning in FY 1995 and concluding in FY 1996. Schedules were, however, not available for this treatability study.

WES, Navy, USEPA Region III, and Baker personnel selected the following remediation technologies for investigation by WES using bench scale reactors:

- Anaerobic Bioslurry
- Anaerobic Biocell
- Aerobic Bioslurry
- Aerobic Biocell
- Slurry Oxidation (SlurOx)

The WES treatability study is divided into seven phases that entail soil sample selection and preparation (Phase I), microbial systems evaluation (Phase II), desorption enhancement evaluation using surfactants (Phase III), bioslurry bench studies and biocell bench studies (Phases IV and V), slurox bench studies (Phase VI) and report preparation (Phase VII). Phase I took approximately 2 months. Phases II and III were performed concurrently and took approximately 3 months to complete. Phase IV took an additional 6 months to complete. Phase V ran concurrently with Phase IV (approximately 7 to 8 months to complete). Phase VI was not conducted. Finally, Phase VII is currently being completed. WES submitted "draft" results in September and October 1996. Baker will prepare and submit the Final Treatability Study Report based on WES's findings, once the Final report from WES is prepared.

WES provided monthly updates to the Navy during the bench scale treatability study. Baker compiled the monthly progress reports and generated quarterly reports for USEPA Region III and Commonwealth of Virginia review while the treatability study was ongoing. The quarterly reports allowed for the evaluation of each technology. A pilot scale study employing anaerobic biocell technology and the proprietary J.R. SIMPLOT SABRE process was conducted in late FY 1996. The study utilized Site 7 explosives contaminated soil and required the construction of a biocell at Site 22. Results of the pilot scale treatability study indicate that bioremediation is a cost effective alternative for the degradation of explosives compounds including 2,4,6-trinitrotoluene and RDX. Bioremediation is the preferred technology for Site 19 and may also be considered for other explosives contaminated sites such as Site 6.

5.2.4 Presumptive Remedies

Presumptive remedies are preferred technologies for common categories of sites based on historical patterns of remedy selection and USEPA's scientific and engineering evaluation of performance data on technology implementation. The objective of presumptive remedies is to use past agency experience to streamline site investigation and speed up selection of cleanup actions by eliminating the need for the initial identification and screening of alternatives during the FS.

Presumptive remedies evolve from the expectation that containment will be the likely focus at sites having wastes that pose relatively low, long-term threats or where treatment is impracticable. Presumptive remedies typically apply to municipal and CERCLA landfills as types of sites where treatment of the waste may be impractical because of their size and the heterogeneity of their contents.

Several sites at WPNSTA, Yorktown could potentially be candidate sites for presumptive remedies. These sites include Site 1, the former Dudley Road Landfill; and Site 2, the Former Turkey Road Landfill.

The potential use of a presumptive remedy at these sites also will be evaluated in FY 1998 as RI/FS efforts are completed and receive agency approval.

SECTION 5.0 TABLES

TABLE 5-1

PRIMARY AND SECONDARY DOCUMENTS AS DEFINED IN THE FFA NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Primary Documents	Secondary Documents
Site Screening Process Work Plans	Health and Safety Plans
Site Screening Process Reports	Non-Time Critical Removal Action Plans
RI/FS and FFS Work Plans	Pilot/Treatability Study Work Plans
Remedial Investigation Reports	Pilot/Treatability Study Reports
FS and FFS Reports	N/A
Proposed Plans	Engineering Evaluation/Cost Analysis Reports
	Well Closure Methods and Procedures
Final Remedial Designs	N/A
Remedial Action Work Plans • Remedial Action Sampling Plan • Remedial Action Construction Quality Assurance Plan • Remedial Action Environmental Monitoring Plan	Preliminary Conceptual Design or Equivalent Documents
Remedial Action Completion Reports	Prefinal Remedial Designs
Operation and Maintenance Plans	Periodic Review Assessment Reports
Site Management Plan	Removal Action Memorandums
Community Relations Plan (for submission only)	N/A
Long-Term Remedial Action Monitoring Plan (for submission only)	N/A

Notes:

RI/FS Remedial Investigation/Feasibility Study
FFS Focused Feasibility Study
N/A Not Applicable

TABLE 5-2

PRIMARY AND SECONDARY DOCUMENT REVIEW PROCESS
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Primary Document	Review Duration	Secondary Document	Review Duration
Draft Document	60 Days	Draft Document	60 Days
Incorporation of Comments	60 Days *	Incorporation of Comments	30 Days
Draft Final Document	30 Days **	N/A	
Final Document		Final Document	

N/A Not Applicable

* Although the FFA provides 60 days for the incorporation of comments on draft documents, schedules presented herein provide 30 days. Thirty days is considered to be sufficient for incorporation of EPA/State comments.

** If comments are adequately addressed in the draft final document, the final document will be submitted one week following receipt of USEPA's and Commonwealth of Virginia's "No additional comments at this time" letter.

TABLE 5-3

ESTIMATED WORK PLAN AND FIELD INVESTIGATION DURATIONS FOR SITES AND SSAs
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Site No.	Work Plan Duration (Months)	Field Investigation (Months)	SSA No.	Work Plan Duration (Months)	Field Investigation (Months)
6, 7, 12, 16, SSA 16	2	5	1, 6, 7, 15	1.5	1.5
9, 19	2	2	2, 17, 18, 19	1.5	1.5
1, 3	2	1.5	8, 11, 12, 13	1	1.5
4, 21, 22	2	1.5	3, 4, 5, 9, 10, 20, 21 22, 23, and 24	2	2
11, 17	2	1.5			
2, 8, 18 SSA 14	2	1.5			
23, 24, 25, 26	2	1			

TABLE 5-4

DOCUMENT PREPARATION DURATIONS
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Document	Duration (Months) [1]
Site Screening Area Report	2
Remedial Investigation Report	2
Feasibility Study	2
Proposed Plan	2
Record of Decision	1
Draft Remedial Design/Work Plan	5
Prefinal Remedial Design/Work Plan	2
Final Design/Work Plan	2
Engineering Evaluation/Cost Analysis	2
Removal Action Memorandum	1
30% Removal Action Design	1
90% Removal Action Design	2
Final Removal Action Design	1
Treatability Study Work Plan	2
Treatability Study Report	3

Note:

[1] Durations represent estimated time required to complete Preliminary Draft Documents

TABLE 5-5

FINAL 1998/1999 SITE MANAGEMENT PLAN
PRIMARY AND SECONDARY DELIVERABLES BY MONTH
WPNSTA YORKTOWN, YORKTOWN, VIRGINIA

Anticipated Submittal Date	CTO Number	Sites/SSAs	Deliverable	Document Submittal	EPA/State Review Complete By
January 15, 1998	334	Sites 9 & 19	RI/FS	Updated Final ROD	NA
January 30, 1998	319	Sites 6 & 7	RI/FS	Final RI	NA
February 2, 1998	318	Sites 1 & 3	RI/FS	Final PRAP	NA
February 19, 1998	349	Sites 4, 21, 22	RI/FS	Final RI	NA
February 20. 1998	354	Sites 11 & 17	RI/FS	Draft FS	April 21, 1998
February 27, 1998	354	Sites 11 & 17	RI/FS	Draft PRAP	April 28, 1998
March 6, 1998	354	Sites 11 & 17	RI/FS	Draft ROD	May 5, 1998
March 16, 1998	319	Sites 6 & 7	RI/FS	Interim Final FS	March 30, 1998
March 17, 1998	354	Sites 11 & 17	RI/FS	Final RI	NA
March 23, 1998	319	Sites 6 & 7	RI/FS	Interim Final PRAP	April 6, 1998
March 23, 1998	363	Sites 2, 8, 18 & SSA14	RI/FS	Draft RI	May 22, 1998
April 3, 1998	318	Sites 1 & 3	RI/FS	Final ROD	NA
April 13, 1998	319	Sites 6 & 7	RI/FS	Final FS	NA
April 16, 1998	349	Sites 4, 21, & 22	RI/FS	Draft FS	June 15, 1998
April 20, 1998	319	Sites 6 & 7	RI/FS	Final PRAP	NA
April 24, 1998	349	Sites 4, 21, & 22	RI/FS	Draft PRAP	June 23, 1998
April 24, 1998	035	SSAs 3, 4, 5, 9, 10, 20, 21, 22 & 24	Site Screening Process	Draft SSP Report	June 23, 1998
May 1, 1998	349	Sites 4, 21, & 22	RI/FS	Draft ROD	June 30, 1998
May 4, 1998	319	Sites 6 & 7	RI/FS	Draft ROD	June 3, 1998
May 21, 1998	354	Sites 11 & 17	RI/FS	Final FS	NA
May 28, 1998	354	Sites 11 & 17	RI/FS	Final PRAP	NA
June 22, 1998	319	Sites 6 & 7	RI/FS	Final ROD	NA
June 22, 1998	363	Sites 2, 8, 18, & SSA 14	RI/FS	Final RI	NA
June 26, 1998	035	Sites 23, 24, 24, & 26	RI/FS	Draft RI	August 25, 1998
July 15, 1998	349	Sites 4, 21, & 22	RI/FS	Final FS	NA
July 23, 1998	349	Sites 4, 21, & 22	RI/FS	Final PRAP	NA
July 23, 1998	035	SSAs 3, 4, 5, 9, 10, 20, 21, 22 & 24	Site Screening Process	Final SSP Report	NA
July 24, 1998	354	Sites 11 & 17	RI/FS	Final ROD	NA
August 21, 1998	363	Sites 2, 8, 18, & SSA 14	RI/FS	Draft FS	October 20, 1998
August 28, 1998	363	Sites 2, 8, 18, & SSA 14	RI/FS	Draft PRAP	October 27, 1998
September 4, 1998	363	Sites 2, 8, 18, & SSA 14	RI/FS	Draft ROD	November 3, 1998
September 11, 1998	349	Sites 4, 21, & 22	RI/FS	Final ROD	NA
September 24, 1998	035	Sites 23, 24, 25, & 26	RI/FS	Final RI	NA
November 20, 1998	363	Sites 2, 8, 18, & SSA 14	RI/FS	Final FS	NA
November 23, 1998	035	Sites 23, 24, 25, & 26	RI/FS	Draft FS	January 22, 1999
November 30, 1998	363	Sites 2, 8, 18, & SSA 14	RI/FS	Final PRAP	NA

TABLE 5-5 (Continued)

FINAL 1998/1999 SITE MANAGEMENT PLAN
PRIMARY AND SECONDARY DELIVERABLES BY MONTH
WPNSTA YORKTOWN, YORKTOWN, VIRGINIA

Anticipated Submittal Date	CTO Number	Sites/SSAs	Deliverable	Document Submittal	EPA/State Review Complete By
January 25, 1999	363	Sites 2, 8, 18, & SSA 14	RI/FS	Final ROD	NA
February 22, 1999	035	Sites 23, 24, 25, & 26	RI/FS	Final FS	NA
March 1, 1999 March 8, 1999	035 035	Sites 23, 24, 25, & 26 Sites 23, 24, 25, & 26	RI/FS RI/FS	Draft PRAP Draft ROD	April 30, 1999 June 7, 1999
May 31, 1999	035	Sites 23, 24, 25, & 26	RI/FS	Final PRAP	NA
July 9, 1999	035	Sites 23, 24, 25, & 26	RI/FS	Final ROD	NA
February 28, 2000	--	Sites 4, 21, & 22	Remedial Design	Draft Design (60%)	April 27, 2000
April 25, 2000	--	Sites 11 & 17	Remedial Design	Draft Design (60%)	June 26, 2000
June 26, 2000	--	Sites 4, 21, & 22	Remedial Design	Pre-Final Design (100%)	August 25, 2000
August 25, 2000	--	Sites 11 & 17	Remedial Design	Pre-Final Design (100%)	October 24, 2000
September 29, 2000	--	Sites 2	Remedial Design	Draft Design (60%)	November 28, 2000
October 13, 2000 October 24, 2000	-- --	Sites 8 & 18 Sites 4, 21, & 22	Remedial Design Remedial Design	Draft Design (60%) Final Design	December 12, 2000 November 8, 2000
December 22, 2000	--	Sites 11 & 17	Remedial Design	Final Design	January 8, 2001
January 29, 2001	--	Site 2	Remedial Design	Pre-Final Design (100%)	March 30, 2001
February 12, 2001	--	Sites 8 & 18	Remedial Design	Pre-Final Design (100%)	April 13, 2001
May 29, 2001	--	Site 2	Remedial Design	Final Design	June 13, 2001
June 12, 2001	--	Sites 8 & 18	Remedial Design	Final Design	June 27, 2001

Notes:

CTO = Contract Task Order. Deliverables having CTO numbers are funded.
FS = Feasibility Study
NA = Not Applicable
PRAP = Proposed Remedial Action Plan
RI = Remedial Investigation
ROD = Record of Decision
SMP = Site Management Plan
SSA = Site Screening Area
SSP = Site Screening Process

SECTION 5.0 FIGURES

Figure 5-1
Overall Schedule for Activities Conducted at WPNSTA Yorktown
Naval Weapons Station Yorktown, Yorktown, Virginia

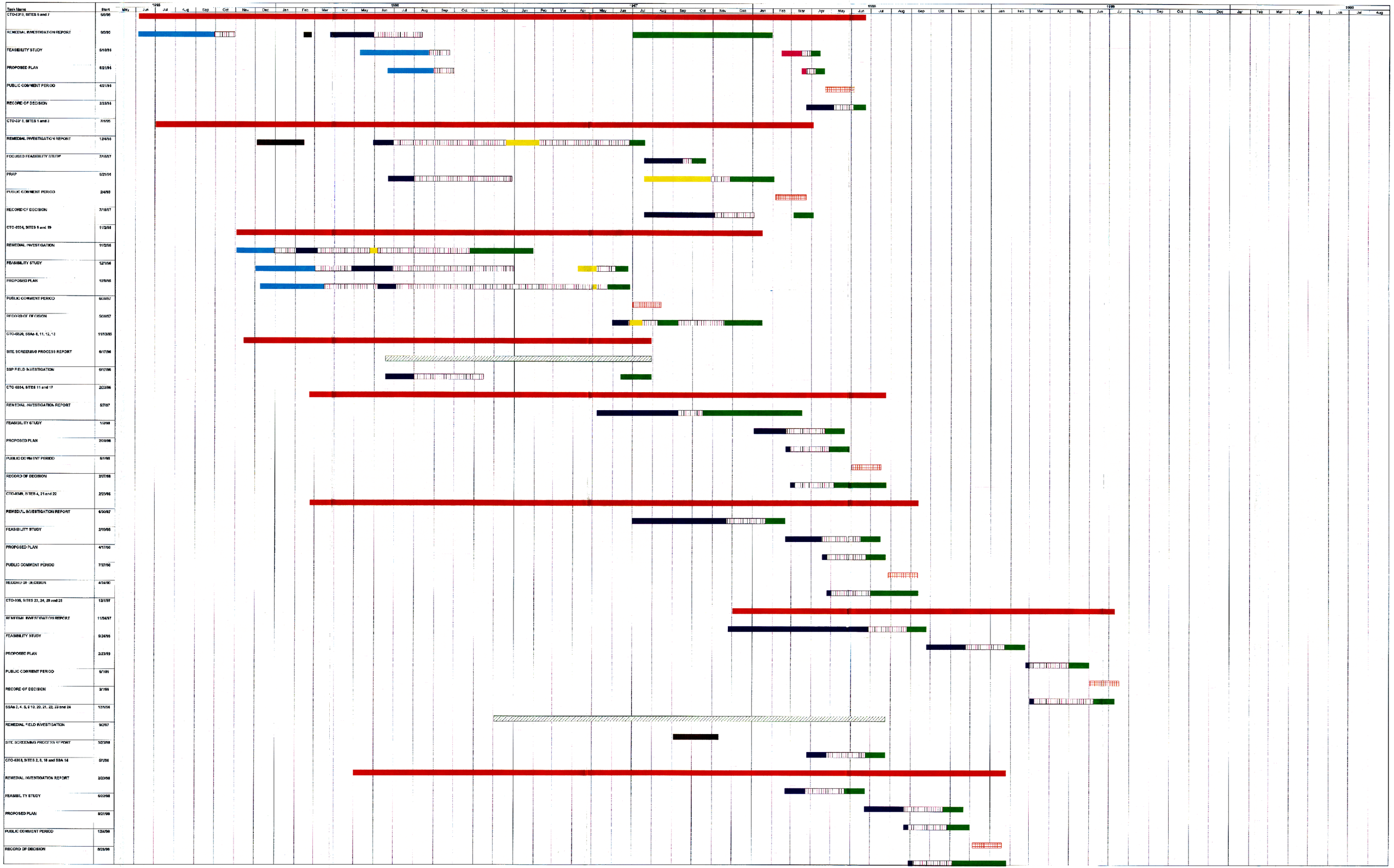
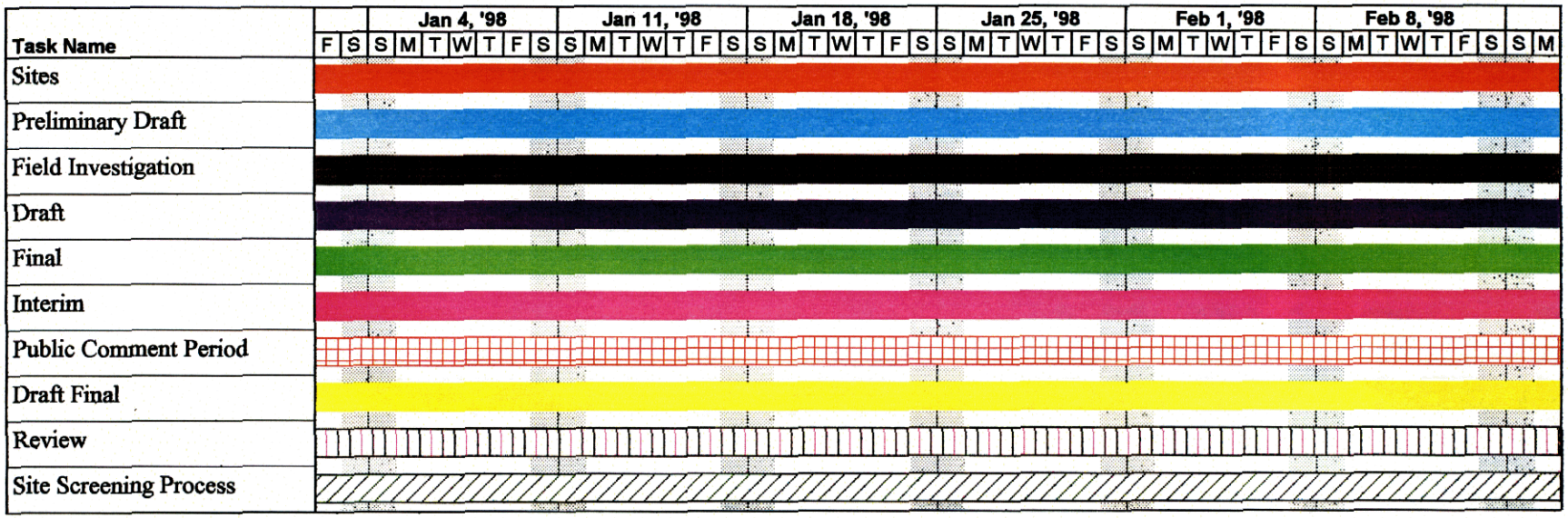


Figure 5-1 KEY
Overall Schedule for Activities Conducted at WPNSTA Yorktown
Naval Weapons Station Yorktown, Yorktown, Virginia



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APPENDIX A
SITE RANKING PROCESS AND RESULTS
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

APPENDIX A-1
QUANTITATIVE SITE RANKING PROCESS AND RESULTS FY 1993 - FY 1995
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

APPENDIX A-1

QUANTITATIVE SITE RANKING
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

TABLE OF CONTENTS

A-1a	Site 1- Dudley Road Landfill
A-1b	Site 2 - Turkey Road Landfill
A-1c	Site 3 - Group 16 Magazine Landfill
A-1d	Site 4 - Burning Pad Residue Landfill
A-1e	Site 5 - Surplus Transformer Storage Area
A-1f	Site 6 - Explosives-Contaminated Wastewater Impoundment
A-1g	Site 7 - Plant 3 Explosives-Contaminated Wastewater Discharge Area
A-1h	Site 8 - NEDED Explosives-Contaminated Wastewater Discharge Area
A-1i	Site 9 - Plant 1 Explosives-Contaminated Wastewater Discharge Area
A-1j	Site 11 - Abandoned Explosives Burning Pits
A-1k	Site 12 - Barracks Road Landfill
A-1l	Site 16 - West Road Landfill
A-1m	Site 17 - Holm Road Landfill
A-1n	Site 18 - Building 476 Discharge Area
A-1o	Site 19 - Conveyor Belt Soils at Building 10
A-1p	Site 21 - Battery and Drum Disposal Area

A.0 SITE RANKING

The site ranking methodology has been developed to rank sites so that the worst sites, as defined by the greatest detected concentration of specific compounds (usually based on a limited amount of data), in conjunction with the compounds' toxicity, potential for human and/or ecological exposure, and potential for contaminant migration, are prioritized. This ranking methodology is a site management tool to indicate, by actual media concentrations, toxicity, potential exposure, and potential migration, which sites may pose the greatest risk to human health and/or the environment and focus study and remediation on these sites. The methodology is both quantitative and qualitative in nature, as presented in the following sections. For SSAs that have no chemical data, those closest to the boundary of the facility will be studied first to ensure that any potential off-Station contaminant migration is identified and treated, as appropriate. These areas will undergo the Site Screening Process (as defined in the FFA, Subsection 9.3). Figure 4-1 presents the points at which decisions will be made to determine the fate of each SSA (i.e., whether an RI/FS will be performed on the area, or whether the area does not pose a threat to public health, welfare, or the environment and, therefore, should be removed from further study).

A.1 Site Ranking - Quantitative Analysis

For the quantitative screening analysis, human health was evaluated by assuming that groundwater was used as tap water (both ingestion and inhalation exposure scenarios were included in the tap water determination) and soil contact was assumed to be residential (including both ingestion and dermal contact scenarios), as described in the USEPA Region IX Preliminary Remediation Goal (PRG) values (USEPA Region IX, updated biannually) (USEPA, 1994). Ecological risk was determined for the aquatic environment only (surface water and sediment), since benchmark values for terrestrial ecological risk are not readily available. Note that surface water has not been considered as tap water in the screening methodology because; 1) surface water is almost exclusively treated before use, 2) significant dilution occurs between source and intake, and 3) surface water in the vicinity of the majority of Navy sites is brackish.

To initially rank the sites, Contaminant Hazard Factors (CHFs) for human health (carcinogenic and noncarcinogenic) and ecological risk were calculated. These CHF values were determined by dividing the maximum detected concentration of particular compounds in the environmental media (soil,

groundwater, surface water and/or sediment) by the corresponding, most recent USEPA Region IX PRG value, Federal Ambient Water Quality Criteria (AWQC), and/or National Oceanic and Atmospheric Administration (NOAA) sediment screening value. This Appendix presents the ratios calculated for each sampled environmental medium at each of the 16 original sites at WPNSTA Yorktown.

Equations for these calculations are as follows:

Human Contaminant Hazard Factor Calculation - Groundwater

Carcinogens

$$CHF_{gwc} = \sum (C_{max} / PRG)$$

Noncarcinogens

$$CHF_{gwnc} = \sum (C_{max} / PRG)$$

where: CHF_{gwc} = Contaminant Hazard Factor, sum of groundwater carcinogenic ratios

C_{max} = Maximum detected concentration (microgram per liter [μg/L])

PRG = USEPA Region IX tap water PRG (μg/L)

CHF_{gwnc} = Contaminant Hazard Factor, sum of groundwater noncarcinogenic ratios

Human Contaminant Hazard Factor Calculation - Soil

Carcinogens

$$CHF_{ssc} = \sum (C_{max} / PRG)$$

Noncarcinogens

$$CHF_{ssnc} = \sum (C_{max} / PRG)$$

where: CHF_{ssc} = Contaminant Hazard Factor, sum of surface soil carcinogenic ratios

C_{max} = Maximum detected concentration (milligram per kilogram [mg/kg])

PRG = USEPA Region IX residential soil PRG (mg/kg)

CHF_{ssnc} = Contaminant Hazard Factor, sum of surface soil noncarcinogenic ratios

Ecological Contaminant Hazard Factor Calculation - Surface Water/Sediment

Surface Water

$CHF_{sw} = \sum (C_{maxsw} / AWQC)$

Sediment

$CHF_{sd} = \sum (C_{maxsd} / NOAA)$

where: CHF_{sw} = Contaminant Hazard Factor, sum of surface water ratios
C_{maxsw} = Maximum detected concentration surface water (μg/L)
AWQC = Federal Ambient Water Quality Criteria (μg/L)
CHF_{sd} = Contaminant Hazard Factor, sum of sediment ratios
C_{maxsd} = Maximum detected concentration sediment (mg/kg)
NOAA = Sediment screening value (mg/kg)

A.2 Site Ranking - Qualitative Analysis

Once the quantitative assessment was complete, a qualitative assessment addressing potential exposure and potential migration was performed. This analysis was conducted to ensure that where human and/or ecological exposure to the contaminated media exists and the potential for contaminant migration is high, these sites are investigated before sites with less potential to impact human health and the environment. This analysis was performed by asking and answering four questions regarding the potential receptors at a site and four questions regarding potential contaminant migration (the migration question was the same question asked for each environmental media: groundwater, surface soil, surface water, and sediment). Table A-1 summarizes the initial ratios calculated and the answers to the qualitative questions.

A.2.1 Receptor Factor

The Receptor Factor (RF) was used to identify the actual and/or potentially exposed human and ecological populations at each site. The RF was determined for each of the four environmental media for which data were collected.

A.2.1.1 Groundwater

For human receptors potentially exposed to contaminated groundwater, one of the following three statements was selected to represent conditions at a particular site:

a) Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).

b) Groundwater is not currently used for human activities (i.e., drinking, agriculture, recreation), but may be in the future.

c) In the future groundwater will not be used for human activities (i.e., drinking, agriculture, recreation) because of high salinity, chlorides, total suspended solids, etc.

A.2.1.2 Surface Soil

For human receptors potentially exposed to contaminated surface soil, one of the following three statements was selected to represent conditions at a particular site:

a) There are sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present in the area and/or the area is routinely used by non-sensitive receptors (i.e., workers, individuals undergoing training).

b) Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) may be to be present in the area and/or the area is occasionally used by non-sensitive receptors (i.e., workers, individuals undergoing training).

c) Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) are not present in the area and/or the area is not used by non-sensitive receptors (i.e., workers, individuals undergoing training).

A.2.1.3 Surface Water

For aquatic ecological receptors potentially exposed to contaminated surface water, one of the following three statements was selected to represent conditions at a particular site:

a) Habitats containing Federal and/or state threatened or listed endangered species, wetland areas, migratory bird habitats, etc. exist on or near the site.

b) Habitats containing Federal and/or state threatened or listed endangered species, wetland areas, migratory bird habitats, etc. have not yet been identified on or near the site, but may be identified in the future.

c) It is unlikely that habitats containing Federal and/or state threatened or listed endangered species, wetland areas, migratory bird habitats, etc. exist; or if they exist, are protected by natural conditions (e.g. hydraulic gradient, attenuation, dilution).

A.2.1.4 Sediment

For aquatic ecological receptors potentially exposed to contaminated sediment, one of the following three statements was selected to represent conditions at a particular site (these are the same statements used to represent the conditions for surface water receptors):

a) Evidence exists that habitats containing Federal and/or state threatened or listed endangered species, wetland areas, migratory bird habitats, etc. exist on or are near the site.

b) Habitats containing Federal and/or state threatened or listed endangered species, wetland areas, migratory bird habitats, etc. have not yet been identified on or near the site, but may be identified in the future.

c) It is unlikely that habitats containing Federal and/or state threatened or listed endangered species, wetland areas, migratory bird habitats, etc. exist; or if they do exist, they are protected by natural conditions (e.g. hydraulic gradient, attenuation,

dilution).

A.2.2 Migration Pathway Factor

The Migration Pathway Factor (MPF) was used to identify the likelihood of off-site contaminant migration in any of the environmental media at the site. The MPF was determined for each media sampled at a particular site by selecting one of the following statements that applies to the sampled environmental media:

a) There is physical evidence/analytical data indicating off-site contaminant migration.

b) There is no current indication of off-site migration, but the potential for migration exists.

c) Present engineering structures and/or physical/chemical properties of the detected constituents greatly restrict the potential for off-site migration.

A.2.3 Quantification of Qualitative Questions - Adjusted Ratios

Both the RF and the MPF were quantified to incorporate the results of the qualitative media evaluation by adjusting the media-specific CHF to account for the influence(s) of potential human and/or ecological receptors and potential contaminant migration. Table A-2 presents the adjusted risk ratios per sample media.

A.2.3.1 Quantification of Receptor Factor

The media-specific CHF was adjusted in the following manner to account for potential human and/or ecological receptors:

- If the selected response to the groundwater RF was (a) the carcinogenic CHF for groundwater multiplied by a factor of 100 and the noncarcinogenic CHF was multiplied by a factor of 10. If the selected response was (b) the carcinogenic CHF for groundwater was multiplied by a factor of 10 and the noncarcinogenic CHF was

multiplied by a factor of 5.

- If the selected response to the surface soil RF was (a) the carcinogenic CHF for surface soil was multiplied by a factor of 100 and the noncarcinogenic CHF was multiplied by a factor of 10. If the selected response was (b) the carcinogenic CHF for surface soil was multiplied by a factor of 10 and the noncarcinogenic CHF was multiplied by a factor of 5.

- If the selected response to the surface water RF was (a) the surface water CHF was multiplied by a factor of 10. If the selected response was (b) the surface water CHF was multiplied by a factor of 5.

- If the selected response to the sediment RF was (a) the sediment CHF was multiplied by a factor of 10. If the selected response was (b) the sediment CHF was multiplied by a factor of 5.

The carcinogenic multiplier of 100 was developed to account for the target risk range for carcinogens, between 1×10^{-4} and 1×10^{-6}. The noncarcinogenic multiplier of 10 was developed using the uncertainty factor approach as defined in the USEPA's Risk Assessment Guidance for Superfund (RAGS) (USEPA, 1989). The factor of 10 was used to account for different mechanisms of action and effects on differing organ systems by various chemicals. These factors were used to ensure that sites with a greater probability of actual human exposure would rank higher than those sites at which potential or no human contact is anticipated. The ecological multiplier of 10 was included to ensure that sites impacting Federal and/or state threatened or listed endangered species, wetlands, migratory bird habitats, etc. would have higher investigative priority than sites at which these habitats are not apparent (e.g., drainage ditches). The quantification values for RF responses of (b) were selected to give higher priority to those sites that have the potential to affect human health and the environment over sites that have little or no potential to affect human health or the environment.

A.2.3.2 Quantification of Migration Pathway Factor

The media-specific CHF was also adjusted to account for potential contaminant migration in the following manner:

- If the selected response to the groundwater MPF was (a), both the carcinogenic and noncarcinogenic CHF values for groundwater were multiplied by a factor of 10. If the selected response was (b), the carcinogenic and noncarcinogenic CHF values for groundwater were multiplied by a factor of 5.

- If the selected response to the surface soil MPF was (a), both the carcinogenic and noncarcinogenic CHF values for surface soil were multiplied by a factor of 10. If the selected response was (b), the carcinogenic and noncarcinogenic CHF values for surface soil were multiplied by a factor of 5.

- If the selected response to the surface water MPF was (a), the surface water CHF was multiplied by a factor of 10. If the selected response was (b), the surface water CHF was multiplied by a factor of 5.

- If the selected response to the sediment MPF was (a), the sediment CHF was multiplied by a factor of 10. If the selected response was (b), the sediment CHF was multiplied by a factor of 5.

These factors were chosen to increase the priority of those sites with evidence of, or the potential for, off-site contaminant migration, respectively.

A.3 Total Site Risk Screening Values

Table A-3 presents the summarized, adjusted risk ratios for carcinogenic, noncarcinogenic, and ecological risks at each of the 16 sites investigated in the Round One RI. Once the adjusted values for each media were determined, carcinogenic, noncarcinogenic, and ecological adjusted ratios across media were summed. That is:

- For human health, the adjusted carcinogenic values for groundwater and soil were added for a total site carcinogenic risk screening value.

- Also for human health, the adjusted noncarcinogenic values for groundwater and soil were added for a total site noncarcinogenic risk screening value.

- For ecological risk, the adjusted surface water and sediment values were added to determine the total ecological risk screening value for each site.

For human health, the total site carcinogenic and noncarcinogenic risk screening values were determined in the following manner:

Human Health Risk Screening Value

Carcinogens

$RSV_c = Adj_{gwc} + Adj_{ssc}$

Noncarcinogens

$RSV_{nc} = Adj_{gwnc} + Adj_{ssnc}$

where: RSV_c = Total carcinogenic risk screening value (soil/groundwater)
Adj_{gwc} = Adjusted groundwater carcinogenic value
Adj_{ssc} = Adjusted surface soil carcinogenic value
RSV_{nc} = Total noncarcinogenic risk screening value (soil/groundwater)
Adj_{gwnc} = Adjusted groundwater noncarcinogenic value
Adj_{ssnc} = Adjusted surface soil noncarcinogenic value

For ecological risk, the total site risk screening value was determined in the following manner:

Ecological Risk Screening Value

$RSV_{eco} = Adj_{sw} + Adj_{sd}$

where: RSV_{eco} = Total ecological risk screening value (surface water/sediment)
Adj_{sw} = Adjusted surface water value
Adj_{sd} = Adjusted sediment value

A.4 Site Ranking Summary

These site risk screening values were then ranked with the lowest non-zero (or non "--") value in each category (i.e., the least potential risk) receiving a score of 1. Categories with no available data were not considered in the site ranking. In this case, that particular category was normalized to ensure that all three categories were evaluated on the same relative scale. To determine this normalization factor, the number of entries from the longest column was determined and designated "N_{max}". N_{max} was then divided by the number of entries in each of the other two columns to calculate the normalization factor for that category/column. Ranks within categories containing entries less than N_{max} were multiplied by the calculated normalization factor.

Once the ranks were normalized, the rank sum method was used to evaluate carcinogenic, noncarcinogenic, and ecological parameters together. Since these are distinctly different measurements, the actual ratios cannot be summed; rather the ranks were summed to allow for addition of unlike terms. The site with the highest sum of the normalized rank was then considered to be the worst site based on chemical concentration, toxicity, and exposure. Table A-4 lists the sites in order of rank on a worst-first priority basis.

A.5 Site and SSA Investigation Prioritization

With the exception of Site 22 (for which no analytical data are available), the above ranking system was used to aid in the prioritization of investigation activities at WPNSTA Yorktown within the SMP. Site 22 could potentially be a source of contamination to the unnamed stream which lies between Sites 4 and 21 and flows past Site 22. The unnamed stream flows into Felgates Creek. As a result, Site 22 was prioritized with Sites 4 and 21.

RI/FS report writing is currently underway for Sites 6, 7, and 12. These reports, generated during FY 1995, are, or will soon be under review by USEPA Region III and the Commonwealth of Virginia. A "No Further Remedial Action with Institutional Controls" ROD has been signed by all parties for Site 16/SSA 16. A Post Removal Confirmatory Sampling Report and Baseline Risk Assessment have been finalized for Sites 4 and 21. In addition to these activities, a work plan, the field investigation, RI/FS report writing, PRAP and ROD preparation for Sites 1, 3, 9 and 19 have been funded in FY 1995.

Site ranking (presented in Section A.4) and additional factors, such as current funding allocation, completion of removal actions, proximity of sites to one another, and sites having similar physical characteristics have been considered to prioritize the investigation of the remaining sites. The following list presents the order in which the sites currently are planned to be investigated during FY 1997 and FY 1998:

- Sites 1 and 3 - Work Plan, Field Investigation, Round Two RI/FS reports (based on site ranking, proximity to one another, and proximity to Felgates Creek)

- Sites 4, 21, and 22 - Work Plan, Field Investigation, Round Two RI/FS reports (based on the results, of the Round One RI, removal action confirmatory sampling results, and conclusions of the supplemental RI Report).

- Sites 11 and 17 - Work Plan, Field Investigation, Round Two RI/FS reports (based on site ranking, proximity to one another, and proximity to Felgates Creek).

- Sites 2, 8, 18, and SSA 14 - Work Plan, Field Investigation, Round Two RI/FS reports (based on site ranking, proximity to Felgates Creek, and physical similarities of these sites).

- Sites 23, 24, 25, and 26 - Work Plan, Field Investigation, RI/FS Reports (based on the results of the SSP for SSAs 1, 6, 7, and 18).

Analytical data are available for SSAs 1, 2, 6, 7, 15, 17, 18, and 19. These SSAs have been subjected to the SSP. The SSAs which are to be retained for further investigation based on the outcome of the SSP (SSAs 1, 6, 7, and 18) will be ranked accordingly using the site ranking system. SSA 20 (Lee Pond) and SSA 21 (Roosevelt Pond) data also are available. Therefore, SSAs 20 and 21 also will be evaluated using site ranking even though the data have not been subjected to the SSP.

There are insufficient data to rank the remaining SSAs in the same manner as the IRP sites so SSAs closest to the border of the facility will be investigated first. The order for the SSA investigations is:

- SSAs 8, 11, 12, and 13 - (SSA 12 soil investigated in 1994)

- SSA 20 and 21
- SSAs 3, 4, 5, 9, 10, 22, and 23

TABLE A-1

SUMMARY OF INITIAL RATIOS AND ANSWERS TO QUALITATIVE QUESTIONS
SITES 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 16, 17, 18, 19, AND 21
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

SITE NO.	Groundwater				Soil				Sediment			Surface Water		
	CAR	NON	RF	MPF	CAR	NON	RF	MPF	ECO	RF	MPF	ECO	RF	MPF
1	7,293.33	17.30	c	a	24.50	0.37	b	c	13.14	a	b	98.75	a	b
2	2,437.02	14.05	c	b	--	--	--	--	36.59	a	a	7.02	a	a
3	1,307,48	75.51	c	a	6.02	0.50	b	b	--	--	--	1.00	a	b
4	1,464.11	35.63	c	a	25.43	4.00	b	b	681.62	a	a	543.58	a	a
5	--	--	--	--	14.00	--	b	c	--	--	--	--	--	--
6	333.25	7.16	c	b	6.81	0.11	b	b	44.57	a	a	47.13	a	b
7	5,573.82	68.65	c	b	4.12	0.47	b	b	23.58	a	b	67.70	a	b
8	313.20	8.83	c	b	4.19	0.20	b	b	15.48	a	b	10.49	a	b
9	1,290.90	119.91	c	a	24.08	1.85	b	b	296.06	a	b	6.19	a	a
11	1,890.51	7.28	c	b	--	0.03	b	b	1.20	a	b	238.40	a	b
12	34.18	29.55	c	a	52.90	6.26	b	b	815.65	a	b	508.59	a	a
16	776.92	25.66	c	a	13.24	2.21	b	b	6.55	a	b	391.05	a	b
17	2,470.95	23.60	c	b	71.69	2.23	c	b	--	--	--	--	--	--
18	378.67	74.62	c	c	--	--	b	c	7.88	a	b	16.61	a	b
19	0.03	20.16	c	a	35.49	3.24	b	a	248.14	a	a	--	--	--
21	1,033.04	166.10	c	b	31.11	4.30	a	b	--	--	--	--	--	--

Notes: CAR Carcinogenic values
NON Noncarcinogenic values
ECO Ecological values
RF Receptor factor
MPF Migration pathway factor
-- Not detected or not analyzed
a, b, c Defined on pages A-6 and A-7

TABLE A-2

ADJUSTED RISK RATIOS PER MEDIA
SITES 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 16, 17, 18, 19, AND 21
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

SITE NO.	Groundwater		Soil		Sediment	Surface Water
	adj-CAR	adj-NON	adj-CAR	adj-NON	adj-ECO	adj-ECO
1	72,933.33	172.97	244.97	1.85	657.00	4,937.50
2	12,185.10	70.25	--	--	3,659.00	702.00
3	13,074.80	751.10	301.00	12.50	--	50.00
4	14,641.10	356.30	1,271.50	99.98	68,162.00	54,358.20
5	--	--	140.00	--	--	--
6	1,666.25	35.80	340.50	2.75	4,457.20	2,356.50
7	27,869.10	343.25	206.15	11.75	1,178.75	3,385.35
8	1,566.02	44.15	209.65	5.10	774.05	524.25
9	12,908.96	1,199.10	1,204.20	46.25	14,802.80	619.00
11	9,452.55	36.40	--	0.75	60.00	11,919.85
12	341.80	295.50	2,645.20	156.50	40,782.50	50,859.30
16	7,769.20	256.60	661.85	55.25	327.50	19,552.40
17	12,354.75	117.99	358.45	11.15	--	--
18	378.67	74.62	--	--	393.85	830.25
19	0.30	201.60	3,549.30	161.95	24,814.10	--
21	5,165.20	830.48	15,555.00	215.00	--	--

Notes:
- adj-CAR — Adjusted carcinogenic values
- adj-NON — Adjusted noncarcinogenic values
- adj-ECO — Adjusted ecological values
- -- — Not detected or not analyzed

TABLE A-3

SUMMARY OF TOTAL ADJUSTED RISK RATIOS
SITES 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 16, 17, 18, 19, AND 21
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

SITE NUMBER	CARCINOGENS	NONCARCINOGENS	ECOLOGICAL
1	73,178	175	5,594
2	12.185	70	4,361
3	13,376	768	50
4	15,913	456	122,520
5	140	--	--
6	2,007	39	6,814
7	28,075	355	4,564
8	1,776	49	1,298
9	14,113	1,245	15,422
11	9,453	37	11,980
12	2,987	452	91,642
16	8,431	312	19,880
17	12,713	129	--
18	379	75	1,224
19	3,550	364	24,814
21	20,720	1,045	--

-- Not detected or not analyzed

TABLE A-4

SITE RANKING
SITES 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 16, 17, 18, 19, AND 21
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Site Number	Ranking						Sum of Rank	Sites in Order of Rank
	CAR	Norm. CAR	NON	Norm. NON	ECO	Norm. ECO		
1	16	16	7	7	6	7	30	Site 4 (42)
2	9	9	4	4	4	5	18	Site 9 (39)
3	11	11	13	14	1	1	26	Site 12 (32)
4	13	13	12	13	13	16	42	Site 7 (31)
5	1	1	--	0	--	0	1	Site 19 (31)
6	4	4	2	2	7	9	15	Site 1 (30)
7	15	15	9	10	5	6	31	Site 21 (29)
8	3	3	3	3	3	4	10	Site 16 (28)
9	12	12	15	16	9	11	39	Site 3 (26)
11	8	8	1	1	8	10	19	Site 11 (19)
12	5	5	11	12	12	15	32	Site 2 (18)
16	7	7	8	9	10	12	28	Site 17 (16)
17	10	10	6	6	--	0	16	Site 6 (15)
18	2	2	5	5	2	2	9	Site 8 (10)
19	6	6	10	11	11	14	31	Site 18 (10)
21	14	14	14	15	--	0	29	Site 5 (1)

Notes:

CAR Ranking of carcinogenic scores
NON Ranking of noncarcinogenic scores
ECO Ranking of ecological scores
Norm. Normalized scores
-- Not detected or not analyzed

APPENDIX A-1a
SITE 1 - DUDLEY ROAD LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 1 - Dudley Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Trichloroethane,1,1,2-	28	0.3	93.33
Trichloroethene	18,000	2.5	7,200.00
TOTAL			7,293.33
NONCARCINOGENIC			
Aluminum	10,500	36,500	0.29
Cadmium	5.9	18.3	0.32
Dichloroethene,1,2-	1,000	69.2	14.45
Manganese	355	182.5	1.95
Nitrates	8,200	58,400	0.14
Zinc	1,650	10,950	0.15
TOTAL			17.30

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 1 - Dudley Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	24.3	1.0	24.30
Bis(2-ethylhexyl)phthalate	12	60.8	0.20
TOTAL			24.50
NONCARCINOGENIC			
Copper	5.9	2,905.1	0.002
Lead	21.4	500	0.04
Manganese	127	391.1	0.32
Zinc	29.3	23,464.3	0.001
TOTAL			0.37

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 1 - Dudley Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Antimony	11.2	2	5.60
Chromium	89.6	80	1.12
Nickel	162	30	5.40
Zinc	122	120	1.02
TOTAL			13.14

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 1 - Dudley Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Copper	31	12	2.58
Lead	278	3.2	86.88
Mercury	0.11	0.012	9.17
Nickel	20.3	160	0.13
TOTAL			98.76

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

APPENDIX A-1b
SITE 2 - TURKEY ROAD LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 2 - Turkey Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	110	0.048666	2,260.30
Beryllium	3.5	0.019806	176.71
TOTAL			2,437.01
NONCARCINOGENIC			
Aluminum	35,800	36,500	0.98
Barium	197	2,555	0.08
Cadmium	4.5	18.3	0.25
Lead	20.9	4	5.23
Manganese	1,360	182.5	7.45
Nickel	34.8	730	0.05
Nitrates	470	58,400	0.008
Zinc	136	10,950	0.01
TOTAL			14.06

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 2 - Turkey Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Arsenic	11.7	33	0.36
Cadmium	2.4	5	0.48
Chromium	44.5	80	0.56
Copper	10.7	70	0.15
DDE	0.003	0.002	1.50
Lead	19	35	0.54
Mercury	0.11	0.15	0.73
Nickel	21.2	30	0.71
Silver	28.4	1	28.40
Zinc	116	120	0.97
TOTAL			34.40

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 2 - Turkey Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Arsenic	5.2	190	0.03
Cadmium	4.1	1.1	3.73
Copper	7.7	12	0.64
Lead	7.9	3.2	2.47
Nickel	24.7	160	0.15
TOTAL			7.02

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Zinc was detected in the surface water at this site at a concentration of 22.5 ug/l; however, the value is not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-1c
SITE 3 - GROUP 16 MAGAZINE LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 3 - Group 16 Magazine Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Beryllium	23.3	0.019806	1,176.41
Chloroform	29	0.3	96.67
Trichloroethene	86	2.5	34.40
TOTAL			1,307.48
NONCARCINOGENIC			
Aluminum	202,000	36,500	5.53
Antimony	44	14.6	3.01
Barium	1,220	2,555	0.48
Cadmium	29.7	18.3	1.62
Dichloroethene,1,2-	61	69.2	0.88
Lead	146	4	36.50
Manganese	4,810	182.5	26.36
Mercury	0.54	10.9	0.05
Nickel	594	730	0.81
Zinc	2,840	10,950	0.26
TOTAL			75.50

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 3 - Group 16 Magazine Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	6	1.0	6.00
Chromium	18.4	938.9	0.02
TOTAL			6.02
NONCARCINOGENIC			
Copper	7.3	2,905.1	0.003
Lead	24.4	500	0.05
Manganese	171	391.1	0.44
Nickel	8.6	1,564.3	0.005
Zinc	67.4	23,464.3	0.003
TOTAL			0.50

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Surface Water
Site 3 - Group 16 Magazine Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Copper	12	12	1.00
TOTAL			1.00

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

APPENDIX A-1d
SITE 4 - BURNING PAD RESIDUE LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 4 - Burning Pad Residue Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	20.6	0.048666	423.29
Beryllium	20.2	0.019806	1,019.89
Dichloroethene, 1,1-	1	0.1	10.00
RDX	3.3	0.8	4.13
Trichloroethene	17	2.5	6.80
TOTAL			1,464.11
NONCARCINOGENIC			
Aluminum	70,800	36,500	1.94
Antimony	45.7	14.6	3.13
Barium	287	2,555	0.11
Cadmium	5.2	18.3	0.28
Dichloroethene,1,2-	20	69.2	0.29
HMX	1.1	1,825	0.001
Lead	49.2	4	12.30
Manganese	3,140	182.5	17.21
Mercury	0.19	10.9	0.02
Nickel	209	730	0.29
Trichloroethane,1,1,1-	2	1,506	0.001
Zinc	735	10,950	0.07
TOTAL			35.64

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 4 - Burning Pad Residue Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Aroclor 1254	0.044	0.1	0.44
Arsenic	6.9	1	6.90
Benzo(a)pyrene	0.9	0.1	9.00
Benzo(b)fluoranthene	1.4	1.2	1.17
Benzo(k)fluoranthene	0.95	1.2	0.79
Beryllium	0.35	0.4	0.88
Bis(2-ethylhexyl)phthalate	5.3	60.8	0.09
Chromium	10.6	938.9	0.01
Methylene Chloride	0.086	22.3	0.004
RDX	47	7.7	6.10
Trinitrotoluene,2,4,6-	92.6	1703.3	0.05
TOTAL			25.44
NONCARCINOGENIC			
Aluminum	52,700	78,214.3	0.67
Antimony	62.5	31.3	2.00
Barium	91.8	5,475	0.02
Cadmium	4.7	39.1	0.12
Dinitrotoluene,2,4-	0.43	78.2	0.005
Fluoranthene	2	1,564.3	0.001
HMX	58	1,955.4	0.03
Lead	135	500	0.27
Manganese	312	391.1	0.80
Mercury	1.4	23.5	0.06
Nickel	7.9	1,564.3	0.005
Trichloroethane,1,1,1-	0.023	300	0.00007
Zinc	540	23,464.3	0.02
TOTAL			4.00

Notes: PRG values based on residential soil ingestion.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 4 - Burning Pad Residue Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Antimony	43.1	2	21.55
Arsenic	9.7	33	0.29
Cadmium	2.99	5	0.60
Chlordane, alpha	0.04	0.0005	80.00
Chlordane, gamma	0.033	0.0005	66.00
Chromium	30.6	80	0.38
Copper	33.6	70	0.48
DDD	0.91	0.002	455.00
DDE	0.056	0.002	28.00
DDT	0.015	0.001	15.00
Lead	32.5	35	0.93
Mercury	0.34	0.15	2.27
Nickel	33.6	30	1.12
Zinc	1,200	120	10.00
TOTAL			681.62

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 4 - Burning Pad Residue Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Antimony	44.1	30	1.47
Arsenic	43.4	190	0.23
Beryllium	2.2	5.3	0.42
Cadmium	11.6	1.1	10.55
Chromium	46	210	0.22
Dinitrotoluene,2,4-	0.44	230	0.002
Lead	215	3.2	67.19
Mercury	5.56	0.012	463.33
Nickel	29	160	0.18
TOTAL			543.59

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Nitramine compounds were detected at high concentrations (i.e., HMX at 19 ug/l; RDX at 170 ug/l; 1,3,5-TNB at 2.6 ug/l; 1,3-DNB at 0.34 ug/l; nitrobenzene at 0.38 ug/l; 2,4,6-TNT at 8.3 ug/l; and 2,4-DNT at 0.44 ug/l). There is no surface water quality criteria for these compounds; thus, although these levels may indicate a potential problem, none will be evident via this manner of site ranking.

Zinc was detected in the surface water at this site at a concentration of 3,880 ug/l; however, this value is not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-1e
SITE 5 - SURPLUS TRANSFORMER STORAGE AREA
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Soil
Site 5 - Surplus Transformer Storage Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Aroclor 1260	1.4	0.1	14.00
TOTAL			14.00

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic values.

APPENDIX A-1f
SITE 6 - EXPLOSIVES-CONTAMINATED WASTEWATER IMPOUNDMENT
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 6 - Explosives-Contaminated Wastewater Impoundment
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Dichloroethene,1,1-	16	0.1	160.00
RDX	17	0.8	21.25
Trichloroethene	380	2.5	152.00
TOTAL			333.25
NONCARCINOGENIC			
Antimony	57.2	14.6	3.92
Cadmium	4.5	18.3	0.25
Dichloroethene,1,2-	86	69.2	1.24
HMX	7.6	1,825	0.004
Manganese	319	182.5	1.75
TOTAL			7.16

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 6 - Explosives-Contaminated Wastewater Impoundment
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	6.4	1.0	6.40
Bis(2-ethylhexyl)phthalate	0.45	60.8	0.007
Chromium	25.1	938.9	0.03
RDX	2.9	7.7	0.38
TOTAL			6.82
NONCARCINOGENIC			
Copper	5.5	2,905.1	0.002
HMX	5.6	1,955.4	0.003
Lead	50.3	500	0.10
Zinc	214	23,464.3	0.009
TOTAL			0.11

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 6 - Explosives-Contaminated Wastewater Impoundment
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Antimony	48.2	2	24.10
Benzo(a)pyrene	0.31	0.4	0.78
Cadmium	9.8	5	1.96
Chromium	94.8	80	1.19
Copper	130	70	1.86
Fluoranthene	0.84	0.6	1.40
Lead	68.1	35	1.95
Nickel	100	30	3.33
Pyrene	0.93	0.35	2.66
Zinc	643	120	5.36
TOTAL			44.59

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Volatile and nitramine compounds were detected at very high concentrations (i.e., TCE at 180 mg/kg; 1,1,1-TCA at 190 mg/kg; HMX at 710 mg/kg; RDX at 160 mg/kg). There are no sediment quality criteria for these compounds; thus, although these levels may indicate a potential problem, none will be evident via this manner of site ranking.

Quantitative Site Ranking - Surface Water
Site 6 - Explosives-Contaminated Wastewater Impoundment
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Chromium	61.2	210	0.29
Copper	50.3	12	4.19
Lead	78.8	3.2	24.63
Mercury	0.21	0.012	17.50
Nickel	84.2	160	0.53
TOTAL			47.14

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Nitramine compounds were detected at high concentrations (i.e., HMX at 12 ug/l; RDX at 33 ug/l; 2,4,6-TNT at 36 ug/l). There are no surface water quality criteria for these compounds; thus, although these levels may indicate a potential problem, none will be evident via this manner of site ranking.

APPENDIX A-1g
SITE 7 - PLANT 3 EXPLOSIVES-CONTAMINATED WASTEWATER DISCHARGE AREA
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 7 - Plant 3 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Beryllium	18	0.01981	908.63
Dichloroethene,1,1-	160	0.1	1,600.00
Dinitrotoluene,2,6-	19	0.1	190.00
RDX	2,300	0.8	2,875.00
TOTAL			5,573.63
NONCARCINOGENIC			
Aluminum	126,000	36,500	3.45
Cadmium	12.6	18.3	0.69
Dichloroethane,1,1-	58	1,006.9	0.06
HMX	190	1,825	0.10
Lead	61	4	15.25
Manganese	6,790	182.5	37.21
Mercury	0.23	10.9	0.02
Nickel	328	730	0.45
Nitrobenzene	0.59	18.3	0.03
Trichloroethane,1,1,1-	9,900	1,506	6.57
Trinitrobenzene,1,3,5-	8.5	1.8	4.72
Zinc	985	10,950	0.09
TOTAL			68.64

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 7 - Plant 3 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	2.1	1.0	2.10
Beryllium	0.8	0.4	2.00
Bis(2-ethylhexyl)phthalate	0.53	60.8	0.009
TOTAL			4.11
NONCARCINOGENIC			
Chromium	13.6	391.1	0.03
Manganese	181	391.1	0.46
Nickel	9.1	1,564.3	0.006
Zinc	31.9	23,464.3	0.001
TOTAL			0.50

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 7 - Plant 3 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Antimony	30.4	2	15.20
Cadmium	5.8	1.16	1.16
Copper	79.4	1.13	1.13
Lead	95.3	35	2.72
Zinc	403	120	3.36
TOTAL			23.57

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 7 - Plant 3 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Chromium	77.8	210	0.37
Copper	137	12	11.42
Lead	114	3.2	35.63
Mercury	0.24	0.012	20.00
Nickel	47.1	160	0.29
TOTAL			67.71

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Zinc was detected in the surface water at this site at a concentration of 590 ug/l; however, this value was not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-1h
SITE 8 - NEDED EXPLOSIVES-CONTAMINATED WASTEWATER DISCHARGE AREA
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 8 - NEDED Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Beryllium	4.5	0.0198	227.27
RDX	64	0.8	80.00
Trichloroethene	15	2.5	6.00
TOTAL			313.27
NONCARCINOGENIC			
Aluminum	27,700	36,500	0.76
HMX	13	1,825	0.007
Lead	20.2	4	5.05
Manganese	547	182.5	3.00
Zinc	216	10,950	0.02
TOTAL			8.84

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 8 - NEDED Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Aroclor 1254	0.019	0.1	0.19
Arsenic	2.6	1	2.60
DDD	0.0022	3.5	0.001
DDE	0.0031	2.5	0.001
Dieldrin	0.0031	0.1	0.03
RDX	3.4	7.7	0.44
Trichloroethene	0.032	14.4	0.002
Vinyl Chloride	0.009	0.0097	0.93
TOTAL			4.19
NONCARCINOGENIC			
Copper	20.6	2,905.1	0.007
Dichloroethene,1,2-	0.09	281.8	0.0003
HMX	2.8	1,955.4	0.0007
Lead	62.7	500	0.13
Nickel	12.4	1,564.3	0.008
Vanadium	29.8	547.5	0.05
Zinc	165	23,464.3	0.007
TOTAL			0.20

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 8 - NEDED Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Lead	38.7	35	1.11
Mercury	2	0.15	13.33
Zinc	125	120	1.04
TOTAL			15.48

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 8 - NEDED Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Copper	6.1	12	0.51
Lead	31.5	3.2	9.84
Nickel	21.3	160	0.13
TOTAL			10.48

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

APPENDIX A-1i
SITE 9 -PLANT 1 EXPLOSIVES-CONTAMINATED WASTEWATER DISCHARGE AREA
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 9 - Plant 1 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Beryllium	25.3	0.0198	1,277.39
Trinitrotoluene,2,4,6-	2,300	170.3	13.51
TOTAL			1,290.90
NONCARCINOGENIC			
Aluminum	85,300	36,500	2.34
Barium	2,070	2,555	0.81
Cadmium	5.8	18.3	0.32
Dinitrotoluene,2,4-	12	73	0.16
Lead	248	4	62.00
Manganese	9,130	182.5	50.03
Mercury	1.82	10.9	0.17
Nickel	164	730	0.23
Trinitrobenzene,1,3,5-	6.3	1.8	3.50
Zinc	3,940	10,950	0.36
TOTAL			119.92

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 9 - Plant 1 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	19.7	1	19.70
Benzo(a)anthracene	0.55	1.2	0.46
Benzo(b)fluoranthene	0.62	1.2	0.52
Beryllium	0.86	0.4	2.15
Chromium	19.3	938.9	0.02
Chrysene	0.59	116.7	0.005
Trinitrotoluene,2,4,6-	2,100	1,703.3	1.23
TOTAL			24.09
NONCARCINOGENIC			
Copper	23.5	2,905.1	0.008
Dinitrotoluene,2,4-	3.2	78.2	0.04
Fluoranthene	1.1	1,564.3	0.001
Lead	64.7	500	0.13
Mercury	1.01	23.5	0.04
Nickel	8.6	1,564.3	0.005
Trinitrobenzene,1,3,5-	3	2	1.50
Vanadium	60.6	547.5	0.11
Zinc	175	23,464.3	0.007
TOTAL		-	1.84

Notes:

PRG values based on residential soil ingestion.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 9 - Plant 1 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Acenaphthene	1.6	0.15	10.67
Anthracene	2.3	0.085	27.06
Arsenic	35.1	33	1.06
Benzo(a)anthracene	7.5	0.23	32.61
Benzo(a)pyrene	6	0.4	15.00
Copper	94.2	70	1.35
Chrysene	8.6	0.4	21.50
Dibenz(a,h)anthracene	1.5	0.06	25.00
Fluoranthene	10	0.6	16.67
Fluorene	1.9	0.035	54.29
Lead	266	35	7.60
Mercury	0.55	0.15	3.67
Phenanthrene	9.1	0.225	40.44
Pyrene	12	0.35	34.29
Zinc	442	120	3.68
TOTAL			294.89

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 9 - Plant 1 Explosives-Contaminated Wastewater Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Dinitrotoluene,2,4-	0.38	230	0.002
Dinitrotoluene,2,6-	0.29	230	0.001
Lead	19.8	3.2	6.19
TOTAL			6.19

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

APPENDIX A-1j
SITE 11 - ABANDONED EXPLOSIVES BURNING PITS
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 11 - Abandoned Explosives Burning Pits
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	90.3	0.048666	1,855.50
RDX	28	0.8	35.00
TOTAL			1,890.50
NONCARCINOGENIC			
Aluminum	14,500	36,500	0.40
Cadmium	10.3	18.3	0.56
HMX	4.2	1,825	0.002
Lead	20.7	4	5.18
Manganese	206	182.5	1.13
Zinc	134	10,950	0.01
TOTAL			7.28

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 11 - Abandoned Explosives Burning Pits
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
NONCARCINOGENIC			
Barium	98.2	5,475	0.02
Copper	26.5	2,905.1	0.009
TOTAL			0.03

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 11 - Abandoned Explosives Burning Pits
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Mercury	0.18	0.15	1.20
TOTAL			1.20

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 11 - Abandoned Explosives Burning Pits
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Arsenic	143	190	0.75
Chromium	71.6	210	0.34
Copper	258	12	21.50
Lead	300	3.2	93.75
Mercury	1.46	0.012	121.67
Nickel	61.9	160	0.39
TOTAL			238.40

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Zinc was detected in the surface water at this site at a concentration of 904 ug/l; however, this value was not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-1k
SITE 12 - BARRACKS ROAD LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 12 - Barracks Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Chloroform	2	0.3	6.67
RDX	4.4	0.8	5.50
Trichloroethene	55	2.5	22.00
Trinitrotoluene,2,4,6-	1.5	170.3	0.009
TOTAL			34.18
NONCARCINOGENIC			
Acetone	14	768.4	0.02
Aluminum	17,200	36,500	0.47
Antimony	46.3	14.6	3.17
Cadmium	7.4	18.3	0.40
Dichloroethene,1,2-	4	69.2	0.06
Lead	27.3	4	6.83
Manganese	3,300	182.5	18.08
Trinitrobenzene,1,3,5-	0.91	1.8	0.51
Zinc	160	10,950	0.02
TOTAL			29.56

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 12 - Barracks Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	28.2	1	28.20
Benzo(a)anthracene	1.4	1.2	1.17
Benzo(a)pyrene	1.2	0.1	12.00
Benzo(b)fluoranthene	1.9	1.2	1.58
Benzo(k)fluoranthene	1.5	1.2	1.25
Beryllium	1.8	0.4	4.50
Bis(2-ethylhexyl)phthalate	4.4	60.8	0.07
Chlordane, alpha-	0.084	0.7	0.12
Chlordane, gamma-	0.084	0.7	0.12
Chromium	44.9	928.9	0.05
Chrysene	1.5	116.7	0.01
DDD	0.35	3.5	0.10
DDE	3.6	2.5	1.44
DDT	5.7	2.5	2.28
Trinitrotoluene,2,4,6-	15	1,703.3	0.009
TOTAL			52.90
NONCARCINOGENIC			
Aluminum	17,400	78,214.3	0.22
Barium	1,180	5,475	0.22
Cadmium	30.6	39.1	0.78
Copper	720	2,905.1	0.25
Fluoranthene	4.1	1,564.3	0.003
Lead	1,200	500	2.40
Manganese	760	391.1	1.94
Mercury	2.87	23.5	0.12
Nickel	49.6	1564.3	0.03
Vanadium	93.1	547.5	0.17
Zinc	2,950	23,464.3	0.13
TOTAL			6.26

Notes: PRG values based on residential soil ingestion.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 12 Barracks Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Benzo(a)anthracene	0.14	0.23	0.61
Benzo(a)pyrene	0.11	0.4	0.28
Cadmium	8.2	5	1.64
Chlordane, alpha	0.116	0.0005	232.00
Chlordane, gamma	0.116	0.0005	232.00
Chrysene	0.12	0.4	0.30
DDD	0.18	0.002	90.00
DDE	0.052	0.002	26.00
DDT	0.22	0.001	220.00
Fluoranthene	0.3	0.6	0.50
Lead	59.4	35	1.70
Mercury	0.24	0.15	1.60
Phenanthrene	0.12	0.225	0.53
Pyrene	0.18	0.35	0.51
Silver	3	1	3.00
Zinc	286	120	2.38
TOTAL			813.05

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 12 - Barracks Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Cadmium	15.5	1.1	14.09
Copper	15.1	12	1.26
DDT	0.46	0.001	460.00
Lead	42	3.2	13.13
Mercury	0.24	0.012	20.00
Nickel	19	160	0.12
Trichloroethene	4	21,900	0.0002
TOTAL			508.60

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Zinc was detected in the surface water at this site at a concentration of 100 ug/l; however, this value is not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-11
SITE 16 - WEST ROAD LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 16 - West Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	17.8	0.04866	365.76
Beryllium	7.8	0.0198	393.94
Dichlorobenzene,1,4-	4	0.7	5.71
Dichloroethene, 1,1-	1	0.1	10.00
RDX	1.3	0.8	1.63
TOTAL			777.04
NONCARCINOGENIC			
Aluminum	102,000	36,500	2.80
Antimony	48.3	14.6	3.31
Barium	362	2,555	0.14
Cadmium	5.7	18.3	0.31
Chlorobenzene	6	51.7	0.12
Dichloroethane,1,1-	3	1,006.9	0.003
Lead	56	4	14.00
Manganese	857	182.5	4.70
Mercury	0.25	10.9	0.02
Nickel	167	730	0.23
Phenol	1	21,900	0.00005
Trichloroethane,1,1,1-	3	1,506	0.002
Zinc	376	10,950	0.03
TOTAL			25.67

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 16 - West Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Aroclor 1248	0.024	0.1	0.24
Aroclor 1254	0.88	0.1	8.80
Aroclor 1260	0.12	0.1	1.20
Arsenic	1.7	1	1.70
Beryllium	0.47	0.4	1.18
Bis(2-ethylhexyl)phthalate	0.59	60.8	0.01
Chromium	26.3	938.9	0.03
DDD	0.0023	3.5	0.001
DDE	0.0065	2.5	0.003
DDT	0.0019	2.5	0.001
Dieldrin	0.0077	0.1	0.08
TOTAL			13.25
NONCARCINOGENIC			
Aluminum	4,630	78,214.3	0.06
Barium	36.8	5,475	0.007
Cadmium	13.6	39.1	0.35
Lead	258	500	0.52
Manganese	470	391.1	1.20
Mercury	1.08	23.5	0.05
Nickel	18.3	1,564.3	0.01
Zinc	559	23,464.3	0.02
TOTAL			2.22

Notes:

PRG values based on residential soil ingestion.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 16 - West Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Anthracene	0.021	0.085	0.25
Arsenic	6.5	33	0.20
Benzo(a)anthracene	0.074	0.23	0.32
Benzo(a)pyrene	0.05	0.4	0.13
Cadmium	1.8	5	0.36
Chromium	17.2	80	0.22
Chrysene	0.075	0.4	0.19
Copper	8.3	70	0.12
Fluoranthene	0.19	0.6	0.32
Lead	17.9	35	0.51
Nickel	28.6	30	0.95
Phenanthrene	0.077	0.225	0.34
Pyrene	0.081	0.35	0.23
Zinc	149	120	1.24
TOTAL			5.38

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 16 - West Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Antimony	62.8	30	2.09
Arsenic	47.4	190	0.25
Beryllium	26.3	5.3	4.96
Cadmium	46.6	1.1	42.36
Chromium	517	210	2.46
Lead	293	3.2	91.56
Mercury	2.91	0.012	242.50
Nickel	775	160	4.84
Phenol	27	2,560	0.01
TOTAL			391.03

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Volatile compounds were detected at high concentrations (i.e., 1,1-DCE at 2 ug/l; 1,1-DCA at 5 ug/l; 1,1,1-TCA at 8 ug/l; and 4-methylphenol at 850 ug/l). There are no surface water quality criteria for these compounds; thus, although these levels may indicate a potential problem, none will be evident via this manner of site ranking.

Zinc was detected in the surface water at this site at a concentration of 4,890 ug/l; however, this value is not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-1m
SITE 17 - HOLM ROAD LANDFILL
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Soil
Site 17 - Holm Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	2.8	1.0	2.80
Benzo(a)anthracene	2.5	1.2	2.08
Benzo(a)pyrene	5	0.1	50.00
Benzo(b)fluoranthene	3	1.2	2.50
Benzo(k)fluoranthene	2.8	1.2	2.33
Chrysene	2.6	116.7	0.02
Dibenz(a,h)anthracene	0.97	0.1	9.70
Indeno(1,2,3-cd)pyrene	2.7	1.2	2.25
TOTAL			71.68
NONCARCINOGENIC			
Anthracene	3.6	1.9	1.89
Fluoranthene	1.8	1,564.3	0.001
Manganese	128	391.1	0.33
Mercury	0.08	23.5	0.003
Pyrene	3.9	1,173.2	0.003
Zinc	26.9	23,464.3	0.001
TOTAL			2.23

Notes:

PRG values based on residential soil ingestion.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Groundwater
Site 17 - Holm Road Landfill
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	106	0.048666	2,178.11
Beryllium	5.8	0.019806	292.84
TOTAL			2,470.95
NONCARCINOGENIC			
Aluminum	164,000	36,500	4.49
Lead	65.4	4	16.35
Manganese	405	182.5	2.22
Mercury	0.36	10.9	0.03
Nickel	351	730	0.48
Zinc	231	10,950	0.02
TOTAL			23.55

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

APPENDIX A-1n
SITE 18 - BUILDING 476 DISCHARGE AREA
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 18 - Building 476 Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Beryllium	7.5	0.019806	378.67
TOTAL			378.67
NONCARCINOGENIC			
Aluminum	144,000	36,500	3.95
Barium	505	2,555	0.20
Cadmium	12.6	18.3	0.69
Lead	260	4	65.00
Manganese	849	182.5	4.65
Mercury	0.73	10.9	0.07
Nickel	23.2	730	0.03
Zinc	357	10,950	0.03
TOTAL			74.62

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 18 - Building 476 Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Antimony	12.8	2.00	6.40
Arsenic	1.9	33	0.06
Chromium	18	80	0.23
Copper	29	70	0.41
Lead	8.3	35	0.24
Nickel	5.3	30	0.18
Zinc	44	120	0.37
TOTAL			7.89

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

Quantitative Site Ranking - Surface Water
Site 18 - Building 476 Discharge Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	AWQC Value (ug/l)	Ratio of Measured Conc. to AWQC
Arsenic	4.1	190	0.02
Copper	199	12	16.58
TOTAL			16.60

Notes:

AWQC value based on freshwater chronic criteria. Values exceeding these criteria indicate the potential for adverse ecological effects to occur.

Zinc was detected in the surface water at this site at a concentration of 369 ug/L; however, this value is not included in the ranking process due to an error in the Navy database system. This error will be corrected as soon as possible.

APPENDIX A-1o
SITE 19 - CONVEYOR BELT SOILS AT BUILDING 10
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 19 - Conveyor Belt Soils at Building 10
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Trinitrotoluene,2,4,6-	5.1	170.3	0.03
TOTAL			0.03
NONCARCINOGENIC			
Aluminum	4,510	36,500	0.12
Cadmium	4.5	18.3	0.25
Manganese	3,480	182.5	19.07
Trinitrobenzene,1,3,5-	1.3	1.8	0.72
TOTAL			20.16

Notes:

PRG values based on ingestion of tap water.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Soil
Site 19 - Conveyor Belt Soils at Building 10
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	28.3	1	28.30
Beryllium	2.6	0.4	6.50
Chromium	28.7	938.9	0.03
Dinitrotoluene,2,6-	0.77	1.3	0.59
Trinitrotoluene,2,4,6-	120	1703.3	0.07
TOTAL			35.49
NONCARCINOGENIC			
Copper	14.9	2,905.1	0.005
Dinitrotoluene,2,4-	1.3	78.2	0.02
Lead	49.9	500	0.10
Manganese	220	391.1	0.56
Nickel	20	1,564.3	0.01
Trinitrobenzene,1,3,5-	4.9	2	2.45
Vanadium	49.1	547.5	0.09
Zinc	69.1	23,464.3	0.003
TOTAL			3.24

Notes:

PRG values based on residential soil ingestion.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

Quantitative Site Ranking - Sediment
Site 19 - Conveyor Belt Soils at Building 10
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	NOAA ER-L Value (mg/kg)	Ratio of Measured Conc. to ER-L
Anthracene	0.4	0.085	4.70
Benzo(a)anthracene	1.6	0.23	6.96
Benzo(a)pyrene	1.2	0.4	3.00
Chrysene	8.2	0.4	20.50
Dibenz(a,h)anthracene	0.46	0.06	7.67
Fluoranthene	27	0.6	45.00
Fluorene	0.23	0.035	6.57
Phenanthrene	26	0.225	115.56
Pyrene	13	0.35	37.14
Zinc	125	120	1.04
TOTAL			248.14

Notes:

NOAA ER-L is the effects range low level. Concentrations exceeding this level indicate the potential for an adverse ecological effect to occur.

APPENDIX A-1p
SITE 21 - BATTERY AND DRUM DISPOSAL AREA
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Quantitative Site Ranking - Groundwater
Site 21 - Battery and Drum Disposal Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (ug/l)	Region IX PRG (2/94) (ug/l)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	5.8	0.048666	119.18
Beryllium	18.1	0.019806	913.86
TOTAL			1,032.36
NONCARCINOGENIC			
Aluminum	80,300	36,500	2.20
Barium	412	2,555	0.16
Cadmium	145	18.3	7.92
Lead	83	4	20.75
Manganese	7,870	182.5	43.12
Mercury	0.25	10.9	0.02
Nickel	117	730	0.16
Nitrates	25,100	58,400	0.43
Zinc	999,999	10,950	91.32
TOTAL			166.08

Notes:

PRG values based on ingestion of tap water.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

The actual zinc concentration in the groundwater was 2,490,000 ug/l; however, the Navy database fields are not large enough to accommodate a number above 999,999.00.

Quantitative Site Ranking - Soil
Site 21 - Battery and Drum Disposal Area
Naval Weapons Station Yorktown, Yorktown, Virginia

Parameter	Measured Concentration (mg/kg)	Region IX PRG (2/94) (mg/kg)	Ratio of Measured Conc. to PRG
CARCINOGENIC			
Arsenic	28.3	1	28.30
Beryllium	0.57	0.4	1.43
Benzo(b)fluoranthene	0.99	1.2	0.83
Benzo(k)fluoranthene	0.54	1.2	0.45
Bis(2-ethylhexyl)phthalate	2.1	60.8	0.04
Chromium	28.4	938.9	0.03
Chrysene	0.52	116.7	0.004
Pentachlorophenol	0.29	7.1	0.04
TOTAL			31.12
NONCARCINOGENIC			
Aluminum	13,700	78,214.3	0.18
Barium	72.8	5,475	0.01
Cadmium	8.6	39.1	0.22
Lead	113	500	0.23
Manganese	1,380	391.1	3.52
Mercury	0.76	23.5	0.03
Nickel	9.2	1,564	0.006
Pyrene	0.98	1,173	0.001
Styrene	0.02	13,000	0.000002
Trichloroethane,1,1,1-	0.014	300	0.00004
Toluene	0.035	280	0.0001
Xylene	0.004	99	0.00004
Zinc	2,160	23,464.3	0.09
TOTAL			4.29

Notes:

PRG values based on residential soil ingestion.
PRG value for mercury is based on inorganic compounds.
PRG values calculated for highest of carcinogenic or noncarcinogenic values.

APPENDIX A-2
RELATIVE RISK RANKING
FY 1996 - PRESENT

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00001

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LANDFILL

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone): Jeffrey Harlow

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Trichloroethylene (TCE)	18,000.0	160.0	112.500
Dichloroethylene, 1,2- (mixture)	1,000.0	55.0	18.180
Trichloroethane, 1,1,2-	28.0	20.0	1.400
Cadmium and compounds	5.9	18.0	0.320
Aluminum	10,500.0	37,000.0	0.290
Zinc	1,650.0	11,000.0	0.150
Nitrate	8,200.0	58,000.0	0.140
		Total:	**132.983**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00001 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (cancer endpoint)	24.3	22.0	1.100
Lead	21.4	400.0	0.050
Bis(2-ethylhexyl)phthalate (DEHP)	12.0	3,200.0	0.000
Copper and compounds	5.9	2,800.0	0.000
Zinc	29.3	23,000.0	0.000
		Total:	**1.165**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SITE 00001

Soil Category: Low
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	278.0	4.0	69.500
Nickel and compounds	20.3	730.0	0.030
Copper and compounds	31.0	1,400.0	0.020
Mercury and compounds (inorganic)	0.11	11.0	0.010
		Total:	**69.561**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00001 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Antimony and compounds	11.2	2.0	5.600
Nickel and compounds	162.0	30.0	5.400
Chromium (total)	89.6	8.0	1.120
Zinc	122.0	120.0	1.020
		Total:	**13.137**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00001 **Sediment Marine Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SEDEM

Site (Name/RMIS ID) / Project for FUDS: SITE 00002

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LANDFILL

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	20.9	4.0	5.220
Beryllium and compounds	3.5	1.6	2.190
Aluminum	35,800.0	37,000.0	0.980
Chromium (total)	97.4	180.0	0.530
Cadmium and compounds	4.5	18.0	0.250
Barium and compounds	197.0	2,600.0	0.080
Nickel and compounds	34.8	730.0	0.050
Zinc	136.0	11,000.0	0.010
Nitrate	470.0	58,000.0	0.010
Arsenic (cancer endpoint)	110.0	0.0	
		Total:	**9.318**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00002 **Groundwater Category:** Med
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	7.9	4.0	1.980
Cadmium and compounds	4.1	18.0	0.220
Nickel and compounds	24.7	730.0	0.030
Copper and compounds	7.7	1,400.0	0.010
Zinc	22.5	11,000.0	0.000
Arsenic (cancer endpoint)	5.2	0.0	
		Total:	**2.241**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00002 **Surface Water Human Category:** Med (High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Silver and compounds	28.4	1.0	28.400
Zinc	116.0	120.0	0.970
Nickel and compounds	21.2	30.0	0.710
Chromium (total)	44.5	8.0	0.560
Lead	19.0	35.0	0.540
Cadmium and compounds	2.4	5.0	0.480
Arsenic (cancer endpoint)	11.7	33.0	0.350
Copper and compounds	10.7	7.0	0.150
Mercury and compounds (inorganic)	0.11	0.15	
DDE	0.003	0.002	
		Total:	**32.160**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00002 **Sediment Marine Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00003

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LANDFILL

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	146.0	4.0	36.500
Beryllium and compounds	23.3	1.6	14.560
Chromium (total)	1,100.0	180.0	6.030
Aluminum	202,000.0	37,000.0	5.530
Antimony and compounds	44.0	15.0	3.010
Chloroform	29.0	16.0	1.810
Cadmium and compounds	29.7	18.0	1.620
Dichloroethylene, 1,2- (mixture)	61.0	55.0	1.110
Nickel and compounds	594.0	730.0	0.810
Trichloroethylene (TCE)	86.0	160.0	0.540
		Total:	**72.320**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00003 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (cancer endpoint)	6.0	22.0	0.270
Lead	24.4	400.0	0.060
Chromium (total)	18.4	3,000.0	0.050
Nickel and compounds	8.6	1,500.0	0.010
Zinc	67.4	23,000.0	0.000
Copper and compounds	7.3	2,800.0	0.000
		Total:	**0.393**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00003 **Soil Category:** Low
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00004

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LANDFILL

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	20.6	0.0	
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	1.1	1,825.0	0.000
Trichloroethane, 1,1,1-	2.0	1,300.0	0.000
Mercury and compounds (inorganic)	0.19	11.0	0.020
RDX (Cyclonite)	3.3	61.0	0.050
Zinc	735.0	10,950.0	0.070
Trichloroethylene (TCE)	17.0	160.0	0.110
Barium and compounds	287.0	2,555.0	0.110
Dichloroethylene, 1,1-	1.0	4.6	0.220
Cadmium and compounds	5.2	18.3	0.280
		Total:	**32.618**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00004 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Trichloroethane, 1,1,1-	0.023	1,900.0	0.000
Methylene chloride	0.086	490.0	0.000
Fluoranthene	2.0	2,600.0	0.000
Benzo[k]fluoranthene	0.95	610.0	0.000
Bis(2-ethylhexyl)phthalate (DEHP)	5.3	3,200.0	0.000
Dinitrotoluene, 2,4-	0.43	130.0	0.000
Nickel and compounds	7.9	1,500.0	0.010
Barium and compounds	91.8	5,300.0	0.020
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	58.0	3,300.0	0.020
Trinitrotoluene, 2,4,6-	92.6	4,800.0	0.020
		Total:	**3.968**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00004 **Soil Category:** Med
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	43.4	0.0	
Dinitrotoluene, 2,4-	0.44	73.0	0.010
Nickel and compounds	29.0	730.0	0.040
Chromium (total)	46.0	182.5	0.250
Zinc	3,880.0	10,950.0	0.350
Mercury and compounds (inorganic)	5.56	11.0	0.510
Cadmium and compounds	11.6	18.3	0.630
Beryllium and compounds	2.2	1.6	1.380
Antimony and compounds	44.1	14.6	3.020
Lead	215.0	4.0	53.750
		Total:	**59.937**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00004 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Mercury and compounds (inorganic)	0.34	0.0	
DDE	0.056	0.0	
DDT	0.015	2.0	0.010
Arsenic (cancer endpoint)	9.7	33.0	0.290
Chromium (total)	30.6	80.0	0.380
Copper and compounds	33.6	70.0	0.480
Cadmium and compounds	2.99	5.0	0.600
DDD,4,4-	0.91	0.001	0.910
Lead	32.5	35.0	0.930
Nickel and compounds	33.6	30.0	1.120
		Total:	**36.271**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00004 **Sediment Marine Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SITE 00005

RMIS Site Type: STORAGE AREA

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): _____

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** NRB

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00006

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: CONTAMINATED GROUND WATER

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	7.6	1,825.0	0.000
Cadmium and compounds	4.5	18.3	0.250
RDX (Cyclonite)	17.0	61.0	0.280
Dichloroethylene, 1,2- (mixture)	86.0	55.0	1.560
Trichloroethylene (TCE)	380.0	160.0	2.380
Dichloroethylene, 1,1-	16.0	4.6	3.480
Antimony and compounds	57.2	14.6	3.920
		Total:	**11.863**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00006 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Bis(2-ethylhexyl)phthalate (DEHP)	0.45	3,200.0	0.000
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	5.6	3,300.0	0.000
Copper and compounds	5.5	2,800.0	0.000
RDX (Cyclonite)	2.9	400.0	0.010
Zinc	214.0	23,000.0	0.010
Chromium (total)	25.1	380.0	0.070
Lead	50.3	400.0	0.130
Arsenic (cancer endpoint)	6.4	22.0	0.290
		Total:	**0.503**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SITE 00006

Soil Category: Low
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Mercury and compounds (inorganic)	0.21	11.0	0.020
Copper and compounds	50.3	1,355.7	0.040
Zinc	554.0	10,950.0	0.050
Nickel and compounds	84.2	730.0	0.120
Chromium (total)	61.2	182.5	0.340
Lead	78.8	4.0	19.700
		Total:	**20.257**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00006 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Benzo[a]pyrene	0.31	400.0	0.000
Fluoranthene	0.84	600.0	0.000
Pyrene	0.93	350.0	0.000
Chromium (total)	94.8	80.0	1.180
Copper and compounds	130.0	70.0	1.860
Lead	68.1	35.0	1.950
Cadmium and compounds	9.8	5.0	1.960
Nickel and compounds	100.0	30.0	3.330
Zinc	643.0	120.0	5.360
Antimony and compounds	48.2	2.0	24.100
		Total:	**39.744**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00006 **Sediment Marine Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00007

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: DRAINAGE DITCH

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Dinitrotoluene, 2,6-	19.0	3,700.0	0.010
Mercury and compounds (inorganic)	0.23	11.0	0.020
Nitrobenzene	0.59	18.3	0.030
Dichloroethane, 1,1-	58.0	810.0	0.070
Zinc	985.0	10,950.0	0.090
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	190.0	1,825.0	0.100
Nickel and compounds	328.0	730.0	0.450
Cadmium and compounds	12.6	18.3	0.690
Aluminum	126,000.0	36,500.0	3.450
Chromium (total)	636.0	182.5	3.480
		Total:	**119.724**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00007 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Bis(2-ethylhexyl)phthalate (DEHP)	0.53	3,200.0	0.000
Zinc	31.9	23,000.0	0.000
Nickel and compounds	9.1	1,500.0	0.010
Chromium (total)	13.6	380.0	0.040
Beryllium and compounds	0.8	14.0	0.060
Arsenic (cancer endpoint)	2.1	22.0	0.100
		Total:	**0.196**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00007 **Soil Category:** Low
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Trichloroethane, 1,1,1-	15.0	1,300.0	0.010
Mercury and compounds (inorganic)	0.24	11.0	0.020
Zinc	590.0	10,950.0	0.050
Nickel and compounds	47.1	730.0	0.060
Copper and compounds	137.0	1,355.7	0.100
Dichloroethane, 1,1-	240.0	810.0	0.300
Chromium (total)	77.8	182.5	0.430
Lead	114.0	4.0	28.500
		Total:	**29.475**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00007 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Copper and compounds	79.4	70.0	1.130
Cadmium and compounds	5.8	5.0	1.160
Lead	95.3	35.0	2.720
Zinc	403.0	120.0	3.360
Antimony and compounds	30.4	2.0	15.200
		Total:	**23.575**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00007 **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00008

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: DRAINAGE DITCH

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	20.2	4.0	5.050
Beryllium and compounds	4.5	1.6	2.810
RDX (Cyclonite)	64.0	61.0	1.050
Chromium (total)	163.0	180.0	0.890
Aluminum	27,700.0	37,000.0	0.760
Trichloroethylene (TCE)	15.0	160.0	0.090
Zinc	216.0	11,000.0	0.020
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	13.0	1,800.0	0.010
		Total:	**10.684**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): ____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): ____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: ____

Confined: ____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: X

Potential: ____

Limited: ____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00008 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Lead	62.7	400.0	0.160
Arsenic (cancer endpoint)	2.6	22.0	0.120
Vanadium	29.8	540.0	0.060
Vinyl chloride	0.009	0.52	0.050
RDX (Cyclonite)	3.4	400.0	0.010
Nickel and compounds	12.4	1,500.0	0.010
Copper and compounds	20.6	2,800.0	0.010
Zinc	165.0	23,000.0	0.010
Dieldrin	0.003	2.8	0.000
Dichloroethylene, 1,2- (mixture)	0.09	75.0	0.000
		Total:	**0.417**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS

Site Name: SITE 00008

Soil Category: Low
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	31.5	4.0	7.880
Nickel and compounds	21.3	730.0	0.030
Copper and compounds	6.1	1,400.0	0.000
		Total:	**7.909**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00008 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Lead	38.7	35.0	1.110
Zinc	125.0	120.0	1.040
Mercury and compounds (inorganic)	2.0	0.15	
		Total:	**2.147**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00008 **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SWEF SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00009

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: DRAINAGE DITCH

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Dinitrotoluene, 2,4-	12.0	73.0	0.160
Mercury and compounds (inorganic)	1.82	11.0	0.170
Nickel and compounds	164.0	730.0	0.220
Cadmium and compounds	5.8	18.3	0.320
Zinc	3,940.0	10,950.0	0.360
Barium and compounds	2,070.0	2,555.0	0.810
Chromium (total)	299.0	182.5	1.640
Aluminum	85,300.0	36,500.0	2.340
Trinitrobenzene, 1,3,5-	6.3	1.8	3.500
Trinitrotoluene, 2,4,6-	2,300.0	220.0	10.450
		Total:	**97.784**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00009 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Fluoranthene	1.1	2,600.0	0.000
Nickel and compounds	8.6	1,500.0	0.010
Zinc	175.0	23,000.0	0.010
Copper and compounds	23.5	2,800.0	0.010
Benz[a]anthracene	0.55	61.0	0.010
Benzo[b]fluoranthene	0.62	61.0	0.010
Chrysene	0.59	24.0	0.020
Dinitrotoluene, 2,4-	3.2	130.0	0.020
Mercury and compounds (inorganic)	1.01	23.0	0.040
Chromium (total)	19.3	380.0	0.050
		Total:	**2.763**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SITE 00009

Soil Category: Med
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Dinitrotoluene, 2,6-	0.29	3,700.0	0.000
Dinitrotoluene, 2,4-	0.38	73.0	0.010
Dichloroethane, 1,1-	6.0	810.0	0.010
Trichloroethane, 1,1,1-	18.0	1,300.0	0.010
Lead	19.8	4.0	4.950
		Total:	**4.977**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00009 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Trichloroethane, 1,1,1-	18.0	0.0	
Dinitrotoluene, 2,6-	0.29	0.0	
Dichloroethane, 1,1-	6.0	0.0	
Dinitrotoluene, 2,4-	0.38	230.0	0.000
Lead	19.8	3.2	6.190
		Total:	**6.189**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00009 **Surface Water Fresh Category:** High (High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Mercury and compounds (inorganic)	0.55	0.0	
Acenaphthene	1.6	150.0	0.010
Benzo[a]pyrene	6.0	400.0	0.010
Fluoranthene	10.0	600.0	0.020
Chrysene	8.6	400.0	0.020
Dibenz[ah]anthracene	1.5	60.0	0.030
Anthracene	2.3	85.0	0.030
Benz[a]anthracene	7.5	230.0	0.030
Pyrene	12.0	350.0	0.030
Phenanthrene	9.1	225.0	0.040
		Total:	**13.970**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00009 **Sediment Marine Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SITE 00010

RMIS Site Type: SURFACE DISPOSAL AREA

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): _____

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** NRB

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWEF SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00011

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: BURN AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	90.3	0.0	
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	4.2	1,825.0	0.000
Zinc	134.0	10,950.0	0.010
Aluminum	14,500.0	36,500.0	0.400
RDX (Cyclonite)	28.0	61.0	0.460
Chromium (total)	88.2	182.5	0.480
Cadmium and compounds	10.3	18.3	0.560
Lead	20.7	4.0	5.180
		Total:	**7.092**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00011 **Groundwater Category:** Med
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Copper and compounds	26.5	2,800.0	0.010
Barium and compounds	98.2	5,300.0	0.020
		Total:	**2.80E-02**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00011 **Soil Category:** High
(High, Medium, Low)

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Nickel and compounds	61.9	160.0	0.390
Arsenic (cancer endpoint)	143.0	190.0	0.750
Chromium (total)	71.6	11.0	6.510
Zinc	904.0	110.0	8.220
Copper and compounds	258.0	12.0	21.500
Lead	300.0	3.2	93.750
Mercury and compounds (inorganic)	1.46	0.012	121.670
		Total:	**252.783**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00011 **Surface Water Fresh Category:** High (High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SWEF SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00012

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LANDFILL

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Trinitrotoluene, 2,4,6-	1.5	220.0	0.010
Zinc	160.0	10,950.0	0.010
Acetone	14.0	610.0	0.020
RDX (Cyclonite)	4.4	61.0	0.070
Dichloroethylene, 1,2- (mixture)	4.0	55.0	0.070
Chloroform	2.0	16.0	0.130
Trichloroethylene (TCE)	55.0	160.0	0.340
Cadmium and compounds	7.4	18.3	0.400
Chromium (total)	82.2	182.5	0.450
Aluminum	17,200.0	36,500.0	0.470
		Total:	**12.486**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00012 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
DDD	0.35	190.0	
Bis(2-ethylhexyl)phthalate (DEHP)	4.4	3,200.0	0.000
Fluoranthene	4.1	2,600.0	0.000
Benzo[k]fluoranthene	1.5	610.0	0.000
Trinitrotoluene, 2,4,6-	15.0	4,800.0	0.000
Benz[a]anthracene	1.4	61.0	0.020
DDE	3.6	130.0	0.030
Benzo[b]fluoranthene	1.9	61.0	0.030
Nickel and compounds	49.6	1,500.0	0.030
DDT	5.7	130.0	0.040
		Total:	**6.891**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00012 **Soil Category:** Med
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
DDD	0.061	28.0	
Zinc	100.0	10,950.0	0.010
Copper and compounds	15.1	1,355.7	0.010
Mercury and compounds (inorganic)	0.24	11.0	0.020
DDT	0.46	20.0	0.020
Trichloroethylene (TCE)	4.0	160.0	0.030
Nickel and compounds	19.0	730.0	0.030
Cadmium and compounds	15.5	18.3	0.850
Lead	42.0	4.0	10.500
		Total:	**11.463**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00012 **Surface Water Human Category:** Med
(High, Medium, Low)

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
DDD	0.061	0.0	
Trichloroethylene (TCE)	4.0	21,900.0	0.000
Nickel and compounds	19.0	160.0	0.120
Zinc	100.0	110.0	0.910
Copper and compounds	15.1	12.0	1.260
Lead	42.0	3.2	13.130
Cadmium and compounds	15.5	1.1	14.090
Mercury and compounds (inorganic)	0.24	0.012	20.000
DDT	0.46	0.001	460.000
		Total:	**509.502**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00012 **Surface Water Fresh Category:** High
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Mercury and compounds (inorganic)	0.24	0.0	
DDE	0.052	0.0	
Benzo[a]pyrene	0.11	400.0	0.000
Chrysene	0.12	400.0	0.000
Fluoranthene	0.3	600.0	0.000
Pyrene	0.18	350.0	0.000
Phenanthrene	0.12	225.0	0.000
Benz[a]anthracene	0.14	230.0	0.000
DDT	0.22	2.0	0.110
DDD,4,4-	0.18	0.001	0.180
		Total:	**9.013**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00012 **Sediment Marine Category:** Med (High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SITE 00013

RMIS Site Type: SURFACE DISPOSAL AREA

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): _____

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** NRB

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SITE 00015

RMIS Site Type: SURFACE DISPOSAL AREA

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): _____

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** NRB

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Dieldrin	0.087	2.8	0.030
Beryllium and compounds	0.835	14.0	0.060
Benzo[k]fluoranthene	39.0	610.0	0.060
Aluminum	12,300.0	77,000.0	0.160
Cadmium and compounds	6.65	38.0	0.170
1,3,5-Trinitrobenzene	1.1	3.3	0.330
Benz(a)anthracene	27.0	61.0	0.440
Benzo[b]fluoranthene	49.0	61.0	0.800
Manganese and compounds	347.0	380.0	0.910
Lead	447.0	400.0	1.120
		Total:	**20.500**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): ____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): ____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: ____

Confined: ____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: ____

Potential: X

Limited: ____

Activity Name: YORKTOWN VA NWS

Site Name: SWMU 00001 (SITE 23)

Soil Category: High
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Iron	39,500.0	0.0	0.000
Mercury and compounds (inorganic)	0.31	11.0	0.030
Copper and compounds	57.5	1,355.7	0.040
Zinc	551.0	10,950.0	0.050
Cadmium and compounds	2.4	18.3	0.130
Chromium VI and compounds	25.6	182.5	0.140
Lead	112.0	4.0	28.000
		Total:	**28.392**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Potential - Potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00001 (SITE 23) **Surface Water Human Category:** High
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Mercury and compounds (inorganic)	0.31	0.0	0.000
Iron	39,500.0	0.0	0.000
Copper and compounds	57.5	0.0	0.000
Cadmium and compounds	2.4	9.3	0.260
Chromium VI and compounds	25.6	50.0	0.510
Zinc	551.0	86.0	6.410
Lead	112.0	8.5	13.180
		Total:	**20.354**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00001 (SITE 23) **Surface Water Marine Category:** High
(High, Medium, Low)

Sediment Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
DDT	0.0017	130.0	0.000
Benzo[b]fluoranthene	0.27	61.0	0.000
Mercury and compounds (inorganic)	0.3	23.0	0.010
		Total:	**1.75E-02**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00001 (SITE 23) **Sediment Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Mercury and compounds (inorganic)	0.3	0.0	0.000
Benzo[b]fluoranthene	0.27	0.0	0.000
DDT	0.0017	2.0	0.000
		Total:	**0.001**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): ____

Moderate (If Total 2 - 100): ____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: ____

Confined: ____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: ____

Potential: X

Limited: ____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00001 (SITE 23) **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00002

RMIS Site Type: BURN AREA

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 10/10/95

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
RDX (Cyclonite)	7.9	61.0	0.130
Acetone	600.0	610.0	0.980
Manganese and compounds	576.0	182.5	3.160
		Total:	**4.269**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): ____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): ____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: ____

Confined: ____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: ____

Potential: X

Limited: ____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00002 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Beryllium and compounds	0.31	14.0	0.020
Antimony and compounds	3.3	31.0	0.110
Arsenic (cancer)	5.5	32.0	0.170
Aluminum	14,500.0	77,000.0	0.190
Manganese and compounds	210.0	380.0	0.550
		Total:	**1.041**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - *Little or no potential for receptors to have access to* contaminated soil

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00002 **Soil Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 8/10/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW

Site (Name/RMIS ID) / Project for FUDS: SWMU 00003

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: FIRE/CRASH TRAINING AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Aluminum	258.0	36,500.0	0.010
Trichloroethylene (TCE)	1.7	160.0	0.010
Selenium	2.2	182.5	0.010
Bis(2-ethylhexyl)phthalate (DEHP)	7.0	480.0	0.010
Barium and compounds	39.3	2,555.0	0.020
Dichloroethylene, 1,2- (cis)	1.0	61.0	0.020
Acetone	12.0	610.0	0.020
Methylene chloride	9.0	430.0	0.020
Chloromethane	3.2	150.0	0.020
Antimony and compounds	41.9	14.6	2.870
		Total:	**3.008**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00003 **Groundwater Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00004

RMIS Site Type: SURFACE DISPOSAL AREA

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): 10/18/95

Media Evaluated (GW, SW, Sediment, Soil): SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** Med

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
DDT	0.005	130.0	0.000
Pyrene	1.8	2,000.0	0.000
Fluoranthene	3.1	2,600.0	0.000
Silver and compounds	0.65	380.0	0.000
Benzo[k]fluoranthene	1.2	610.0	0.000
Mercury and compounds (inorganic)	0.12	23.0	0.010
Indeno[1,2,3-cd]pyrene	0.36	61.0	0.010
Zinc	289.0	23,000.0	0.010
Dibenz[ah]anthracene	0.13	6.1	0.020
Benzo[b]fluoranthene	1.6	61.0	0.030
		Total:	**3.034**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00004 **Soil Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/18/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00005

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: SURFACE DISPOSAL AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Low

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):
Surface Soil and Sediments.

Brief Description of Receptors (Human and Ecological):
Mainly ecological receptors.

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
		Total:	**0.000**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00005 **Groundwater Category:** Low
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
		Total:	**0.983**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00005 **Soil Category:** Low
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00006 (SITE 24)

RMIS Site Type: LANDFILL

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 10/10/95

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic (or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer)	436.0	3.8	114.740
Lead	113.0	4.0	28.250
Manganese and compounds	1,690.0	182.5	9.260
Beryllium and compounds	7.8	1.6	4.880
Chromium VI and compounds	500.0	180.0	2.740
Aluminum	98,800.0	37,000.0	2.710
Vanadium	603.0	260.0	2.360
Cadmium and compounds	27.1	18.0	1.480
1,2-Dichloroethane (EDC)	10.0	12.0	0.830
Nickel and compounds	237.0	730.0	0.320
		Total:	**167.928**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SWMU 00006 (SITE 24)

Groundwater Category: High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arochlor 1016	4.2	4.9	0.860
Manganese and compounds	221.0	380.0	0.580
Antimony and compounds	11.9	31.0	0.380
Mercury and compounds (inorganic)	4.7	23.0	0.200
Aluminum	12,600.0	77,000.0	0.160
Cadmium and compounds	4.3	38.0	0.110
Arsenic (cancer)	3.0	32.0	0.090
Dieldrin	0.079	2.8	0.030
Beryllium and compounds	0.36	14.0	0.030
Benzo[a]pyrene	0.15	6.1	0.020
		Total:	**2.476**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SWMU 00006 (SITE 24)

Soil Category: High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 10/10/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWEF SEDH SEDEF SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00007 (site 25)

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: UNDERGROUND STORAGE TANK

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Manganese and compounds	3,950.0	182.5	21.640
Aluminum	206,000.0	37,000.0	5.640
Vanadium	1,100.0	260.0	4.310
Antimony and compounds	53.4	15.0	3.660
Dichloroethylene, 1,2- (mixture)	120.0	55.0	2.180
Hexahydro-1,3,5-trinitro-1,3,5-triazine	48.0	61.0	0.790
Trichloroethane, 1,1,1-	700.0	1,300.0	0.540
Nickel and compounds	391.0	730.0	0.540
Barium and compounds	972.0	2,600.0	0.380
Copper and compounds	182.0	1,400.0	0.130
		Total:	**40.322**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00007 (SITE 25) **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Aluminum phosphide	8,270.0	31.0	266.770
Manganese and compounds	328.0	380.0	0.860
Calcium cyanide	578.0	3,100.0	0.190
Arsenic (noncancer)	2.7	22.0	0.120
Aluminum	8,270.0	77,000.0	0.110
Arsenic (cancer)	2.7	32.0	0.080
Vanadium	25.8	540.0	0.050
Lead	16.2	400.0	0.040
Chromium VI and compounds	11.0	3,000.0	0.030
Benzo[a]pyrene	0.17	6.1	0.030
		Total:	**268.341**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SWMU 00007 (SITE 25)

Soil Category: High
(High, Medium, Low)

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Copper and compounds	2.4	12.0	0.200
Zinc	6.1	110.0	0.060
Beryllium and compounds	0.1	5.3	0.020
Vanadium sulfate	6.8	0.0	0.000
Manganese and compounds	9.1	0.0	0.000
Barium and compounds	23.4	0.0	0.000
Aluminum	116.0		0.000
		Total:	**0.274**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00007 (SITE 25) **Surface Water Fresh Category:** Med (High, Medium, Low)

Sediment Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (noncancer)	17.1	22.0	0.780
Nickel and compounds	21.9	1,500.0	0.010
Benzo[k]fluoranthene	0.34	610.0	0.000
		Total:	**0.792**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00007 (SITE 25) **Sediment Human Category:** Med
(High, Medium, Low)

Sediment Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard mg/Kg	Ratio (2)
Zinc	137.0	120.0	1.140
Lead	36.0	31.0	1.030
Silver and compounds	0.82		0.820
Nickel and compounds	21.9	16.0	0.730
Arsenic (noncancer)	17.1	33.0	0.520
Chromium VI and compounds	40.5	2.6	0.510
Copper and compounds	23.0	1.6	0.330
Pyrene	0.47	0.49	0.000
Benz(a)anthracene	0.26	0.32	0.000
Chrysene	0.36	0.06	0.000
		Total:	**5.078**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00007 (SITE 25) **Sediment Fresh Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Nickel and compounds	21.9	30.0	0.730
Arsenic (noncancer)	17.1	33.0	0.520
Benzo[k]fluoranthene	0.34		0.000
		Total:	**1.248**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00007 (SITE 25) **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SWEF SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00016

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LANDFILL

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	17.8	0.0	
Phenol	1.0	21,900.0	0.000
Trichloroethane, 1,1,1-	3.0	1,300.0	0.000
Dichloroethane, 1,1-	3.0	810.0	0.000
RDX (Cyclonite)	1.3	61.0	0.020
Mercury and compounds (inorganic)	0.25	11.0	0.020
Zinc	376.0	10,950.0	0.030
Dichlorobenzene, 1,4-	4.0	47.0	0.090
Barium and compounds	362.0	2,555.0	0.140
Chlorobenzene	6.0	39.0	0.150
		Total:	**27.916**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00016 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
DDD	0.002	190.0	
DDT	0.002	130.0	0.000
DDE	0.007	130.0	0.000
Bis(2-ethylhexyl)phthalate (DEHP)	0.59	3,200.0	0.000
Dieldrin	0.008	2.8	0.000
Barium and compounds	36.8	5,300.0	0.010
Nickel and compounds	18.3	1,500.0	0.010
Zinc	559.0	23,000.0	0.020
Beryllium and compounds	0.47	14.0	0.030
Mercury and compounds (inorganic)	1.08	23.0	0.050
		Total:	**1.337**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00016 **Soil Category:** Low
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	47.4	0.0	
Phenol	27.0	21,900.0	0.000
Mercury and compounds (inorganic)	2.91	11.0	0.260
Zinc	4,890.0	10,950.0	0.450
Nickel and compounds	775.0	730.0	1.060
Cadmium and compounds	46.6	18.3	2.550
Chromium (total)	517.0	182.5	2.830
Antimony and compounds	62.8	14.6	4.300
Beryllium and compounds	26.3	1.6	16.440
Lead	293.0	4.0	73.250
		Total:	**101.142**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00016 **Surface Water Human Category:** High (High, Medium, Low)

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Phenol	27.0	2,560.0	0.010
Arsenic (cancer endpoint)	47.4	190.0	0.250
Antimony and compounds	62.8	30.0	2.090
Nickel and compounds	775.0	160.0	4.840
Beryllium and compounds	26.3	5.3	4.960
Cadmium and compounds	46.6	1.1	42.360
Zinc	4,890.0	110.0	44.450
Chromium (total)	517.0	11.0	47.000
Lead	293.0	3.2	91.560
Mercury and compounds (inorganic)	2.91	0.012	242.500
		Total:	**480.040**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00016 **Surface Water Fresh Category:** High (High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Benzo[a]pyrene	0.05	400.0	0.000
Chrysene	0.075	400.0	0.000
Pyrene	0.081	350.0	0.000
Anthracene	0.021	85.0	0.000
Fluoranthene	0.19	600.0	0.000
Benz[a]anthracene	0.074	230.0	0.000
Phenanthrene	0.077	225.0	0.000
Copper and compounds	8.3	70.0	0.120
Arsenic (cancer endpoint)	6.5	33.0	0.200
Chromium (total)	17.2	80.0	0.220
		Total:	**3.599**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00016 **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SITE 00017

RMIS Site Type: LANDFILL

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 3/4/96

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	106.0	0.0	
Zinc	231.0	10,950.0	0.020
Mercury and compounds (inorganic)	0.36	11.0	0.030
Nickel and compounds	351.0	730.0	0.480
Beryllium and compounds	5.8	1.6	3.630
Aluminum	164,000.0	36,500.0	4.490
Chromium (total)	920.0	182.5	5.040
Lead	65.4	4.0	16.350
		Total:	**30.044**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00017 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Fluoranthene	1.8	2,600.0	0.000
Zinc	26.9	23,000.0	0.000
Pyrene	3.9	2,000.0	0.000
Mercury and compounds (inorganic)	0.08	23.0	0.000
Benzo[k]fluoranthene	2.8	610.0	0.000
Benz[a]anthracene	2.5	61.0	0.040
Indeno[1,2,3-cd]pyrene	2.7	61.0	0.040
Benzo[b]fluoranthene	3.0	61.0	0.050
Chrysene	2.6	24.0	0.110
Arsenic (cancer endpoint)	2.8	22.0	0.130
		Total:	**1.550**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00017 **Soil Category:** Low
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/4/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SWEF SEDEM

Site (Name/RMIS ID) / Project for FUDS: SITE 00018

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: DRAINAGE DITCH

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Nickel and compounds	23.2	730.0	0.030
Zinc	357.0	10,950.0	0.030
Mercury and compounds (inorganic)	0.73	11.0	0.070
Barium and compounds	505.0	2,555.0	0.200
Cadmium and compounds	12.6	18.3	0.690
Chromium (total)	294.0	182.5	1.610
Aluminum	144,000.0	36,500.0	3.950
Beryllium and compounds	7.5	1.6	4.690
Lead	260.0	4.0	65.000
		Total:	**76.261**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00018 **Groundwater Category:** High
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	4.1	0.0	
Zinc	369.0	10,950.0	0.030
Copper and compounds	199.0	1,355.7	0.150
		Total:	**0.180**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00018 **Surface Water Human Category:** Low
(High, Medium, Low)

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	4.1	190.0	0.020
Zinc	369.0	110.0	3.350
Copper and compounds	199.0	12.0	16.580
		Total:	**19.959**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00018 **Surface Water Fresh Category:** High (High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (cancer endpoint)	1.9	33.0	0.060
Nickel and compounds	5.3	30.0	0.180
Chromium (total)	18.0	80.0	0.220
Lead	8.3	35.0	0.240
Zinc	44.0	120.0	0.370
Copper and compounds	29.0	70.0	0.410
Antimony and compounds	12.8	2.0	6.400
		Total:	**7.877**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00018 **Sediment Marine Category:** Med (High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 6/6/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SITE 00019

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: CONTAMINATED GROUND WATER

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Trinitrotoluene, 2,4,6-	5.1	220.0	0.020
Aluminum	4,510.0	36,500.0	0.120
Cadmium and compounds	4.5	18.3	0.250
Trinitrobenzene, 1,3,5-	1.3	1.8	0.720
		Total:	**1.115**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: _____

Limited: X

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00019 **Groundwater Category:** Low
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Dinitrotoluene, 2,6-	0.77	6,500.0	0.000
Zinc	69.1	23,000.0	0.000
Copper and compounds	14.9	2,800.0	0.010
Dinitrotoluene, 2,4-	1.3	130.0	0.010
Nickel and compounds	20.0	1,500.0	0.010
Trinitrotoluene, 2,4,6-	120.0	4,800.0	0.030
Chromium (total)	28.7	380.0	0.080
Vanadium	49.1	540.0	0.090
Lead	49.9	400.0	0.120
Beryllium and compounds	2.6	14.0	0.190
		Total:	**3.305**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00019 **Soil Category:** High
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Benzo[a]pyrene	1.2	400.0	0.000
Anthracene	0.4	85.0	0.000
Fluorene	0.23	35.0	0.010
Benz[a]anthracene	1.6	230.0	0.010
Dibenz[ah]anthracene	0.46	60.0	0.010
Chrysene	8.2	400.0	0.020
Pyrene	13.0	350.0	0.040
Fluoranthene	27.0	600.0	0.050
Phenanthrene	26.0	225.0	0.120
Zinc	125.0	120.0	1.040
		Total:	**1.289**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00019 **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SITE 00021

RMIS Site Type: SURFACE DISPOSAL AREA

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Arsenic (cancer endpoint)	5.8	0.0	
Mercury and compounds (inorganic)	0.25	11.0	0.020
Nickel and compounds	117.0	730.0	0.160
Barium and compounds	412.0	2,555.0	0.160
Nitrate	25,100.0	58,400.0	0.430
Chromium (total)	244.0	182.5	1.340
Aluminum	80,300.0	36,500.0	2.200
Cadmium and compounds	145.0	18.3	7.920
Beryllium and compounds	18.1	1.6	11.310
Lead	83.0	4.0	20.750
		Total:	**135.621**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: _____

Limited: X

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00021 **Groundwater Category:** Med
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Xylene (mixed)	0.004	980.0	0.000
Trichloroethane, 1,1,1-	0.014	1,900.0	0.000
Styrene	0.02	2,200.0	0.000
Toluene	0.035	870.0	0.000
Pyrene	0.98	2,000.0	0.000
Bis(2-ethylhexyl)phthalate (DEHP)	2.1	3,200.0	0.000
Benzo[k]fluoranthene	0.54	610.0	0.000
Pentachlorophenol	0.29	250.0	0.000
Nickel and compounds	9.2	1,500.0	0.010
Barium and compounds	72.8	5,300.0	0.010
		Total:	**2.277**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00021 **Soil Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 6/5/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): SWH SWEM

Site (Name/RMIS ID) / Project for FUDS: SITE 00022

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: BURN AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):
SURFACE WATER

Brief Description of Receptors (Human and Ecological):
ECOLOGICAL AND HUMAN

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Mercury and compounds (inorganic)	5.56	11.0	0.510
Cadmium and compounds	11.6	18.3	0.630
Beryllium and compounds	2.2	1.6	1.380
Antimony and compounds	44.1	14.6	3.020
Lead	215.0	4.0	53.750
		Total:	**59.285**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: _____

Limited: X

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00022 **Surface Water Human Category:** Low
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Antimony and compounds	43.1	500.0	0.090
Lead	32.5	8.5	3.820
Nickel and compounds	33.6	8.3	4.050
Zinc	1,200.0	86.0	13.950
		Total:	**21.911**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SITE 00022 **Surface Water Marine Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 10/10/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SWH SWEM SEDH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00001 (SITE 23)

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: SURFACE DISPOSAL AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Thallium	5.4	0.0	0.000
2,4,6-Trinitrotoluene	4.6	220.0	0.020
Cadmium and compounds	2.7	18.3	0.150
RDX (Cyclonite)	15.0	61.0	0.250
Barium and compounds	820.0	2,555.0	0.320
Vanadium	182.0	255.5	0.710
Dinitrotoluene mixture	9.4	9.9	0.950
Aluminum	76,300.0	36,500.0	2.090
Manganese and compounds	4,350.0	182.5	23.840
		Total:	**28.323**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00001 (SITE 23) **Groundwater Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 9/10/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00008

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: INDUSTRIAL DISCHARGE

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Low

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (cancer)	49.0	22.0	2.230
Lead	356.0	400.0	0.890
Manganese and compounds	305.0	380.0	0.800
Vanadium	88.6	540.0	0.160
Benzo[a]pyrene	0.35	6.1	0.060
Anthracin	0.76	19.0	0.040
Beryllium and compounds	0.48	14.0	0.030
Mercury	0.46	23.0	0.020
Benzo(b)fluoranthene	0.64	61.0	0.010
Butyl benzyl phthalate	0.5	13,000.0	0.000
		Total:	**4.240**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: _____

Confined: X

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: _____

Limited: X

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00008 **Soil Category:** Low
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00009

RMIS Site Type: LEACH FIELD

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 11/14/95

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** Med

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
1,3,5-Trinitrobenzene	2.9	1.8	1.610
RDX (Cyclonite)	15.0	61.0	0.250
Arsenic (cancer)	0.24	3.8	0.060
Lead	0.09	4.0	0.020
2,4,6-Trinitrotoluene	4.2	220.0	0.020
2,4-Dinitrophenol	0.97	73.0	0.010
Cyanide (free)	3.9	730.0	0.010
Beryllium and compounds	0.005	1.6	0.000
Chromium VI and compounds	0.31	180.0	0.000
Vanadium	0.19	260.0	0.000
		Total:	**1.987**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00009 **Groundwater Category:** Med
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Manganese and compounds	35.4	380.0	0.090
Lead	9.7	400.0	0.020
Mercury and compounds (inorganic)	0.12	23.0	0.010
Zinc	21.3	23,000.0	0.000
		Total:	**0.124**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00009 **Soil Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 11/13/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW

Site (Name/RMIS ID) / Project for FUDS: SWMU 00010

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: LEACH FIELD

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Med

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	0.3	4.0	0.080
Manganese and compounds	3.2	182.5	0.020
Vanadium	0.63	260.0	0.000
Copper and compounds	0.8	1,400.0	0.000
Cyanide (free)	0.014	730.0	0.000
		Total:	**9.56E-02**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00010 **Groundwater Category:** Med (High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00011

RMIS Site Type: INDUSTRIAL DISCHARGE

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): _____

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** NRB

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00012

RMIS Site Type: MAINTENANCE YARD

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 10/10/95

Media Evaluated (GW, SW, Sediment, Soil): SOIL

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Benzo[a]pyrene	32.0	6.1	5.250
Arsenic (cancer)	32.8	32.0	1.020
Benz(a)anthracene	43.0	61.0	0.700
Indeno[1,2,3-cd]pyrene	14.0	61.0	0.230
Benzo[k]fluoranthene	44.0	610.0	0.070
		Total:	**7.277**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SWMU 00012

Soil Category: High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00013

RMIS Site Type: INDUSTRIAL DISCHARGE

Point of Contact (Name/Phone): _____

Date Entered (Day, Month, Year): _____

Media Evaluated (GW, SW, Sediment, Soil): _____

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): _____

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** NRB

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

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(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/18/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): SWH SEDH SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00014

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: INDUSTRIAL DISCHARGE

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	510.0	3,300.0	0.150
RDX (Cyclonite)	4.9	400.0	0.010
		Total:	**0.167**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00014 **Soil Category:** High
(High, Medium, Low)

Surface Water Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
RDX (Cyclonite)	0.65	61.0	0.010
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	0.65	1,800.0	0.000
		Total:	**0.011**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could by due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00014 **Surface Water Human Category:** Med
(High, Medium, Low)

Sediment Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Octahydro-1357-tetranitro-1357- tetrazocine (HMX)	1.7	3,300.0	0.000
		Total:	**5.15E-04**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00014 **Sediment Human Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 12/14/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SEDH SEDEM SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00015

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: SEWAGE EFFLUENT SETTLING PONDS

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Med

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Vanadium	329.0	260.0	1.290
Manganese and compounds	155.0	182.5	0.850
Nickel and compounds	263.0	730.0	0.360
Barium and compounds	849.0	2,600.0	0.330
HCH (beta)	0.05	3.7	0.010
DDT	0.16	20.0	0.010
Trichloroethane, 1,1,1-	7.0	1,300.0	0.010
Dichloroethane, 1,1-	0.6	810.0	0.000
		Total:	**2.857**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00015 **Groundwater Category:** Med
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (cancer)	19.2	32.0	0.600
Manganese and compounds	175.0	380.0	0.460
Antimony and compounds	4.0	31.0	0.130
Beryllium and compounds	0.61	14.0	0.040
		Total:	**1.233**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS

Site Name: SWMU 00015

Soil Category: Med
(High, Medium, Low)

Sediment Human

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Mercury and compounds (inorganic)	0.44	23.0	0.020
DDT	0.086	130.0	0.000
DDE,4,4-	0.031	130.0	0.000
DDD,4,4-	0.049	190.0	0.000
Chlordane, gamma-	0.0054	34.0	0.000
		Total:	**1.98E-02**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00015 **Sediment Human Category:** Med
(High, Medium, Low)

Surface Water Eco Marine

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
DDD,4,4-	0.049		0.050
DDT	0.086	0.002	0.040
DDE,4,4-	0.031		0.020
Mercury and compounds (inorganic)	0.44	0.15	0.000
Chlordane, gamma-	0.0054	0.0005	0.000
		Total:	**0.108**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00015 **Sediment Marine Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 6/5/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW

Site (Name/RMIS ID) / Project for FUDS: SWMU 00016

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: SURFACE DISPOSAL AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Low

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
		Total:	**0.000**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: _____

Limited: X

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00016 **Groundwater Category:** Low
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 10/10/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00017

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: UNDERGROUND STORAGE TANK

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Manganese and compounds	1,670.0	182.5	9.150
Aluminum	56,000.0	37,000.0	1.530
Mercury and compounds (inorganic)	1.8	11.0	0.160
Heptachlor epoxide	0.1	0.74	0.140
		Total:	**10.984**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00017 **Groundwater Category:** High
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Manganese and compounds	75.0	380.0	0.200
Aluminum	10,500.0	77,000.0	0.140
Arsenic (cancer)	2.8	32.0	0.090
Beryllium and compounds	0.31	14.0	0.020
		Total:	**0.443**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00017 **Soil Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 10/10/95

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00018 (SITE 26)

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: UNDERGROUND STORAGE TANK

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Med

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Dichloroethane, 1,1-	160.0	810.0	0.200
		Total:	0.198

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00018 (SITE 26) **Groundwater Category:** Med
(High, Medium, Low)

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Manganese and compounds	548.0	380.0	1.440
Aluminum	12,600.0	77,000.0	0.160
Benzo[a]pyrene	0.9	6.1	0.150
Arsenic (cancer)	1.6	32.0	0.050
Beryllium and compounds	0.34	14.0	0.020
Dibenz[ah]anthracene	0.14	6.1	0.020
Benz(a)anthracene	1.4	61.0	0.020
Benzo[b]fluoranthene	1.1	61.0	0.020
		Total:	**1.892**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): X

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00018 (SITE 26) **Soil Category:** Med
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/18/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): GW

Site (Name/RMIS ID) / Project for FUDS: SWMU 00019

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: CONTAMINATED SEDIMENTS

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** Med

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Ground Water

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Lead	175.0	4.0	43.750
Arsenic (cancer)	122.0	3.8	32.110
Manganese and compounds	2,530.0	182.5	13.860
Aluminum	199,000.0	37,000.0	5.450
Antimony and compounds	40.9	15.0	2.800
Barium and compounds	1,060.0	2,600.0	0.410
Bis(2-ethylhexyl)phthalate (DEHP)	82.0	480.0	0.170
RDX (Cyclonite)	2.2	61.0	0.040
Dinitrotoluene, 2,4-	0.27	73.0	0.000
Dinitrotoluene, 2,6-	0.27	37.0	0.000
		Total:	**98.597**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is moving away from the source.

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates that the potential for contaminant migration from the source is limited (due to geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - There is a threatened or potentially threatened water supply downgradient of the source. The GW (cont. or not) is a current drinking water source or is equiv. to (Class I or IIA aquifer).

Potential - There is no potentially threatened water supply well downgradient of the source. The groundwater is potentially usable for DW, irrigation or agriculture, but not presently used (Class IIB aquifer).

Limited - There is no potentially threatened water supply well downgradient of the source. The groundwater is not considered a potential source of DW or is of limited benificial use (IIIA, IIIB or perched aquifer).

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00019 **Groundwater Category:** Med (High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00020

RMIS Site Type: CONTAMINATED SEDIMENTS

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 3/18/96

Media Evaluated (GW, SW, Sediment, Soil): SWEF

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic (or RFA) phase that has not been entered into RMIS.

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Dieldrin	7.4	0.0019	3894.740
Heptachlor epoxide	3.0	0.0038	789.470
DDE,4,4-	15.0	0.0	0.000
		Total:	**4684.210**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

Brief Rationale for Selection:

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Brief Rationale for Selection:

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00020 **Surface Water Fresh Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Location (State): VA

Site (Name/RMIS ID) / Project for FUDS: SWMU 00021

RMIS Site Type: CONTAMINATED SEDIMENTS

Point of Contact (Name/Phone):

Date Entered (Day, Month, Year): 3/18/96

Media Evaluated (GW, SW, Sediment, Soil): SWEF SEDEF

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Surface Water Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard ug/L	Ratio (2)
Aroclor	18.0	0.014	1285.710
Mercury	0.48	0.012	40.000
		Total:	**1325.710**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to surface water

Potential - Potential for receptors to have access to surface water

Limited - Little or no potential for receptors to have access to surface water

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00021 **Surface Water Fresh Category:** High
(High, Medium, Low)

Sediment Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard mg/Kg	Ratio (2)
Aroclor	270.0	0.07	5400.000
		Total:	**5400.000**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): X

Moderate (If Total 2 - 100): _____

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: _____

Potential: X

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: X

Potential: _____

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00021 **Sediment Fresh Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/18/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00022

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: SURFACE DISPOSAL AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Lead	3,100.0	400.0	7.750
Manganese	1,500.0	330.0	4.690
Chromium VI and compounds	1,600.0	3,000.0	4.210
Cadmium and compounds	120.0	38.0	3.160
Arsenic (noncancer)	41.0	22.0	1.860
Zinc	7,700.0	23,000.0	0.330
Beryllium and compounds	0.45	14.0	0.030
		Total:	**22.030**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00022 **Soil Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 3/18/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00023

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage):

RMIS Site Type: SURFACE DISPOSAL AREA

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) Yes

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Arsenic (noncancer)	160.0	22.0	7.270
Beryllium and compounds	1.2	14.0	0.090
		Total:	**7.360**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00023 **Soil Category:** High
(High, Medium, Low)

RELATIVE RISK EVALUATION WORKSHEET

Installation/Site Name for FUDS YORKTOWN VA NWS

Date Entered (Day, Month, Year): 7/8/96

Location (State): VA

Media Evaluated (GW, SW, Sediment, Soil): SEDEF SOIL

Site (Name/RMIS ID) / Project for FUDS: SWMU 00024

Phase of Exec. (SI, RI, FS, Remv, RD/RA, or equiv. RCRA Stage): CERCLA PA

RMIS Site Type: INCINERATOR

Agr. Status (Y/N, If yes, type of agreement e.g., FFA, Permit, Order) No

Point of Contact (Name/Phone):

National Priority List (Y/N): No **Site Rank:** High

SITE SUMMARY

(Include only key elements of information used to conduct the relative risk site evaluation. Attach map view of site if desired.)

Brief Site Description (Include site type, materials disposed of, dates of operation, and other relevant information):

Brief Description of Pathways (Groundwater, Surface Water, Sediment, Soil):

Brief Description of Receptors (Human and Ecological):

(1) Use to record information on Sites and Areas of Concern (AOC) for Relative Risk Site Evaluation. The term Site is defined as a discrete area for which suspected contamination has been verified and requ
A Site by definition has been, or will be, entered into RMIS. For the FUDS Program, "projects" equates to sites for current installations. An AOC is a discrete area of contamination, or suspected contaminatic
(or RFA) phase that has not been entered into RMIS.

Soil

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. mg/Kg	Standard mg/Kg	Ratio (2)
Vanadium	11,200.0	540.0	20.740
Lead	2,300.0	400.0	5.750
Arsenic (cancer)	83.8	32.0	2.620
Beryllium and compounds	5.9	14.0	0.420
Mercury and compounds (methyl)	2.6	6.5	0.130
Iron	125,000.0	23,000.0	0.000
		Total:	**29.660**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination is present at, is moving towards, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Low possibility for contamination to be present at or migrate to a point of exposure

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to contaminated soil

Potential - Potential for receptors to have access to contaminated soil

Limited - Little or no potential for receptors to have access to contaminated soil

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: _____

Limited: X

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00024 **Soil Category:** Med
(High, Medium, Low)

Sediment Eco Fresh

CONTAMINANT HAZARD FACTOR (1) (CHF)

Contaminant	Maximum Conc. ug/L	Standard mg/Kg	Ratio (2)
Lead	80.3	31.0	2.290
Arsenic (cancer)	20.1	33.0	0.610
Chromium VI and compounds	39.4	2.6	0.490
		Total:	**3.390**

(1) Evaluate for human contaminants only
(2) Ratio = Maximum Concentration/Standard
Note: Only top ten contaminants are displayed.

(Place an "X" next to one below)

Significant (If Total > 100): _____

Moderate (If Total 2 - 100): X

Minimal (If Total < 2): _____

MIGRATION PATHWAY FACTOR (MPF)

Evident - Analytical data or observable evidence indicates that contamination in the media is present at, is moving toward, or has moved to a point of exposure

Potential - Possibility for contamination to be present at or migrate to a point of exposure; or information is not sufficient to make a determination of Evident or Confined

Confined - Information indicates a low potential for contamination to a potential point of exposure (could be due to the presence of geological structures or or physical controls)

Brief Rationale for Selection:

(Place an "X" next to one below)

Evident: X

Potential: _____

Confined: _____

RECEPTOR FACTOR (RF)

Identified - Receptors identified that have access to sediment

Potential - Potential for receptors to have access to sediment

Limited - Little or no potential for receptors to have access to sediment

Brief Rationale for Selection:

(Place an "X" next to one below)

Identified: _____

Potential: X

Limited: _____

Activity Name: YORKTOWN VA NWS **Site Name:** SWMU 00024 **Sediment Fresh Category:** High
(High, Medium, Low)

APPENDIX B
DETAILED ACTUAL SCHEDULES FOR COMPLETED ACTIONS
(REMOVAL ACTIONS AND FINALIZED REPORTS)
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Figure B - 1

FY 1994: Site 5 Risk Assessment, Proposed Plan, and Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE 5	393ed	9/1/93	9/29/94
RISK ASSESSMENT	**275ed**	**9/1/93**	**6/3/94**
Preliminary Draft	61ed	9/1/93	11/1/93
Review (Navy)	29ed	11/1/93	11/30/93
Draft	30ed	11/30/93	12/30/93
Review (EPA/State)	60ed	12/30/93	2/28/94
Draft Final	60ed	2/28/94	4/29/94
Final	35ed	4/29/94	6/3/94
PROPOSED PLAN	**212ed**	**11/1/93**	**6/1/94**
Preliminary Draft	30ed	11/1/93	12/1/93
Review (Navy)	33ed	12/1/93	1/3/94
Draft	28ed	1/3/94	1/31/94
Review (EPA/State)	60ed	1/31/94	4/1/94
Draft Final	31ed	4/1/94	5/2/94
Final	30ed	5/2/94	6/1/94
PUBLIC COMMENT PERIOD	**45ed**	**6/5/94**	**7/20/94**

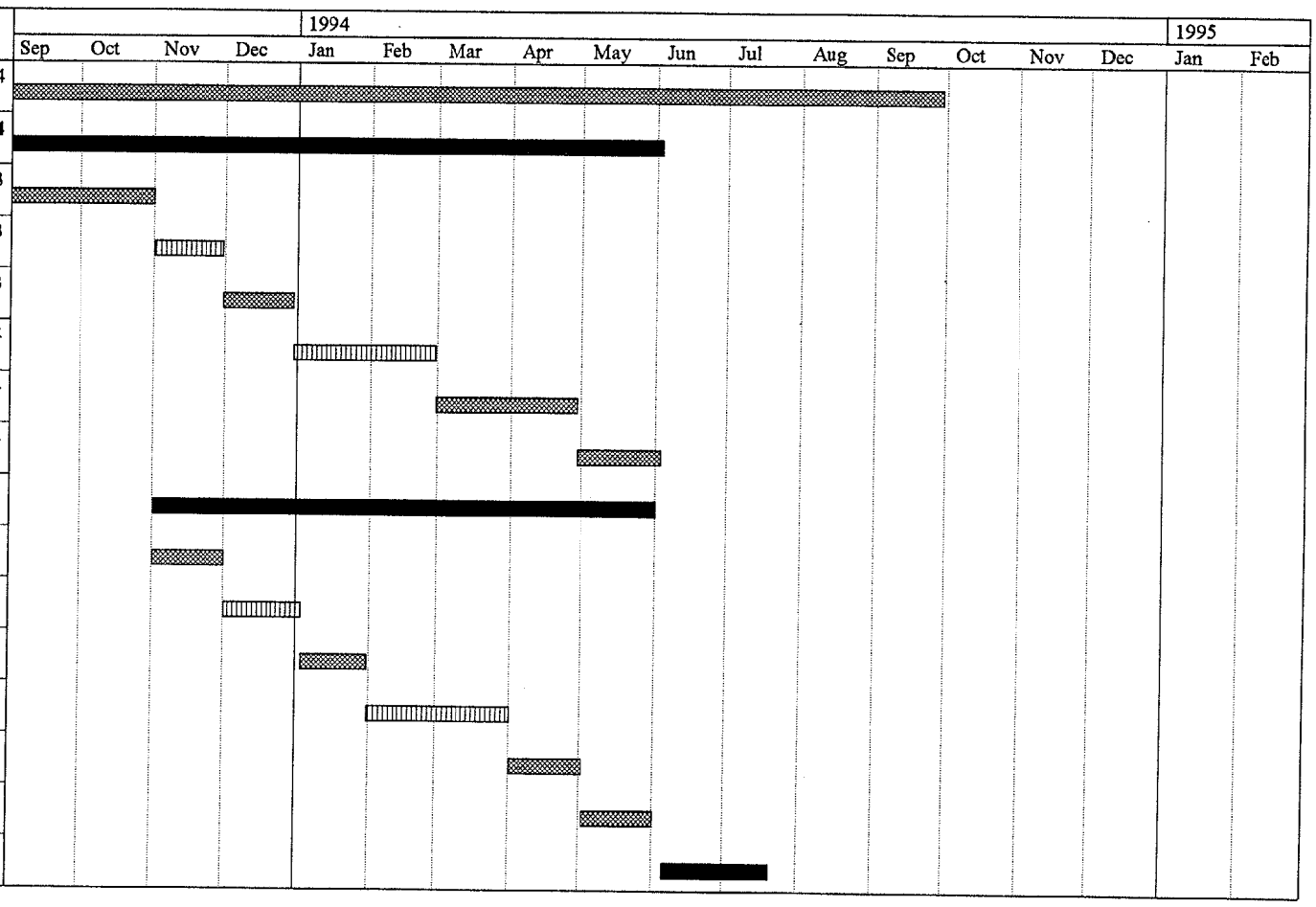


Figure B - 1

FY 1994: Site 5 Risk Assessment, Proposed Plan, and Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
RECORD OF DECISION	**302ed**	**12/1/93**	**9/29/94**
Preliminary Draft	33ed	12/1/93	1/3/94
Review (Navy)	29ed	1/3/94	2/1/94
Draft	29ed	2/1/94	3/2/94
Review (EPA/State)	61ed	3/2/94	5/2/94
Draft Final	30ed	5/2/94	6/1/94
Final	120ed	6/1/94	9/29/94

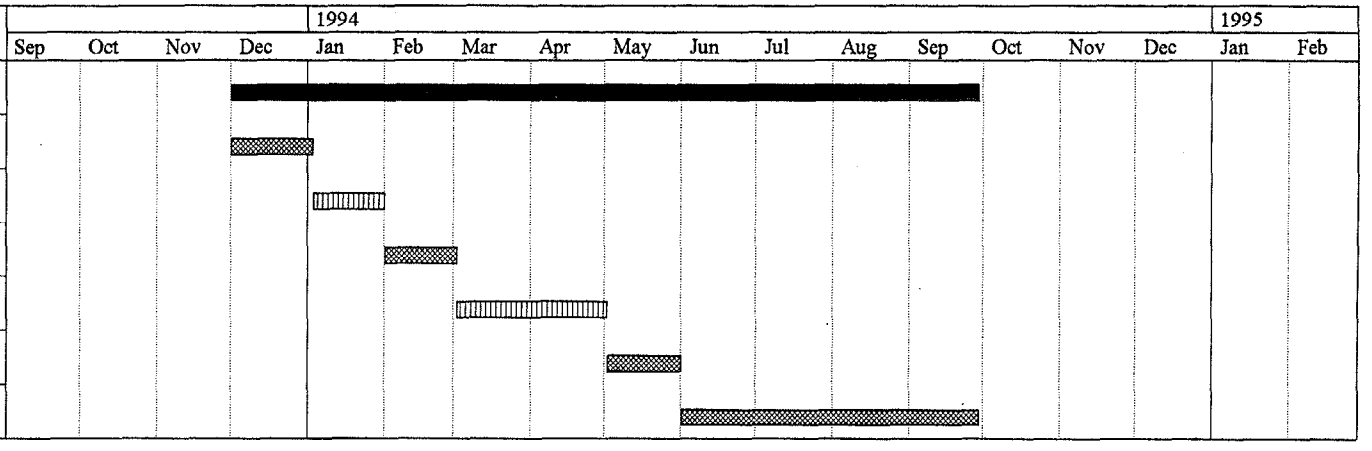


Figure B - 2

FY 1993: Removal Action at Sites 4, 16, and 21
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 4, 16, and 21	624ed	2/15/93	11/1/94
EE/CA Report	**393ed**	**2/15/93**	**3/15/94**
Public Comment Period	31ed	10/21/93	11/21/93
Final	113ed	11/22/93	3/15/94
REMOVAL ACTION MEMORANDUM	**105ed**	**11/30/93**	**3/15/94**
Draft	30ed	11/30/93	12/30/93
Review (Navy/EPA/State)	32ed	12/30/93	1/31/94
Final	43ed	1/31/94	3/15/94
REMOVAL ACTION WORK PLAN (Revised)	**190ed**	**9/30/93**	**4/8/94**
Draft	131ed	9/30/93	2/8/94
Review (Navy/EPA/State)	28ed	2/8/94	3/8/94
Final	31ed	3/8/94	4/8/94
REMOVAL ACTION	**214ed**	**4/1/94**	**11/1/94**

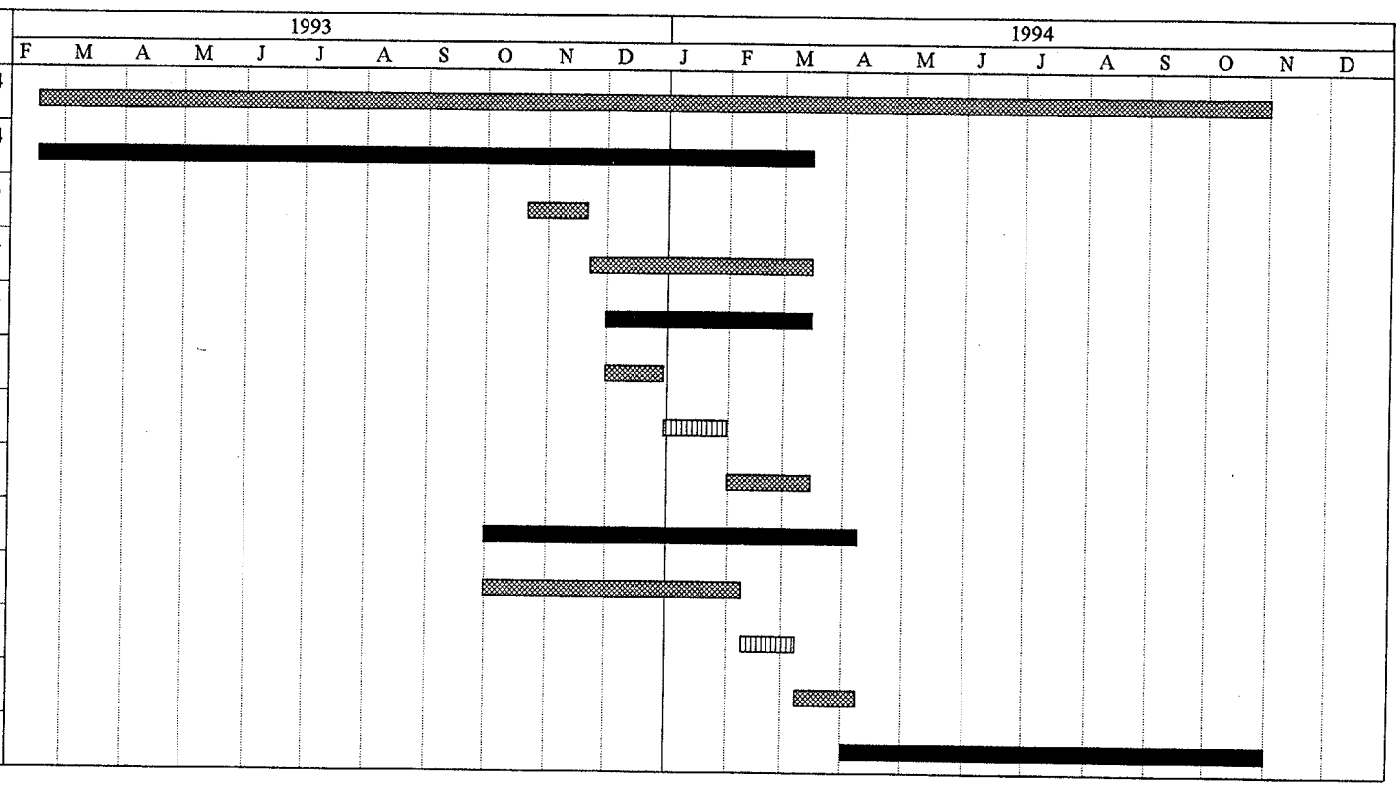


Figure B - 3

FY 1994: Sites 6, 7, 12, 16, SSA 16 and Background Work Plan / Field Investigation
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 6, 7, 12, 16, SSA 16 AND BACKGROUND	474ed	9/1/93	12/19/94
RI WORK PLAN	**276ed**	**9/1/93**	**6/4/94**
Preliminary Draft	61ed	9/1/93	11/1/93
Review (Navy)	30ed	11/1/93	12/1/93
Draft	34ed	12/1/93	1/4/94
Review (EPA/State)	60ed	1/4/94	3/5/94
Draft Final	60ed	3/5/94	5/4/94
Final	31ed	5/4/94	6/4/94
RI FIELD INVESTIGATION	**135ed**	**6/20/94**	**11/2/94**
Mobilization	15ed	6/20/94	7/5/94
Field Investigation	120ed	7/5/94	11/2/94
SAMPLE ANALYSIS/VALIDATION	**160ed**	**7/7/94**	**12/14/94**
Sample Analysis	146ed	7/7/94	11/30/94
Data Validation	132ed	8/4/94	12/14/94

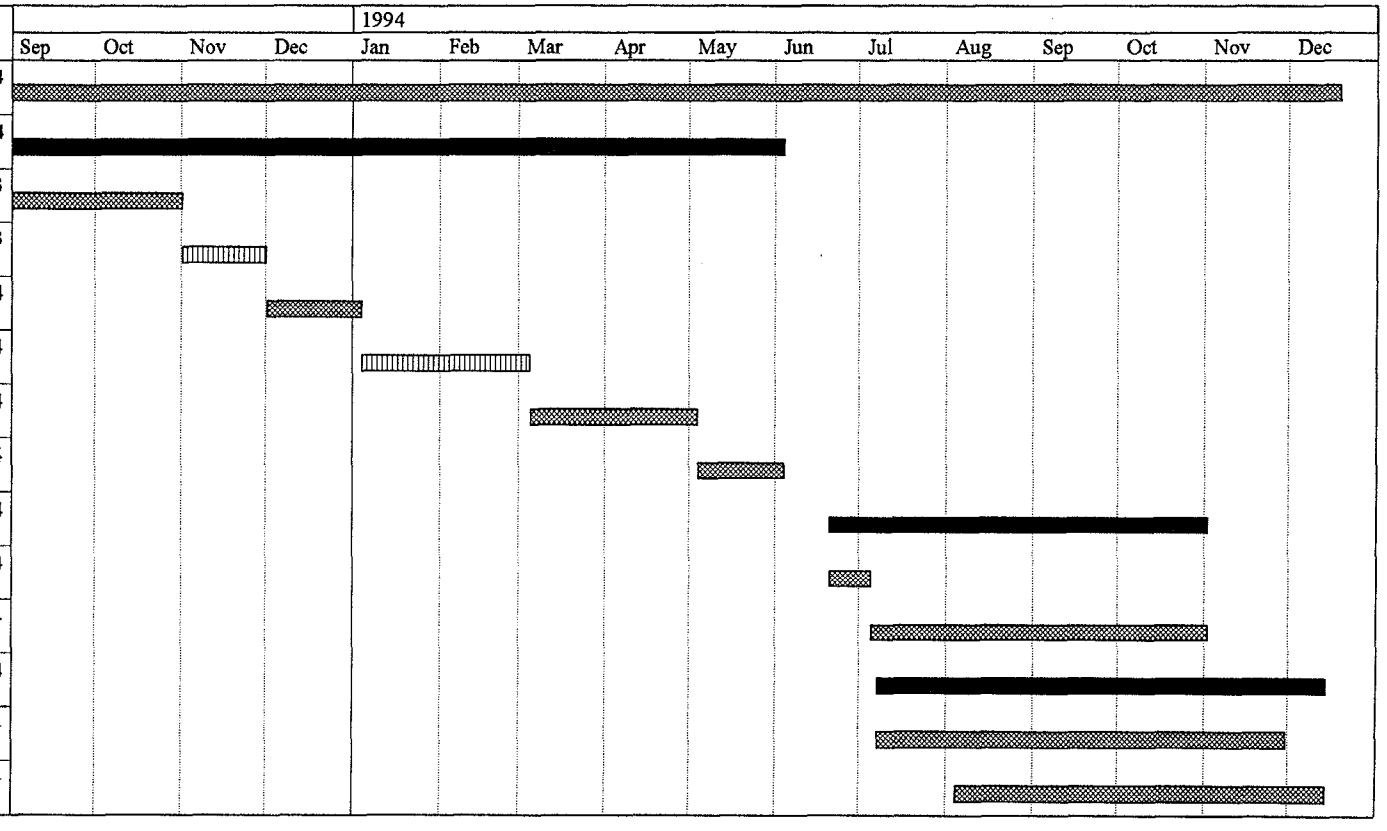


Figure B - 4

FY 1993: Removal Action at Sites 2, 9 and SSA 4
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 2, 9 and SSA 4	679ed	4/12/93	2/20/95
EE/CA Report	**309ed**	**4/12/93**	**2/15/94**
Draft Final	23ed	11/22/93	12/15/93
PUBLIC COMMENT PERIOD	31ed	12/19/93	1/19/94
Final	22ed	1/24/94	2/15/94
REMOVAL ACTION MEMORANDUM	**74ed**	**4/4/94**	**6/17/94**
Draft	30ed	4/4/94	5/4/94
Review (Navy/EPA/State)	30ed	5/4/94	6/3/94
Final	14ed	6/3/94	6/17/94
REMOVAL ACTION WORK PLAN	**90ed**	**6/3/94**	**9/1/94**
Draft	30ed	6/3/94	7/3/94
Review (Navy/EPA/State)	30ed	7/3/94	8/2/94
Final	30ed	8/2/94	9/1/94
REMOVAL ACTION	**172ed**	**9/1/94**	**2/20/95**

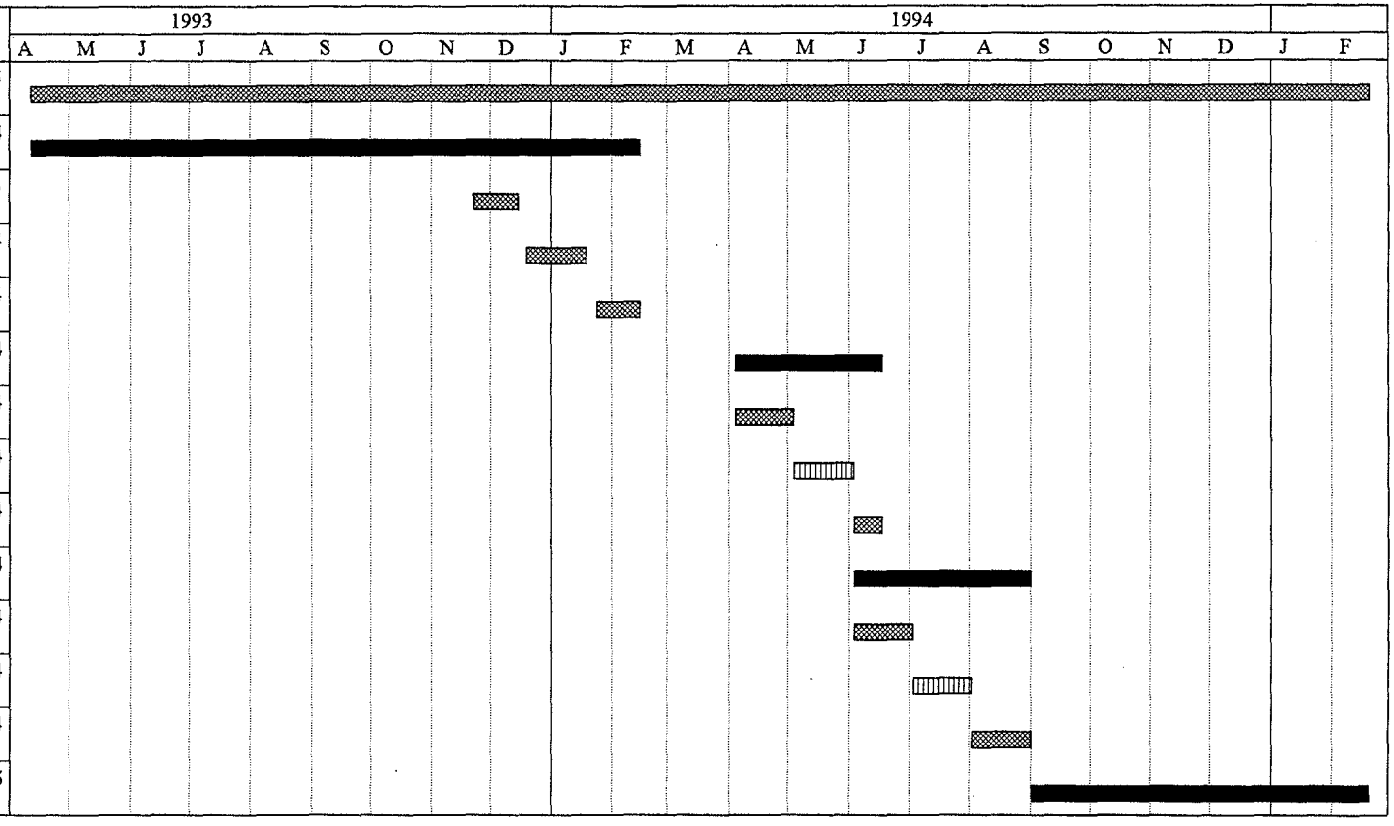


Figure B - 5

FY 1994: Removal Action at Site Screening Areas 1, 2 and 5
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREAS 1, 2, and 5	610ed	9/1/93	5/4/95
EE/CA REPORT (Includes Sampling/Analysis)	**288ed**	**9/1/93**	**6/16/94**
Preliminary Draft	93ed	9/1/93	12/3/93
Review (Navy)	24ed	12/3/93	12/27/93
Draft	48ed	12/27/93	2/13/94
Review (EPA/State)	30ed	2/13/94	3/15/94
PUBLIC COMMENT PERIOD	**30ed**	**2/13/94**	**3/15/94**
Final	93ed	3/15/94	6/16/94
REMOVAL ACTION MEMORANDUM	**93ed**	**3/15/94**	**6/16/94**
Draft	34ed	3/15/94	4/18/94
Review (Navy/EPA/State)	28ed	4/18/94	5/16/94
Final	31ed	5/16/94	6/16/94
REMOVAL ACTION DESIGN	**126ed**	**10/11/93**	**2/14/94**
90% Design	53ed	10/11/93	12/3/93
Review (Navy)	34ed	12/3/93	1/6/94
Final Design	39ed	1/6/94	2/14/94
REMOVAL ACTION WORK PLAN	**68ed**	**5/4/94**	**7/11/94**
Draft	33ed	5/4/94	6/6/94
Review (Navy)	14ed	6/6/94	6/20/94
Final	21ed	6/20/94	7/11/94
REMOVAL ACTION	**117ed**	**7/11/94**	**11/5/94**
Mobilize and Setup	23ed	7/11/94	8/3/94

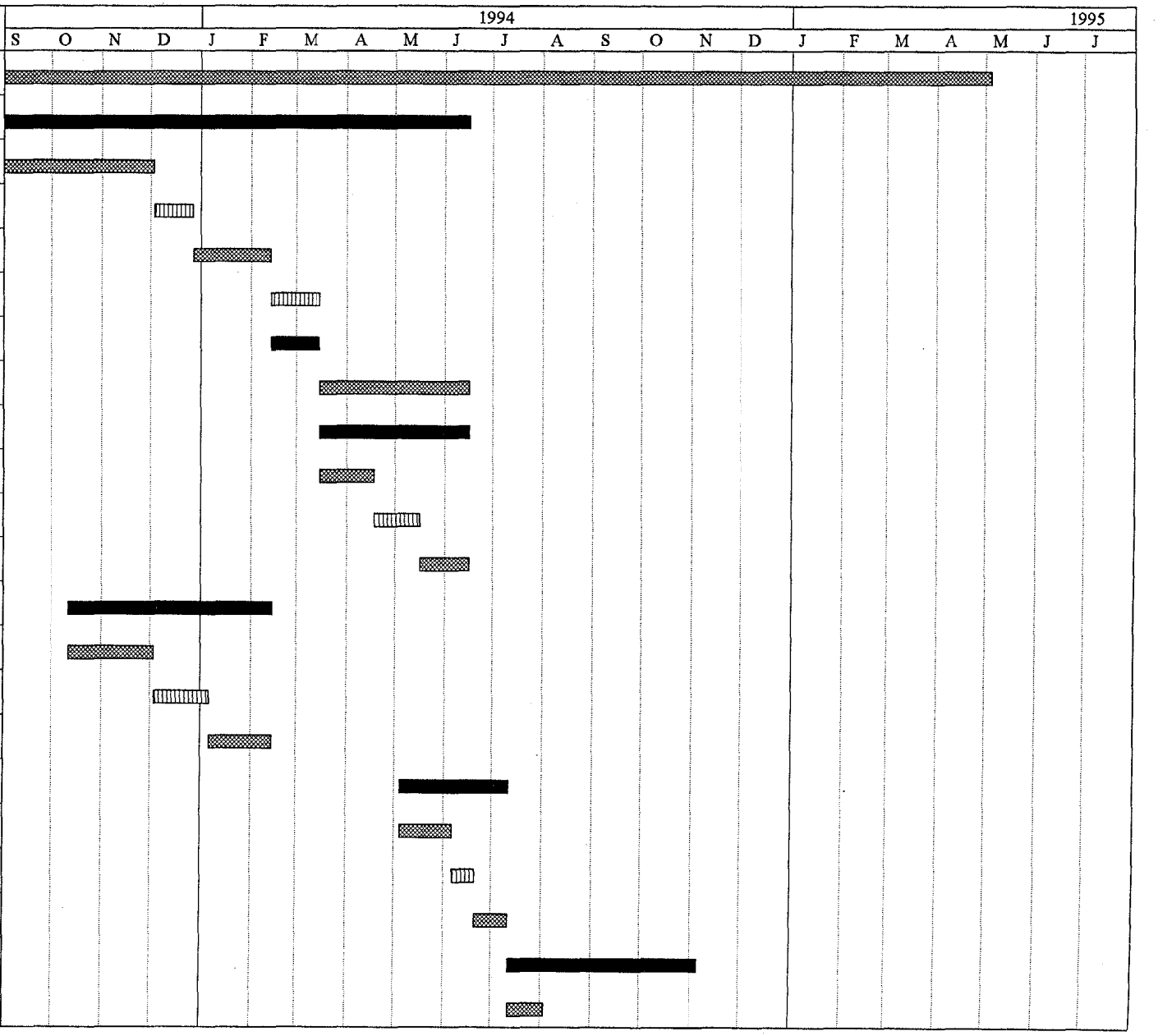


Figure B - 5

FY 1994: Removal Action at Site Screening Areas 1, 2 and 5
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
Removal Action - SSA 2	19ed	8/3/94	8/22/94
Removal Action - SSA 5	22ed	8/11/94	9/2/94
Removal Action - SSA 1	89ed	8/3/94	10/31/94
Confirmation Sampling - 3 SSAs	84ed	8/8/94	10/31/94
Lab Analysis/Data Validation	77ed	8/15/94	10/31/94
Project Closeout	31ed	10/5/94	11/5/94

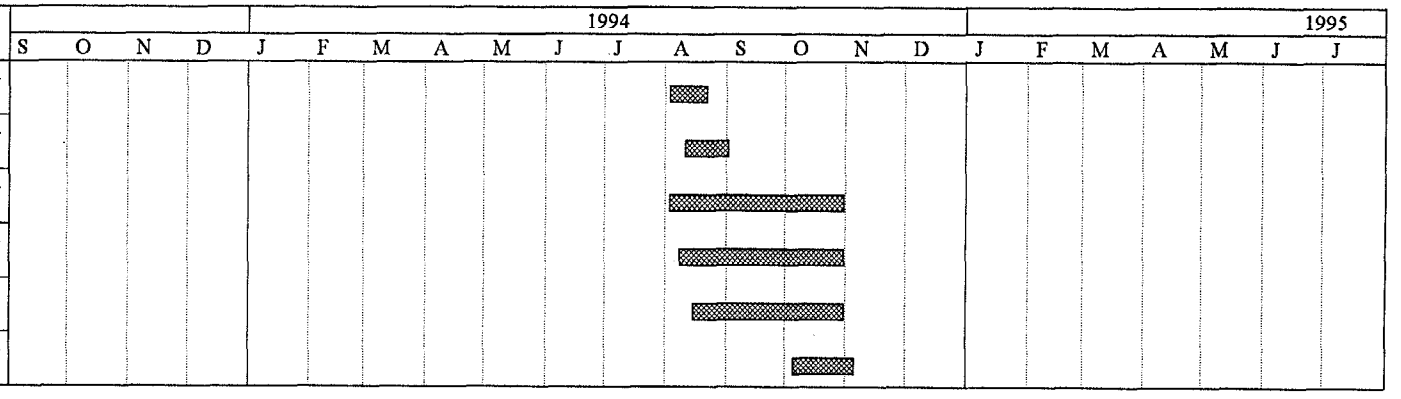


Figure B - 6

FY 1995: Removal Action at Site Screening Area 18
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREA 18	1032ed	6/1/92	3/30/95
EE/CA REPORT	**241ed**	**7/27/93**	**3/25/94**
Preliminary Draft	28ed	7/27/93	8/24/93
Review (Navy)	9ed	8/24/93	9/2/93
Draft	36ed	9/2/93	10/8/93
PUBLIC COMMENT PERIOD	**31ed**	**10/10/93**	**11/10/93**
Final	137ed	11/8/93	3/25/94
REMOVAL ACTION MEMORANDUM	**179ed**	**10/7/93**	**4/4/94**
Draft	61ed	10/7/93	12/7/93
Review (Navy/EPA/State)	87ed	12/7/93	3/4/94
Final	31ed	3/4/94	4/4/94
REMOVAL ACTION DESIGN	**452ed**	**6/1/92**	**8/27/93**
90% Design	183ed	6/1/92	12/1/92
Review (Navy)	209ed	12/1/92	6/28/93
Final Design	60ed	6/28/93	8/27/93
REMOVAL ACTION WORK PLAN	**411ed**	**9/30/93**	**11/15/94**
REMOVAL ACTION Tank Removal and Closeout	**135ed**	**11/15/94**	**3/30/95**

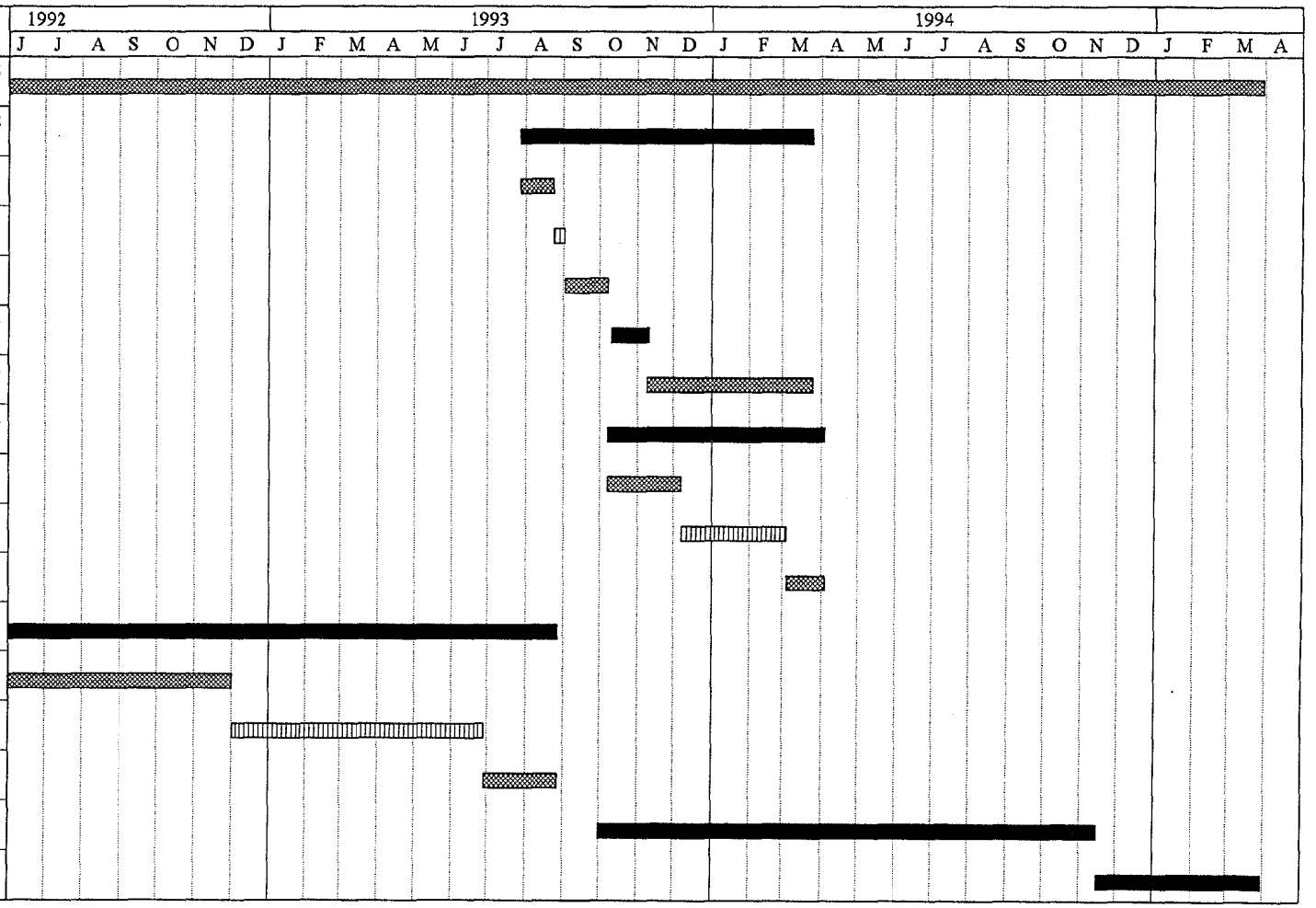


Figure B - 7

FY 1994: Removal Action at Site Screening Area 17
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREA 17	511ed	1/10/94	6/5/95
EE/CA REPORT	**106ed**	**1/10/94**	**4/26/94**
Preliminary Draft	25ed	1/10/94	2/4/94
Review (Navy)	17ed	2/4/94	2/21/94
Draft	30ed	2/21/94	3/23/94
PUBLIC COMMENT PERIOD	**30ed**	**3/20/94**	**4/19/94**
Final	7ed	4/19/94	4/26/94
REMOVAL ACTION MEMORANDUM	**44ed**	**4/26/94**	**6/9/94**
Draft	7ed	4/26/94	5/3/94
Review (Navy/EPA/State)	30ed	5/3/94	6/2/94
Final	7ed	6/2/94	6/9/94
REMOVAL ACTION DESIGN	**150ed**	**1/10/94**	**6/9/94**
90% Design	100ed	1/10/94	4/20/94
Review (Navy)	30ed	4/20/94	5/20/94
Final Design	20ed	5/20/94	6/9/94
REMOVAL ACTION	**301ed**	**8/8/94**	**6/5/95**

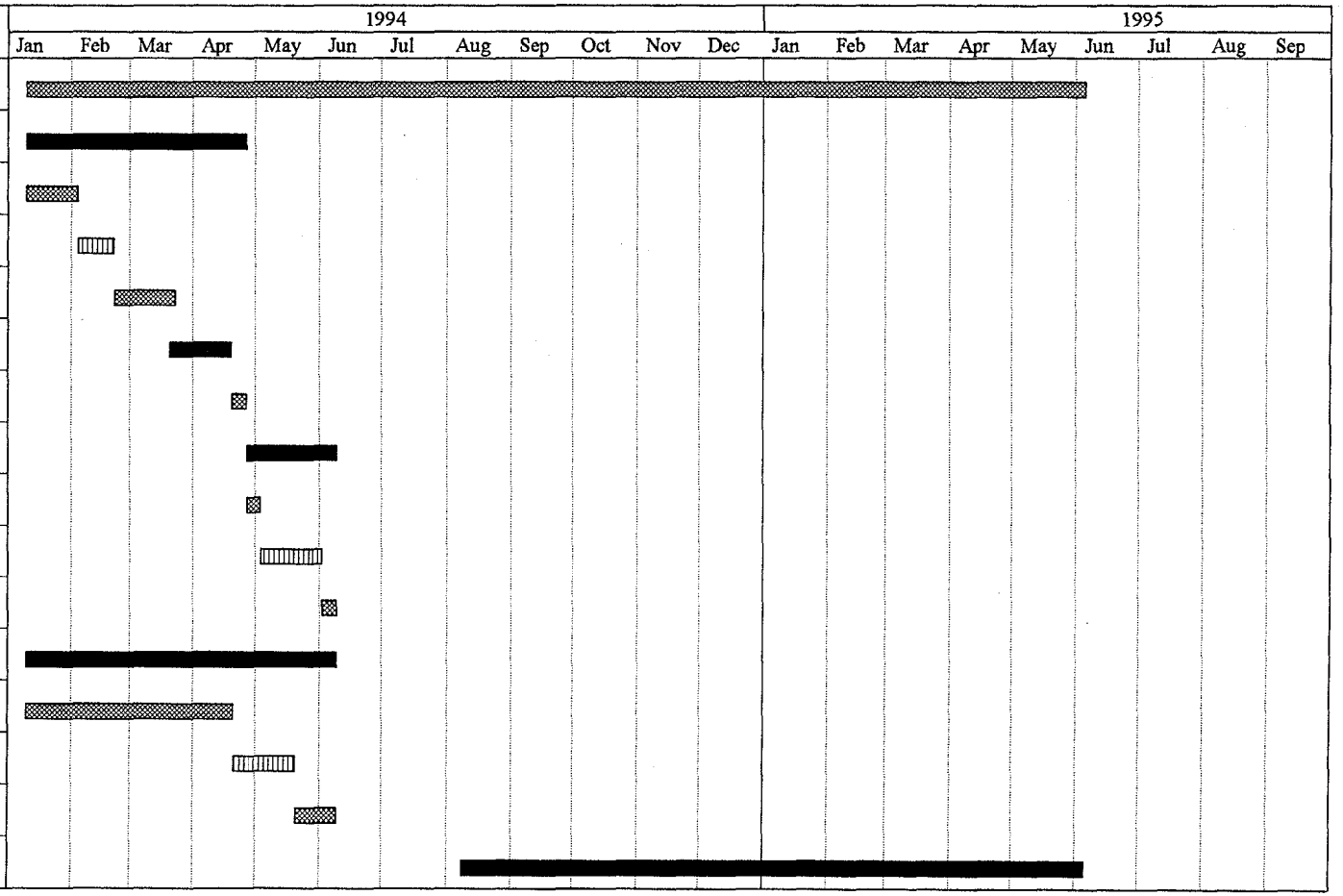
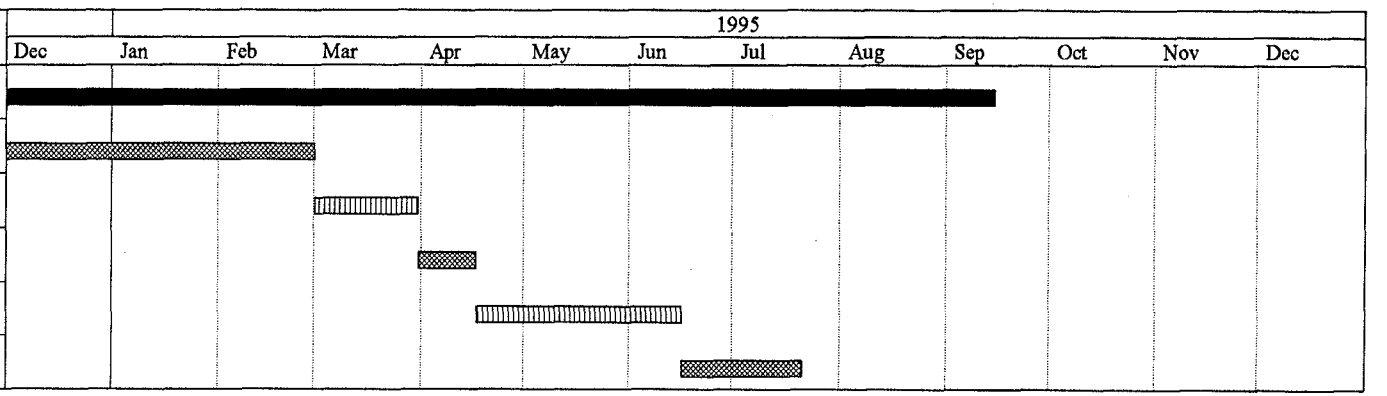


Figure B - 8

FY 1994: York River Basin Background Report
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
YORK RIVER BASIN BACKGROUND REPORT	**288ed**	**12/1/94**	**9/15/95**
Preliminary Draft	90ed	12/1/94	3/1/95
Review (Navy)	30ed	3/1/95	3/31/95
Draft	17ed	3/31/95	4/17/95
Review (EPA/State)	60ed	4/17/95	6/16/95
Final	35ed	6/16/95	7/21/95

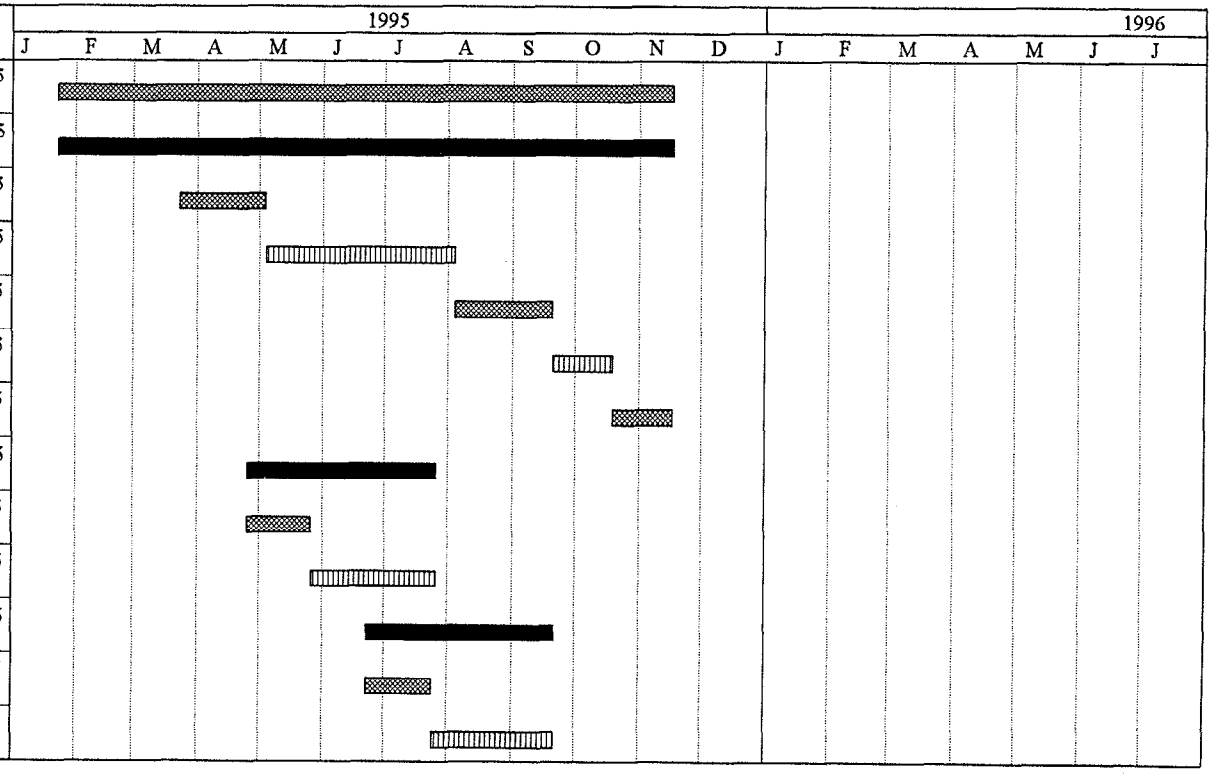


NOTE: The Draft Final Deliverable was not submitted due to limited Government comments.

Figure B - 9

FY 1995: Sites 4 and 21 Post-Removal Confirmation Sampling Report and Baseline Risk Assessment, Proposed Plan, and Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 4 and 21	298ed	1/23/95	11/17/95
POST-REMOVAL CONFIRMATION SAMPLING REPORT AND BASELINE RISK ASSESSMENT	**298ed**	**1/23/95**	**11/17/95**
Draft	42ed	3/23/95	5/4/95
Review (EPA/State)	92ed	5/4/95	8/4/95
Draft Final	47ed	8/4/95	9/20/95
Review (EPA/State)	29ed	9/20/95	10/19/95
Final	29ed	10/19/95	11/17/95
PROPOSED PLAN	**92ed**	**4/25/95**	**7/26/95**
Draft	31ed	4/25/95	5/26/95
Review (EPA/State)	61ed	5/26/95	7/26/95
RECORD OF DECISION	**91ed**	**6/22/95**	**9/21/95**
Draft	32ed	6/22/95	7/24/95
Review (EPA/State)	59ed	7/24/95	9/21/95

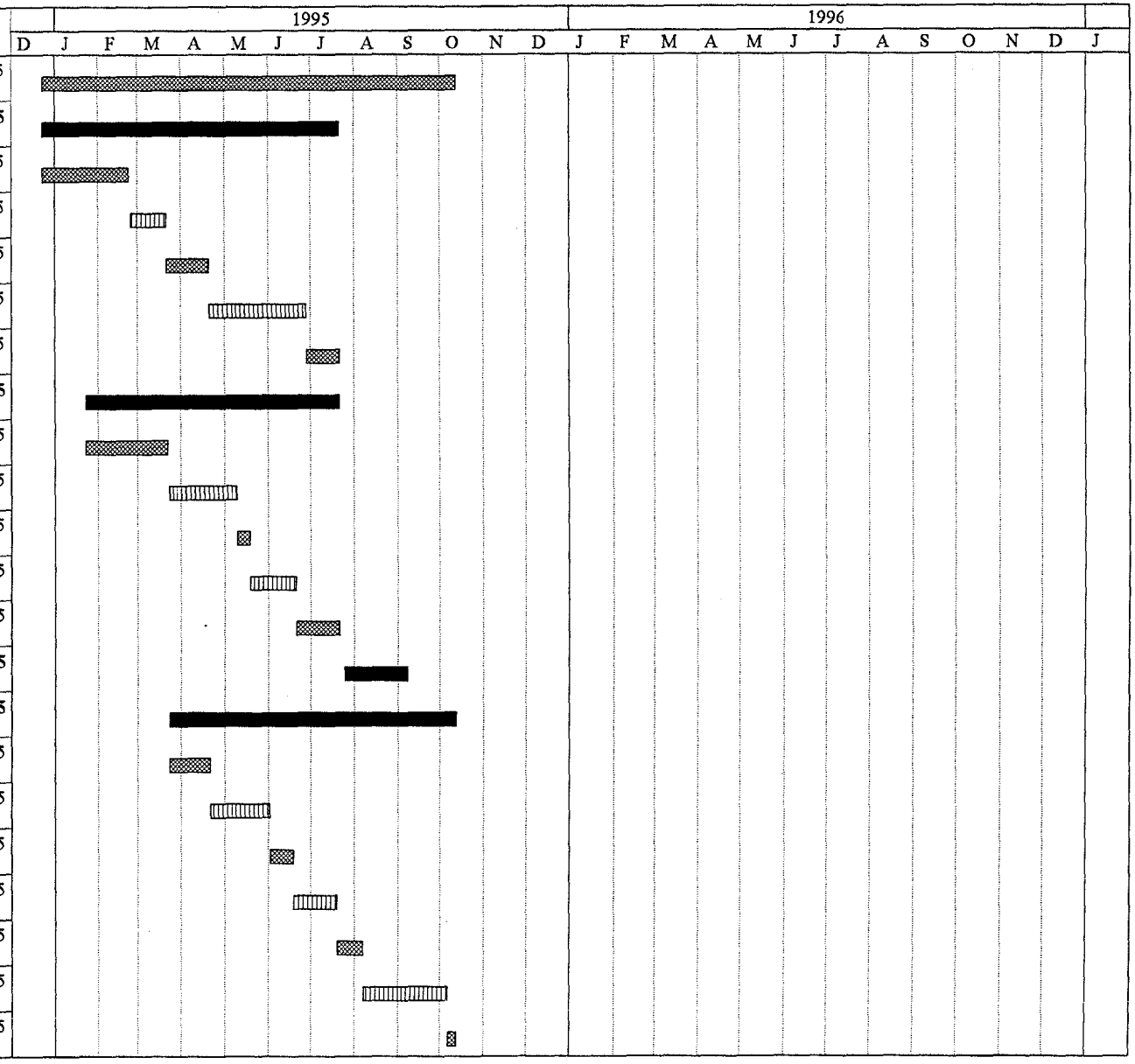


Note: The remaining deliverables for the Proposed Plan and Record of Decision were eliminated from the scope of work.

Figure B - 10

FY 1995: Site 16 and SSA 16 Remedial Investigation, Feasibility Study, Proposed Plan, and Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 16 and SSA 16	294ed	12/23/94	10/13/95
REMEDIAL INVESTIGATION REPORT	**210ed**	**12/23/94**	**7/21/95**
Preliminary Draft	62ed	12/23/94	2/23/95
Review (Navy)	25ed	2/24/95	3/21/95
Draft	30ed	3/21/95	4/20/95
Review (EPA/State)	69ed	4/20/95	6/28/95
Final	23ed	6/28/95	7/21/95
PROPOSED PLAN	**179ed**	**1/23/95**	**7/21/95**
Preliminary Draft	58ed	1/23/95	3/22/95
Review (Navy)	48ed	3/23/95	5/10/95
Draft	9ed	5/10/95	5/19/95
Review (EPA/State)	33ed	5/19/95	6/21/95
Final	30ed	6/21/95	7/21/95
PUBLIC COMMENT PERIOD	**45ed**	**7/25/95**	**9/8/95**
RECORD OF DECISION	**204ed**	**3/23/95**	**10/13/95**
Preliminary Draft	29ed	3/23/95	4/21/95
Review (Navy)	42ed	4/21/95	6/2/95
Draft	17ed	6/2/95	6/19/95
Review (EPA/State)	30ed	6/19/95	7/19/95
Draft Final	19ed	7/19/95	8/7/95
Review (EPA/State)	60ed	8/7/95	10/6/95
Final	7ed	10/6/95	10/13/95



NOTE: The Draft Final Deliverable was not submitted due to limited Government comments.

Figure B - 11

FY 1995: Sites 9 and 19 Work Plan/Field Investigation
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 9 and 19	369ed	12/1/94	12/5/95
RI WORK PLAN	**267ed**	**12/1/94**	**8/25/95**
Preliminary Draft	74ed	12/1/94	2/13/95
Review (Navy)	16ed	2/13/95	3/1/95
Draft	30ed	3/1/95	3/31/95
Review (EPA/State)	59ed	3/31/95	5/29/95
Draft Final	30ed	5/29/95	6/28/95
Review (EPA/State)	30ed	6/28/95	7/28/95
Final	28ed	7/28/95	8/25/95
RI FIELD INVESTIGATION	**60ed**	**8/21/95**	**10/20/95**
Mobilization	4ed	8/21/95	8/25/95
Field Investigation	56ed	8/25/95	10/20/95
SAMPLE ANALYSIS/VALIDATION	**89ed**	**9/7/95**	**12/5/95**
Sample Analysis	74ed	9/7/95	11/20/95
Data Validation	60ed	10/6/95	12/5/95

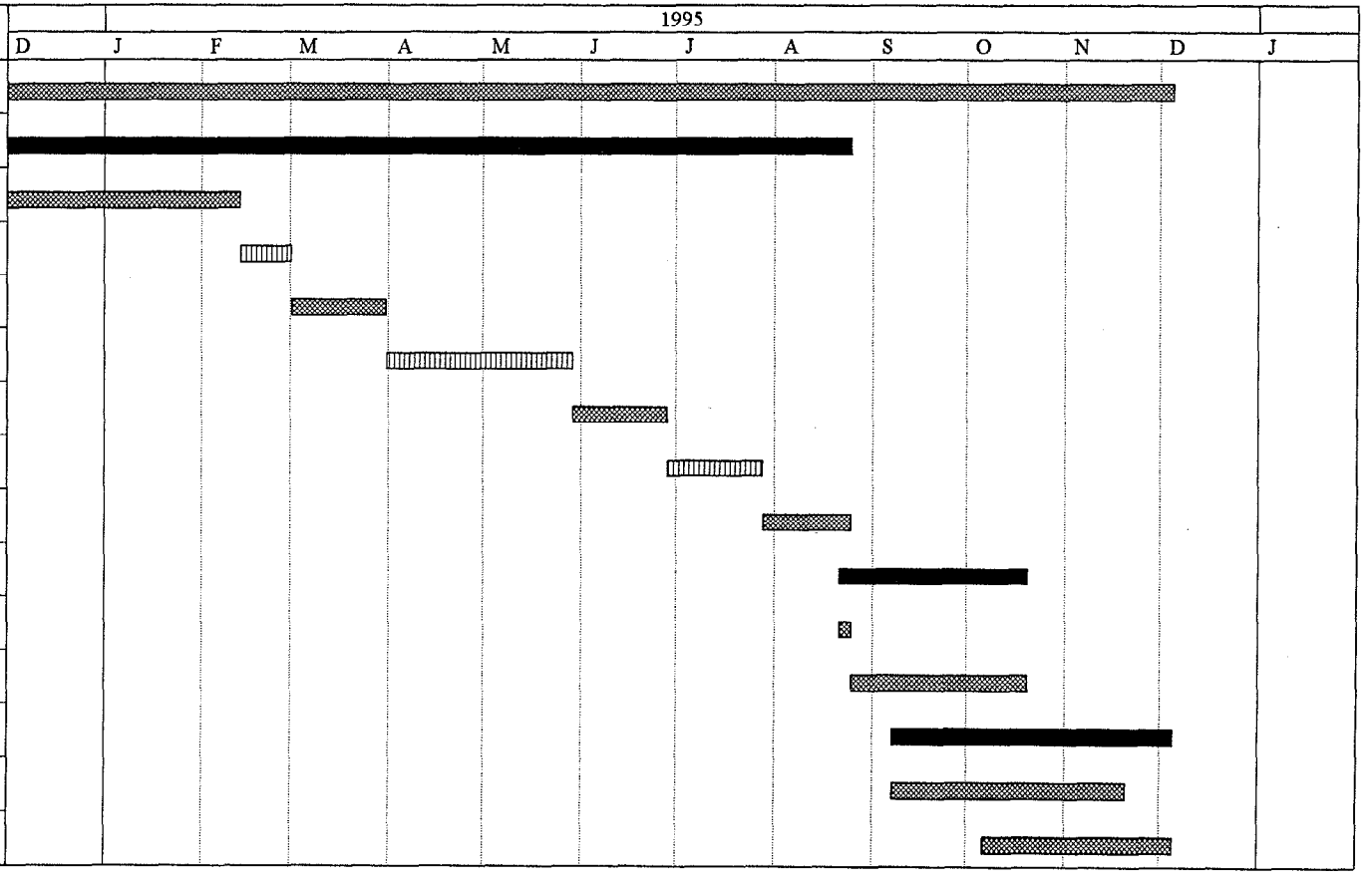


Figure B - 12

FY 1994: Site Screening Areas 1, 6, 7, and 15 Work Plan/Field Investigation/SSP Report

Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREAS 1, 6, 7, and 15	811ed	1/10/94	3/31/96
SSA WORK PLAN	**316ed**	**1/10/94**	**11/22/94**
Preliminary Draft	84ed	1/10/94	4/4/94
Review (Navy)	30ed	4/4/94	5/4/94
Draft	30ed	5/4/94	6/3/94
Review (EPA/State)	60ed	6/3/94	8/2/94
Draft Final	69ed	8/2/94	10/10/94
Review (EPA/State)	30ed	10/10/94	11/9/94
Final	13ed	11/9/94	11/22/94
SSA FIELD INVESTIGATION	**46ed**	**10/31/94**	**12/16/94**
Mobilization	7ed	10/24/94	10/31/94
Field Investigation	46ed	10/31/94	12/16/94
SAMPLE ANALYSIS/VALIDATION	**45ed**	**10/31/94**	**12/15/94**
Sample Analysis	44ed	10/31/94	12/14/94
Data Validation	60ed	12/18/94	2/16/95
SSP REPORT	**440ed**	**1/16/95**	**3/31/96**
Preliminary Draft	58ed	1/16/95	3/15/95
Review (Navy)	30ed	3/15/95	4/14/95
Draft	77ed	4/14/95	6/30/95
Review (EPA/State)	94ed	6/30/95	10/2/95
Draft Final	37ed	10/2/95	11/8/95
Review (EPA/State)	84ed	11/8/95	1/31/96
Final	47ed	1/31/96	3/18/96

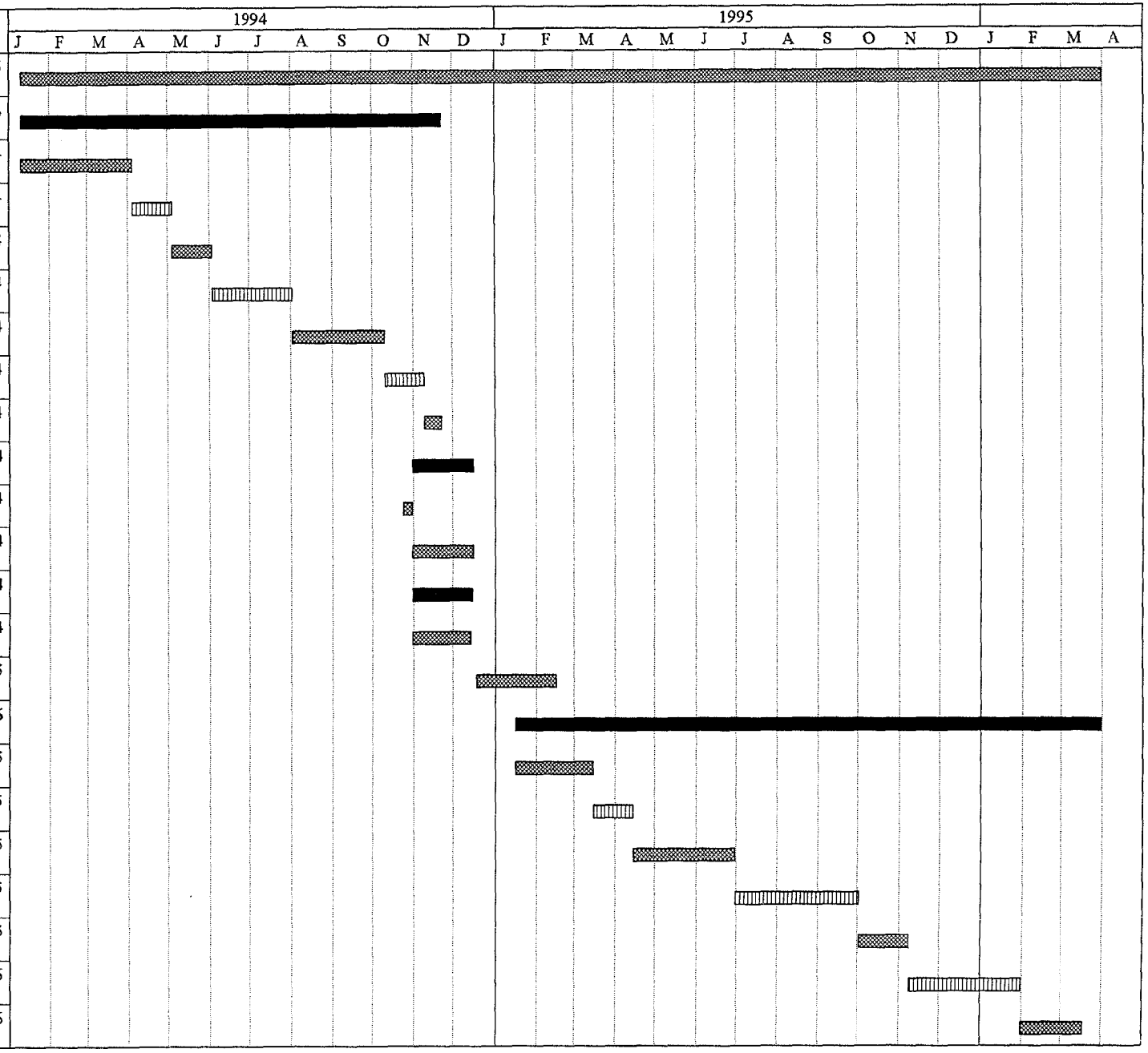
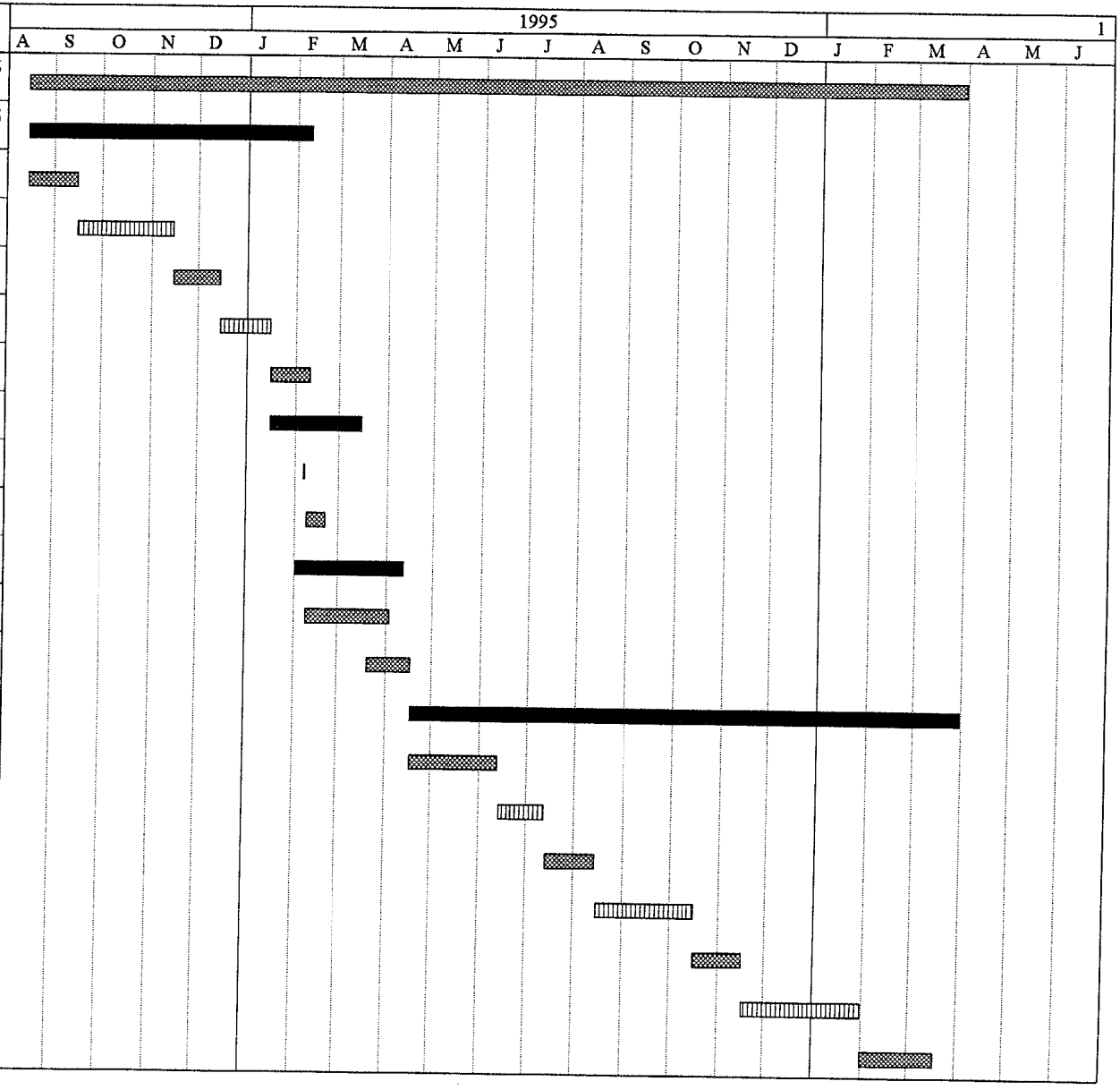


Figure B - 13

FY 1995: Site Screening Areas 2, 17, 18 and 19 Work Plan/Field Investigation/SSP Report
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREAS 2, 17, 18 and 19	594ed	8/15/94	3/31/96
SSP WORK PLAN	**179ed**	**8/15/94**	**2/10/95**
Draft	31ed	8/15/94	9/15/94
Review (Navy)	61ed	9/15/94	11/15/94
Draft Final	30ed	11/15/94	12/15/94
Review (EPA/State)	31ed	12/15/94	1/15/95
Final	26ed	1/15/95	2/10/95
SSP FIELD INVESTIGATION	**59ed**	**1/15/95**	**3/15/95**
Mobilization	1ed	2/6/95	2/7/95
Field Investigation	12ed	2/8/95	2/20/95
SAMPLE ANALYSIS/VALIDATION	**70ed**	**2/1/95**	**4/12/95**
Sample Analysis	54ed	2/8/95	4/3/95
Data Validation	28ed	3/20/95	4/17/95
SSP REPORT	**349ed**	**4/17/95**	**3/31/96**
Preliminary Draft	56ed	4/17/95	6/12/95
Review (Navy)	29ed	6/13/95	7/12/95
Draft	32ed	7/13/95	8/14/95
Review (EPA/State)	62ed	8/15/95	10/16/95
Draft Final	31ed	10/16/95	11/16/95
Review (EPA/State)	76ed	11/16/95	1/31/96
Final	47ed	1/31/96	3/18/96

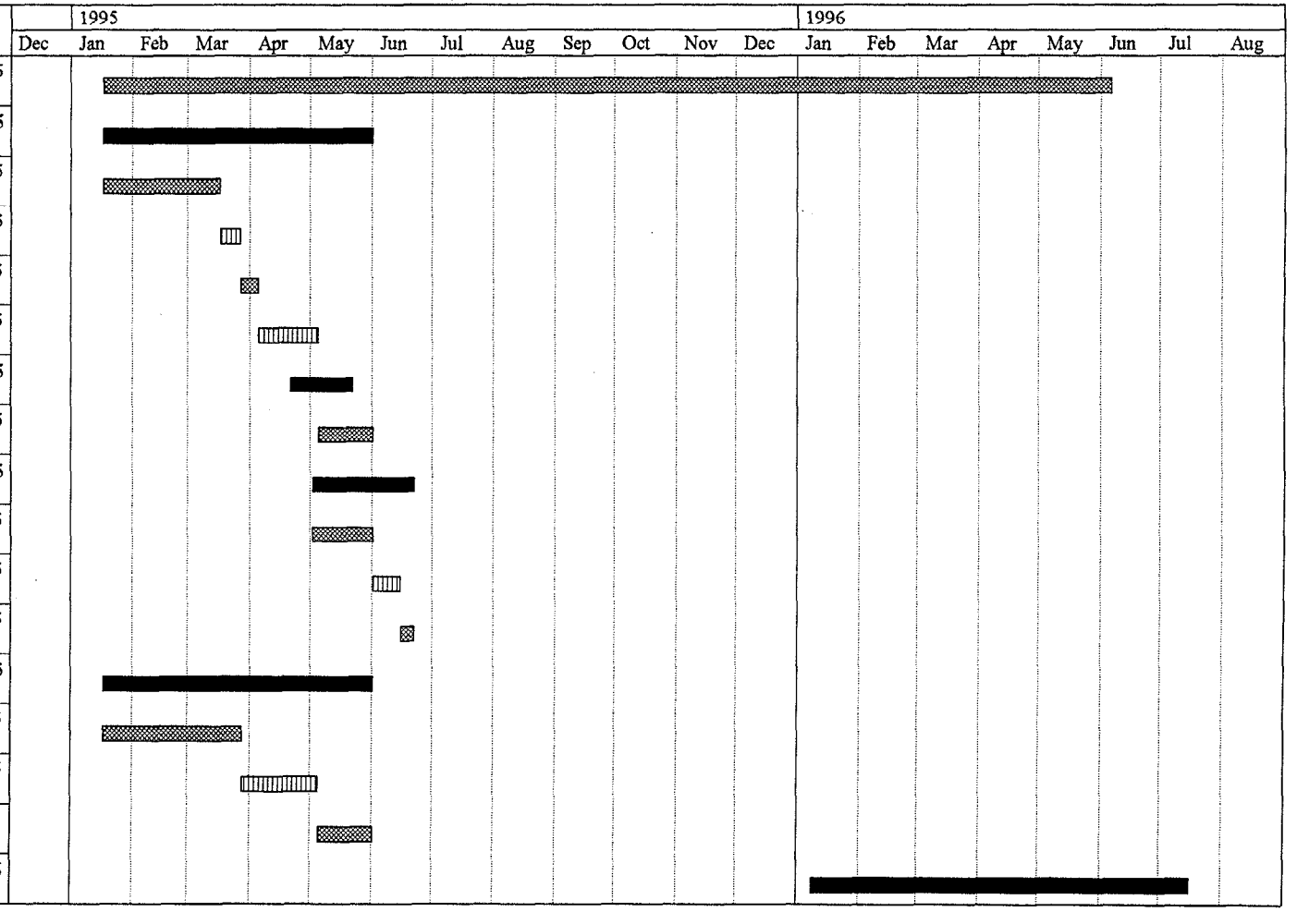


Note: Work Plan Production was funded in FY 1994.

Figure B-14

FY 1996: Removal Action at Site Screening Areas 3 and 7
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREAS 3 and 7	506ed	1/17/95	6/6/96
EE/CA REPORT	**135ed**	**1/17/95**	**6/1/95**
Draft (LANTDIV only)	59ed	1/17/95	3/17/95
Navy Review	10ed	3/17/95	3/27/95
Draft	9ed	3/27/95	4/5/95
Review (EPA/State/Navy)	30ed	4/5/95	5/5/95
PUBLIC COMMENT PERIOD	**31ed**	**4/21/95**	**5/22/95**
Final	27ed	5/5/95	6/1/95
REMOVAL ACTION MEMORANDUM	**51ed**	**5/2/95**	**6/22/95**
Draft	30ed	5/2/95	6/1/95
Review (Navy/EPA/State)	14ed	6/1/95	6/15/95
Final	7ed	6/15/95	6/22/95
REMOVAL ACTION DESIGN	**135ed**	**1/17/95**	**6/1/95**
100% Design	70ed	1/17/95	3/28/95
Review (Navy/EPA/State)	38ed	3/28/95	5/5/95
Final Design	27ed	5/5/95	6/1/95
REMOVAL ACTION	**190ed**	**1/8/96**	**7/16/96**



Note: A draft copy of the EE/CA was submitted to LANTDIV for comments prior to submitting a draft copy to USEPA.

Figure B - 15

FY 1995: Site 12 Remedial Investigation/Feasibility Study/Proposed Plan/Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
Site 12	650ed	3/31/95	1/9/97
REMEDIAL INVESTIGATION REPORT	**454ed**	**3/31/95**	**6/27/96**
Preliminary Draft	61ed	3/31/95	5/31/95
Review (Navy)	30ed	5/31/95	6/30/95
Draft	70ed	6/30/95	9/8/95
Review (EPA/State)	60ed	9/8/95	11/7/95
Draft Final	156ed	11/7/95	4/11/96
Review (EPA/State)	62ed	4/11/96	6/12/96
Final	15ed	6/12/96	6/27/96
FEASIBILITY STUDY	**426ed**	**4/28/95**	**6/27/96**
Preliminary Draft	77ed	4/28/95	7/14/95
Review (Navy)	31ed	7/14/95	8/14/95
Draft	38ed	8/14/95	9/21/95
Review (EPA/State)	60ed	9/21/95	11/20/95
Draft Final	151ed	11/20/95	4/19/96
Review (EPA/State)	54ed	4/19/96	6/12/96
Final	15ed	6/12/96	6/27/96
PROPOSED PLAN	**427ed**	**4/28/95**	**6/28/96**
Preliminary Draft	84ed	4/28/95	7/21/95
Review (Navy)	62ed	7/21/95	9/21/95
Draft	29ed	9/21/95	10/20/95
Review (EPA/State)	61ed	10/20/95	12/20/95

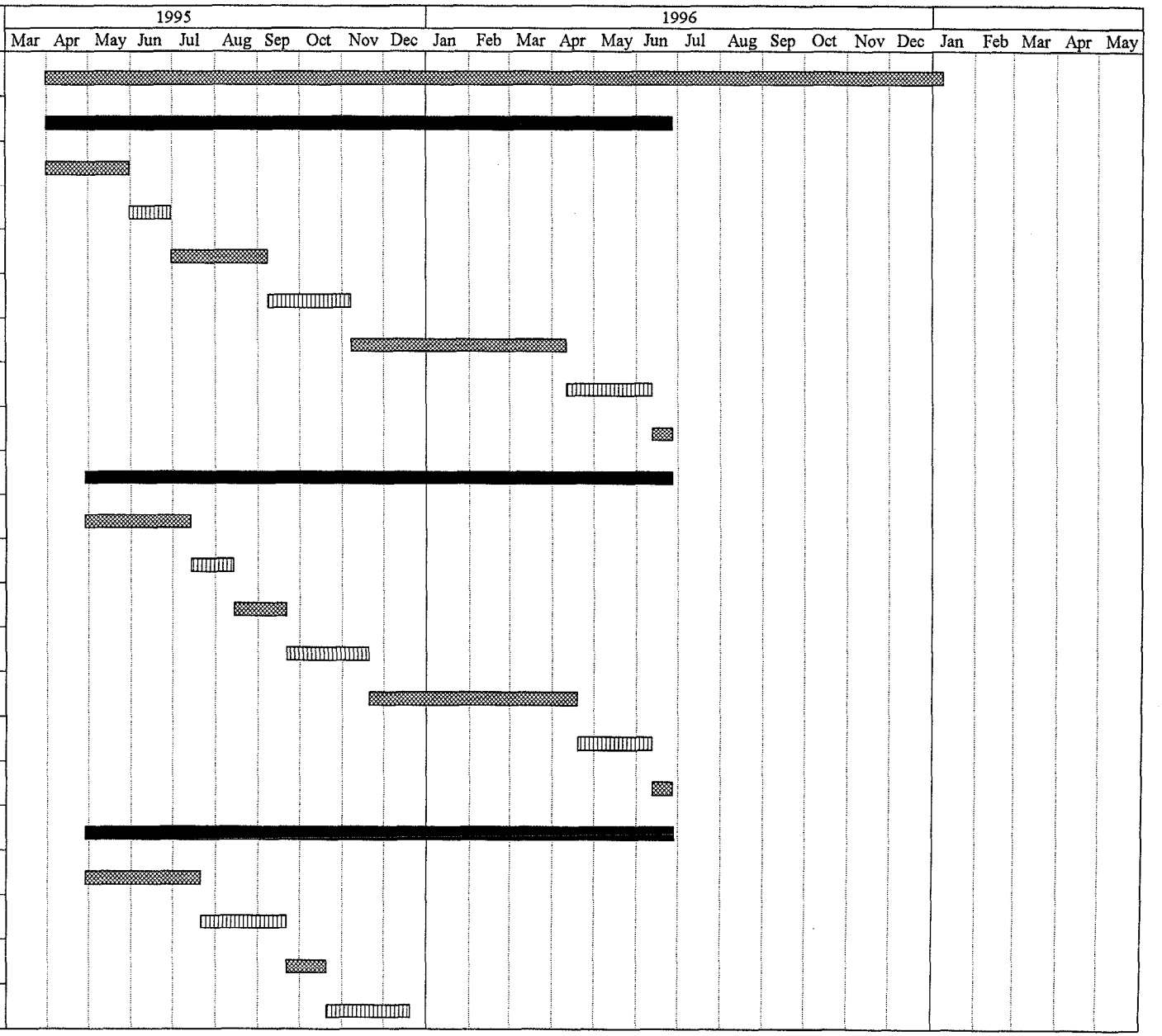


Figure B - 15

FY 1995: Site 12 Remedial Investigation/Feasibility Study/Proposed Plan/Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
Draft Final	60ed	2/26/96	4/26/96
Review (EPA/State)	45ed	4/26/96	6/10/96
Final	18ed	6/10/96	6/28/96
PUBLIC COMMENT PERIOD	**44ed**	**7/1/96**	**8/14/96**
RECORD OF DECISION	**529ed**	**7/30/95**	**1/9/97**
Preliminary Draft	62ed	7/30/95	9/30/95
Review (Navy)	29ed	9/30/95	10/29/95
Draft	187ed	10/29/95	5/3/96
Review (EPA/State)	52ed	5/3/96	6/24/96
Draft Final	11ed	6/24/96	7/5/96
Review (EPA/State)	31ed	7/5/96	8/5/96
Interim Draft Final	1ed	8/5/96	8/6/96
Review (EPA/State)	23ed	8/6/96	8/29/96
Final	14ed	8/29/96	9/12/96
Review (EPA/State)	21ed	9/12/96	10/3/96
Revised Final	21ed	10/3/96	10/24/96
Review (EPA/State)	47ed	10/24/96	12/10/96
Updated Revised Final	31ed	12/10/96	1/10/97
Revised (EPA/State)	41ed	1/10/97	2/20/97
Amended Updated Revised Final	85ed	2/20/97	5/16/97

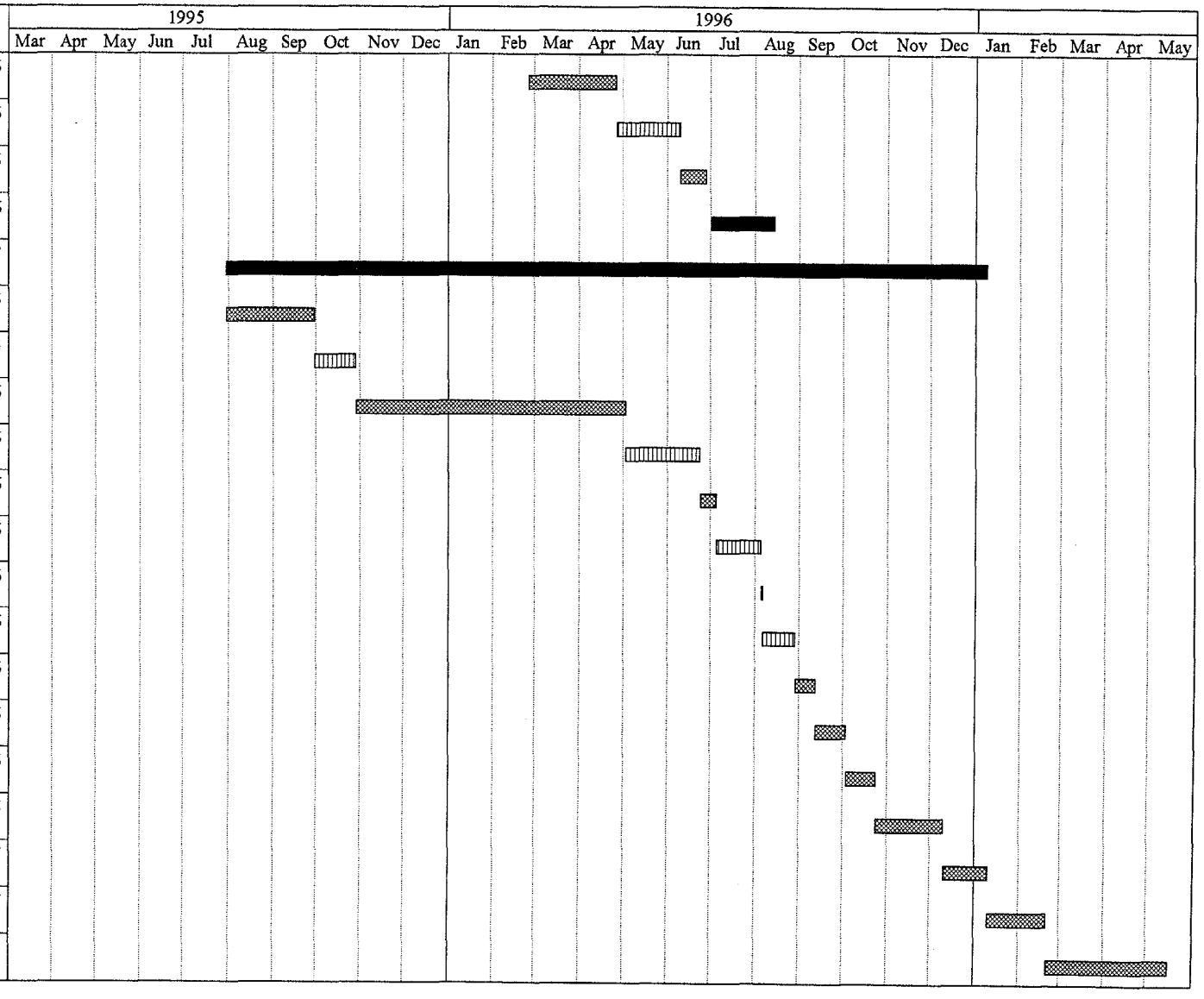
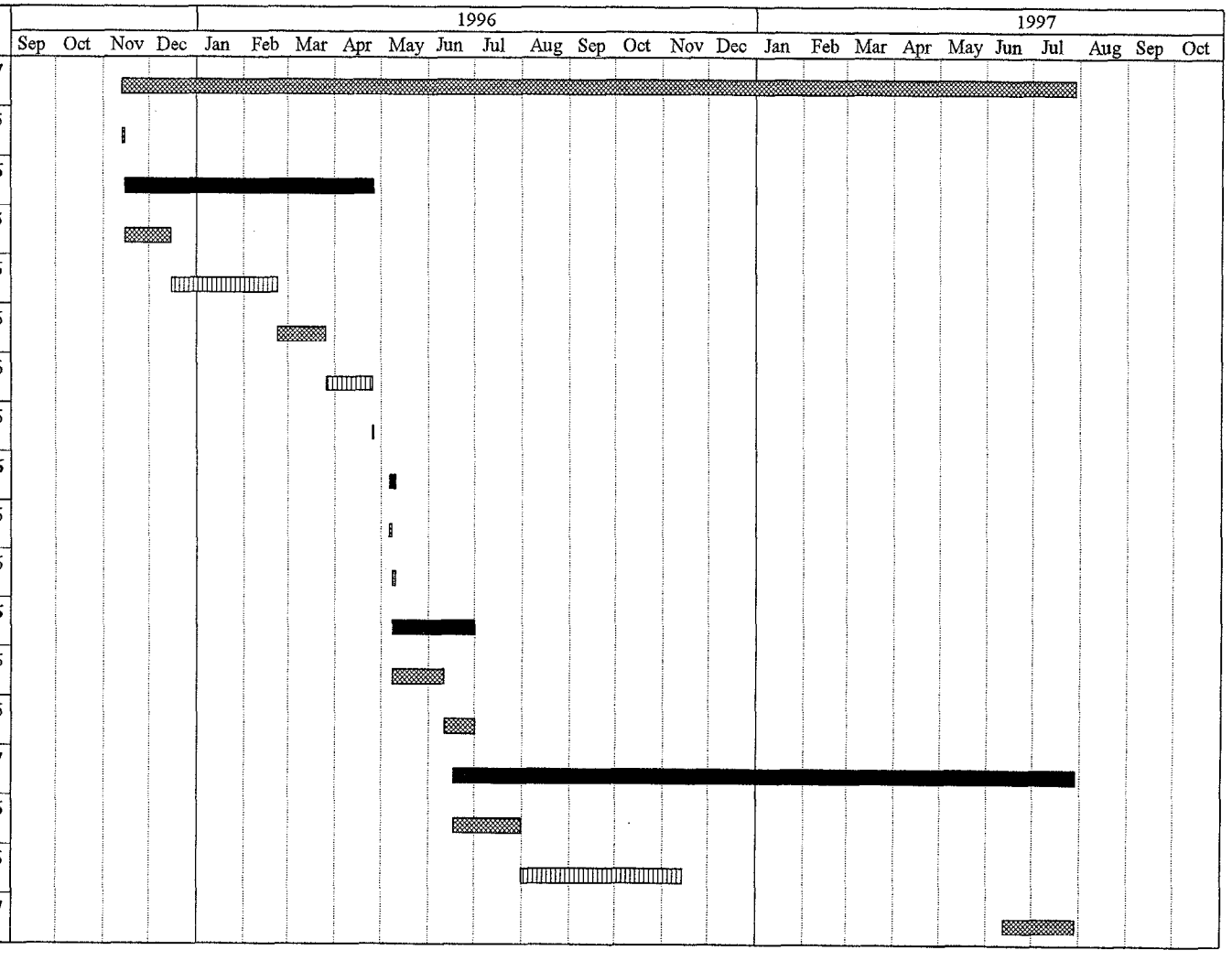


Figure B - 16

FY 1996: CTO-320, Site Screening Areas 8, 11, 12, and 13, Work Plan/SSP Report
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREAS 8, 11, 12, and 13	624ed	11/13/95	7/29/97
Site Visit	2ed	11/13/95	11/15/95
SSA WORK PLAN	**163ed**	**11/15/95**	**4/26/96**
Draft	30ed	11/15/95	12/15/95
Review (EPA/State)	70ed	12/15/95	2/23/96
Draft Final	32ed	2/23/96	3/26/96
Review (EPA/State)	30ed	3/26/96	4/25/96
Final	1ed	4/25/96	4/26/96
SSP FIELD INVESTIGATION	**4ed**	**5/6/96**	**5/10/96**
Mobilization	2ed	5/6/96	5/8/96
Field Investigation	2ed	5/8/96	5/10/96
SAMPLE ANALYSIS/VALIDATION	**54ed**	**5/8/96**	**7/1/96**
Sample Analysis	34ed	5/8/96	6/11/96
Data Validation	20ed	6/11/96	7/1/96
SITE SCREENING PROCESS REPORT	**407ed**	**6/17/96**	**7/29/97**
Draft	44ed	6/17/96	7/31/96
Review (EPA/State)	106ed	7/31/96	11/14/96
Final **	47ed	6/12/97	7/29/97



** Review and Comments of documents covered under Partnering

APPENDIX C
DETAILED SCHEDULES FOR REMOVAL ACTIONS
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

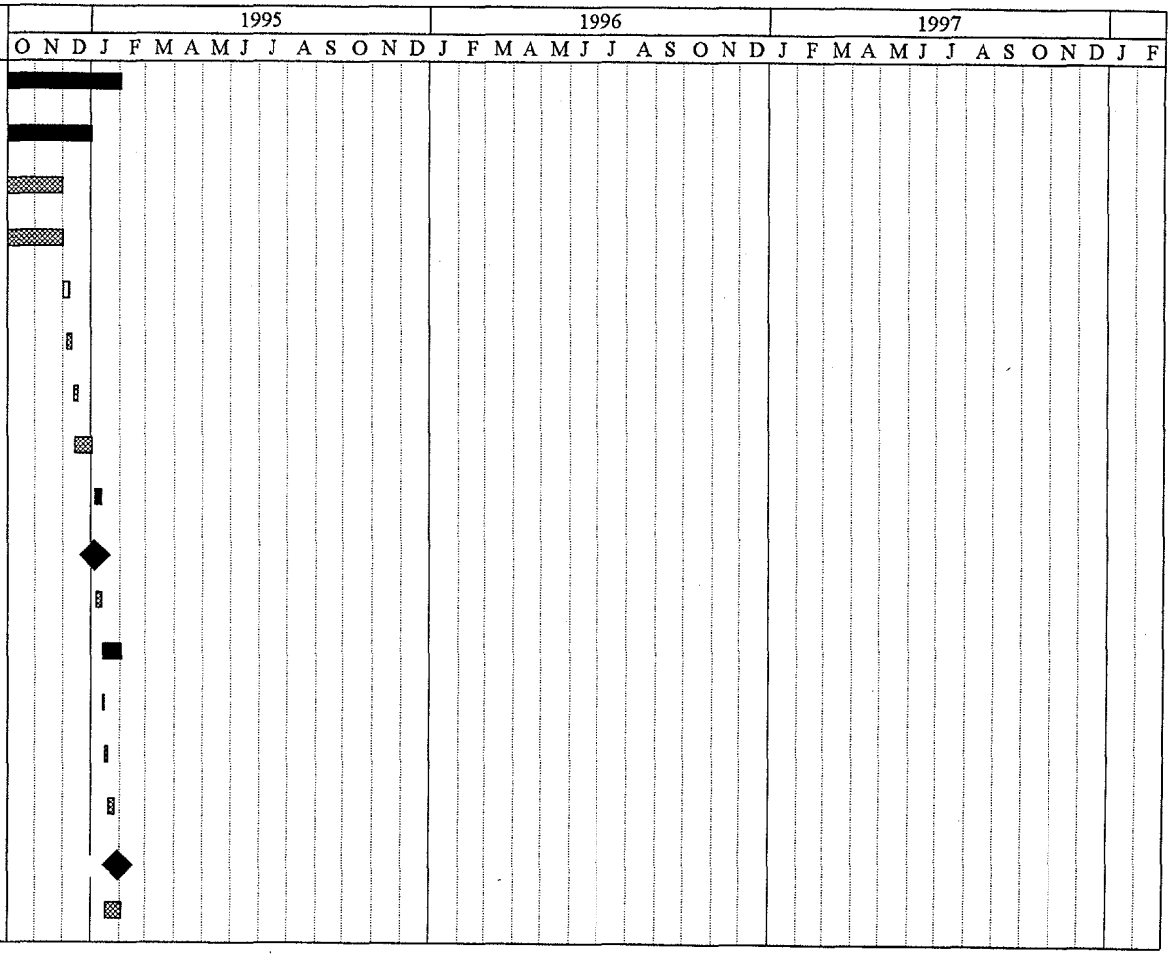
There are no Removal Actions currently scheduled.

APPENDIX D
DETAILED SCHEDULES: FY 1995
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Figure D - 1

FY 1995: CTO- 209 Bench-Scale Treatability Study
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Description	Days	Start	Finish
PHASE I	**SOIL CHARACTERIZATION/COLLECTION**	**125ed**	**10/1/94**	**2/3/95**
Task 1	**Soil Characterization**	**93ed**	**10/1/94**	**1/2/95**
	Project Scope Development	61ed	10/1/94	12/1/94
	Soil Characterization Work Plan	61ed	10/1/94	12/1/94
	Navy Review	7ed	12/1/94	12/8/94
	Field Preparation/Mobilization	5ed	12/5/94	12/10/94
	Field Investigation	5ed	12/12/94	12/17/94
	Laboratory Analysis	20ed	12/13/94	1/2/95
Task 2	**Soil Characterization Evaluation**	**7ed**	**1/5/95**	**1/12/95**
	Meeting @LANTDIV	0ed	1/5/95	1/5/95
	Meeting Summary	6ed	1/6/95	1/12/95
Task 3	**Soil Sample Collection**	**21ed**	**1/13/95**	**2/3/95**
	Field Preparation	2ed	1/13/95	1/15/95
	Soil Collection	3ed	1/16/95	1/19/95
	Laboratory Analysis	7ed	1/19/95	1/26/95
	W.E.S Collection	0.67d	1/30/95	1/30/95
	Documentation/Reporting	18ed	1/16/95	2/3/95

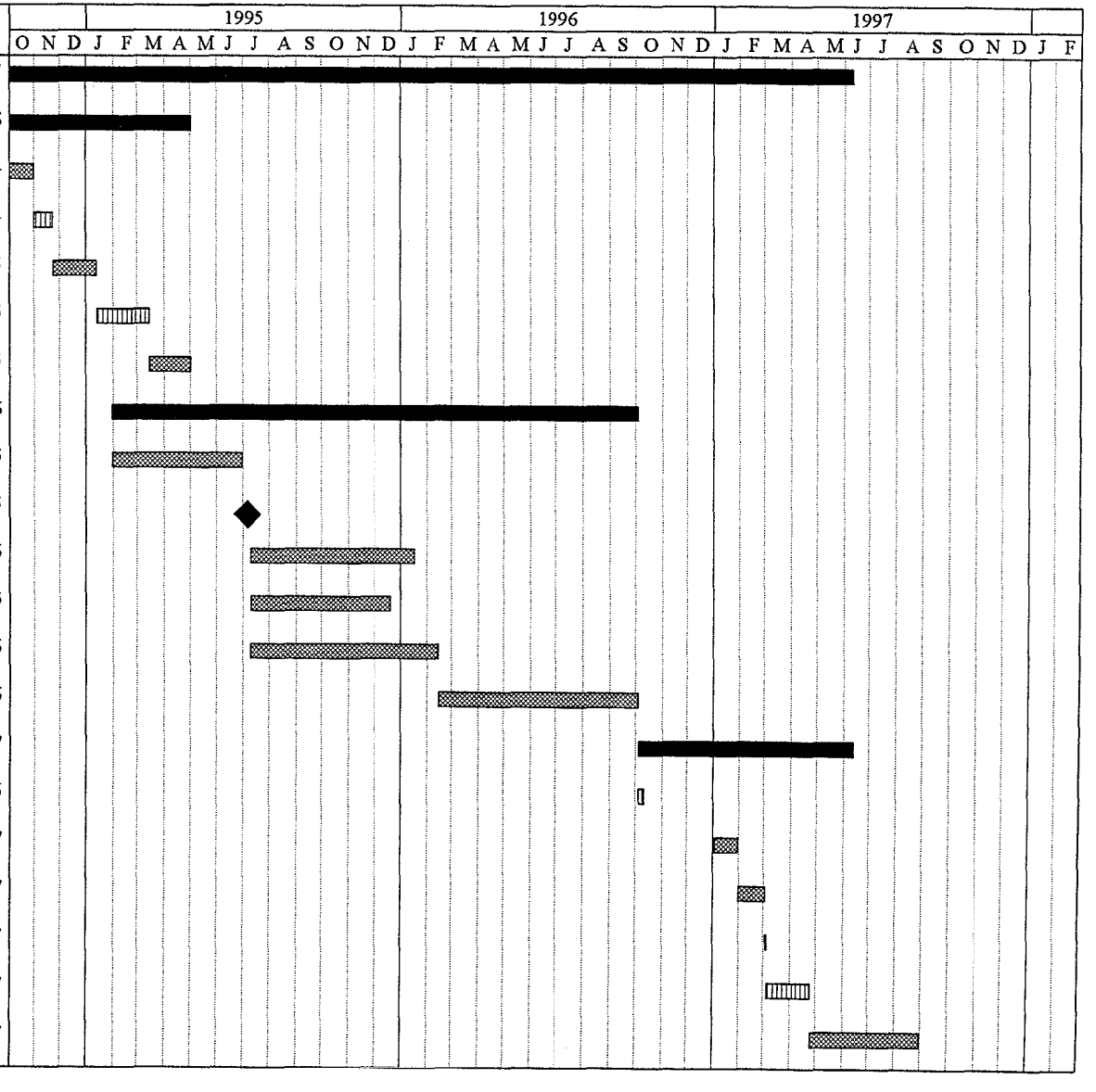


* Deliverable due date will be modified pending peer review of the Army Corps of Engineers Report on the Treatability Study.

Figure D - 1

FY 1995: CTO- 209 Bench-Scale Treatability Study
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Description	Days	Start	Finish
PHASE II	**BENCH-SCALE TREATABILITY STUDIES**	**985ed**	**10/1/94**	**6/12/97**
Task 4	**Treatability Study Work Plan**	**213ed**	**10/1/94**	**5/2/95**
	Preliminary Draft Work Plan (WES)	31ed	10/1/94	11/1/94
	Navy/Baker Review	22ed	11/1/94	11/23/94
	Draft Work Plan (WES)	51ed	11/23/94	1/13/95
	EPA/State Review	61ed	1/13/95	3/15/95
	Final Work Plan (WES/Baker)	48ed	3/15/95	5/2/95
Task 5	**Bench-Scale Treatability Study**	**613ed**	**1/30/95**	**10/4/96**
	Phase I to III	151ed	1/30/95	6/30/95
	Meeting @ WES	0ed	7/7/95	7/7/95
	Phase IV (Bioslurry)	191ed	7/10/95	1/17/96
	Phase V (Biocell)	163ed	7/10/95	12/20/95
	Phase VI (Slurox)	220ed	7/10/95	2/15/96
	Phase VII (Reporting)	232ed	2/15/96	10/4/96
Task 6	**Treatability Study Report (T.S.)**	**251ed**	**10/4/96**	**6/12/97**
	Review WES TS	7ed	10/4/96	10/11/96
	Preliminary Draft T.S. (Baker)	29ed	1/2/97	1/31/97
	LANTDIV Review	31ed	1/31/97	3/3/97
	Draft T.S. (WES/Baker)	2ed	3/3/97	3/5/97
	EPA/State Review	51ed	3/5/97	4/25/97
	Final T.S. Report (Baker) *	128ed	4/25/97	8/31/97



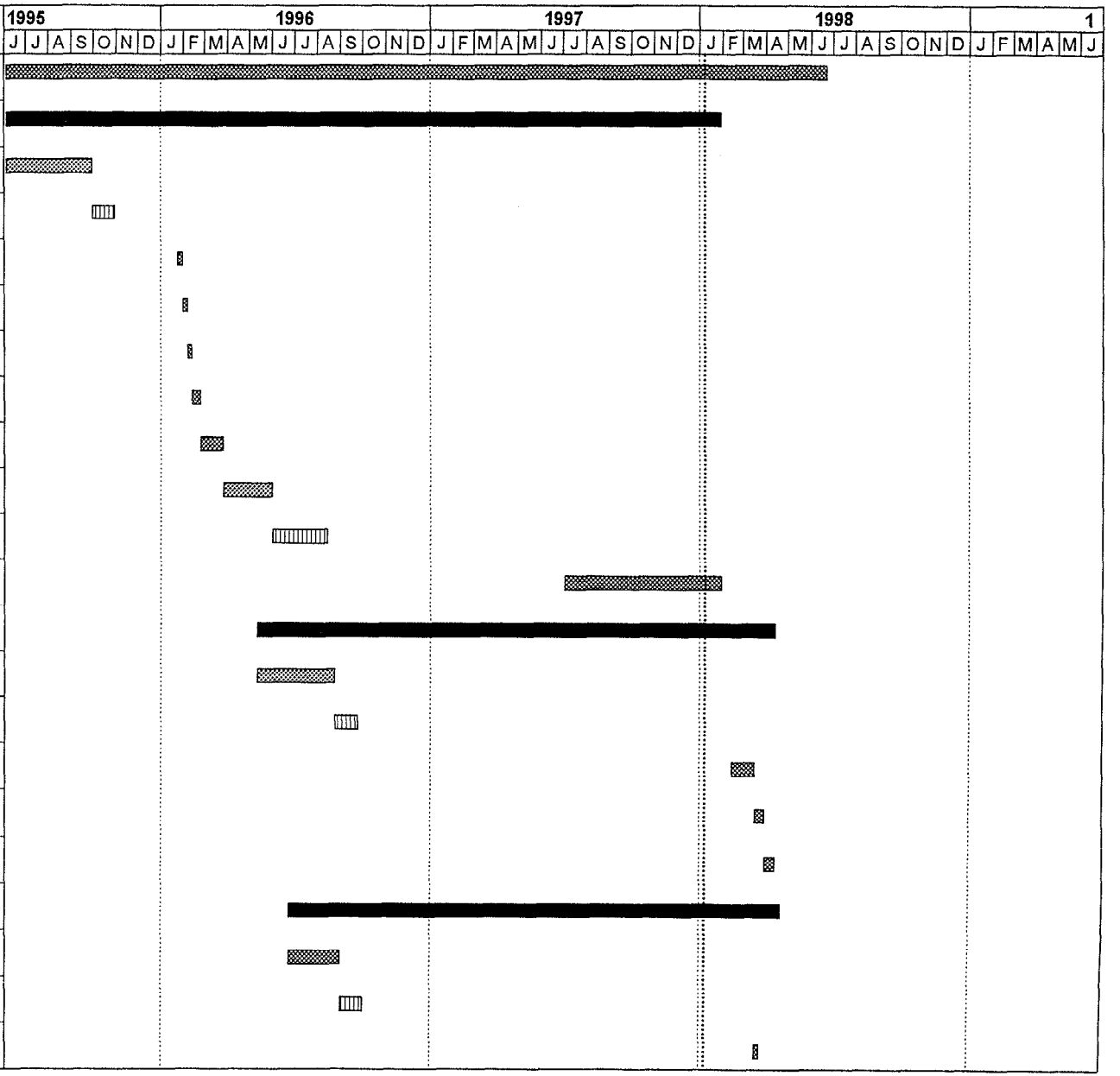
* Deliverable due date will be modified pending peer review of the Army Corps of Engineers Report on the Treatability Study.

Figure D - 2

FY 1995: CTO-319, Sites 6 and 7 Remedial Investigation/Feasiblity Study/Proposed Plan/Record of Decision

Naval Weapons Station Yorktown, Yorktown, Virginia

Task Name	Days	Start	Finish
Sites 6 and 7	1113ed	6/5/95	6/22/98
REMEDIAL INVESTIGATION REPORT	970ed	6/5/95	1/30/98
Preliminary Draft	116ed	6/5/95	9/29/95
Review (Navy)	31ed	9/29/95	10/30/95
Draft Work Plan Letter Addendum	7ed	1/23/96	1/30/96
Review	7ed	1/30/96	2/6/96
Final Work Plan Letter Addendum	6ed	2/6/96	2/12/96
Additional Field Investigation	12ed	2/12/96	2/24/96
Data Analysis and Validation	30ed	2/24/96	3/25/96
Draft	67ed	3/25/96	5/31/96
Review (EPA/State)	74ed	5/31/96	8/13/96
Final	213ed	7/1/97	1/30/98
FEASIBILITY STUDY	703ed	5/10/96	4/13/98
Preliminary Draft	105ed	5/10/96	8/23/96
Review (Navy)	31ed	8/23/96	9/23/96
Interim Final	31ed	2/13/98	3/16/98
Review (EPA/State)	14ed	3/16/98	3/30/98
Final **	14ed	3/30/98	4/13/98
PROPOSED PLAN	668ed	6/21/96	4/20/98
Preliminary Draft	70ed	6/21/96	8/30/96
Review (Navy)	31ed	8/30/96	9/30/96
Interim Final	7ed	3/16/98	3/23/98



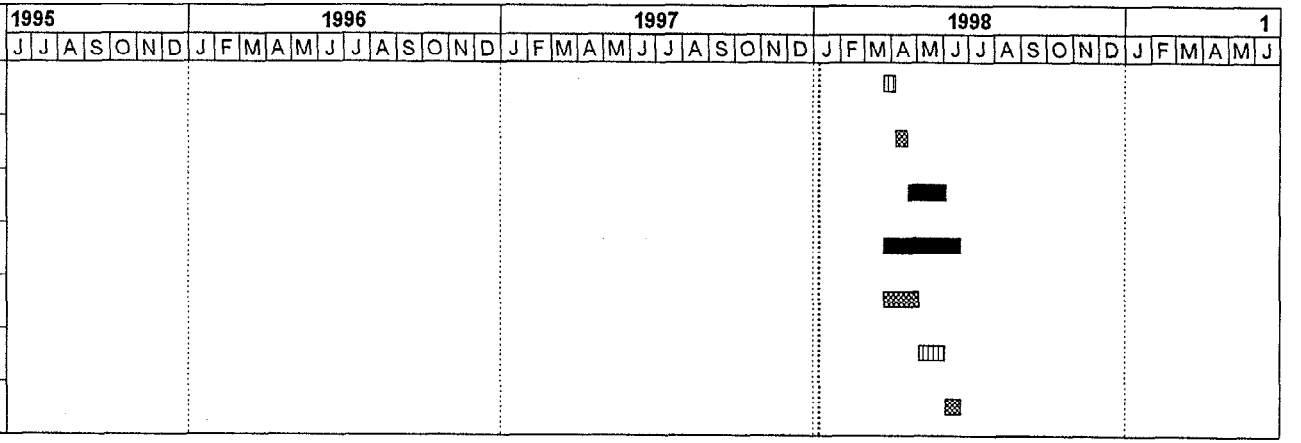
NOTE: Public Comment Period will close prior to finalization of the Record of Decision.

Figure D - 2

FY 1995: CTO-319, Sites 6 and 7 Remedial Investigation/Feasiblity Study/Proposed Plan/Record of Decision

Naval Weapons Station Yorktown, Yorktown, Virginia

Task Name	Days	Start	Finish
Review (EPA/State)	14ed	3/23/98	4/6/98
Final **	14ed	4/6/98	4/20/98
PUBLIC COMMENT PERIOD	45ed	4/21/98	6/5/98
RECORD OF DECISION	91ed	3/23/98	6/22/98
Draft	42ed	3/23/98	5/4/98
Review (EPA/State)	30ed	5/4/98	6/3/98
Final	19ed	6/3/98	6/22/98

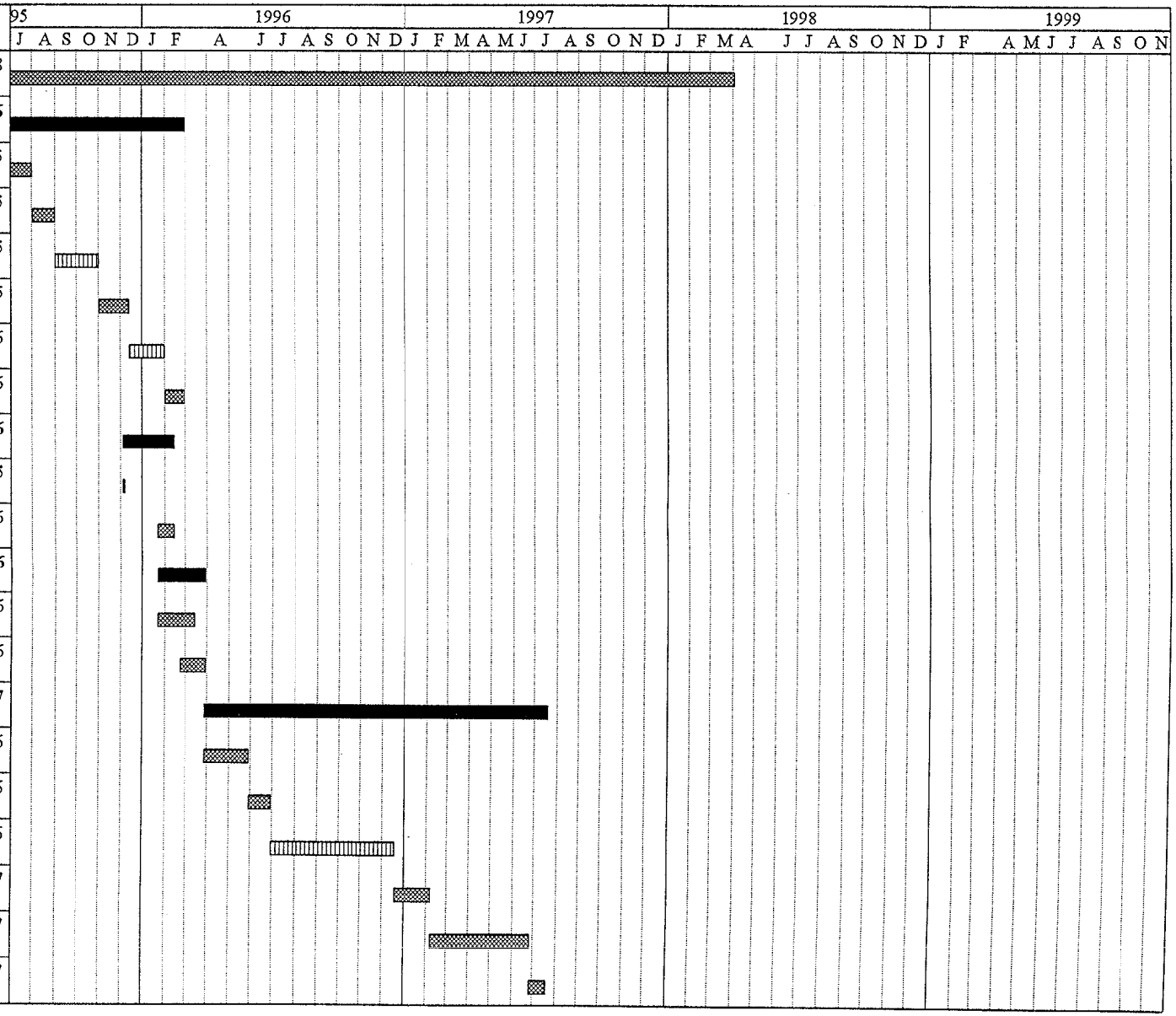


NOTE: Public Comment Period will close prior to finalization of the Record of Decision.

Figure D - 3

FY 1995: CTO-318, Sites 1 and 3 Remedial Investigation/Feasibility Study/Proposed Plan/Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 1 and 3	1007ed	7/1/95	4/3/98
RI WORK PLAN	**243ed**	**7/1/95**	**2/29/96**
Preliminary Draft Meeting	31ed	7/1/95	8/1/95
Draft	31ed	8/1/95	9/1/95
Review (EPA/State)	61ed	9/1/95	11/1/95
Draft Final	42ed	11/1/95	12/13/95
Review (EPA/State)	50ed	12/13/95	2/1/96
Final	28ed	2/1/96	2/29/96
RI FIELD INVESTIGATION	**72ed**	**12/4/95**	**2/14/96**
Mobilization	3ed	12/4/95	12/7/95
Field Investigation	23ed	1/22/96	2/14/96
SAMPLE ANALYSIS/VALIDATION	**68ed**	**1/22/96**	**3/30/96**
Sample Analysis	53ed	1/22/96	3/15/96
Data Validation	37ed	2/22/96	3/30/96
REMEDIAL INVESTIGATION REPORT	**478ed**	**3/28/96**	**7/19/97**
Preliminary Draft Meeting	62ed	3/28/96	5/29/96
Draft	31ed	5/29/96	6/29/96
Review (EPA/State)	172ed	6/29/96	12/18/96
Draft Final	51ed	12/18/96	2/7/97
Review (EPA/State)	139ed	2/7/97	6/26/97
Final **	23ed	6/26/97	7/19/97

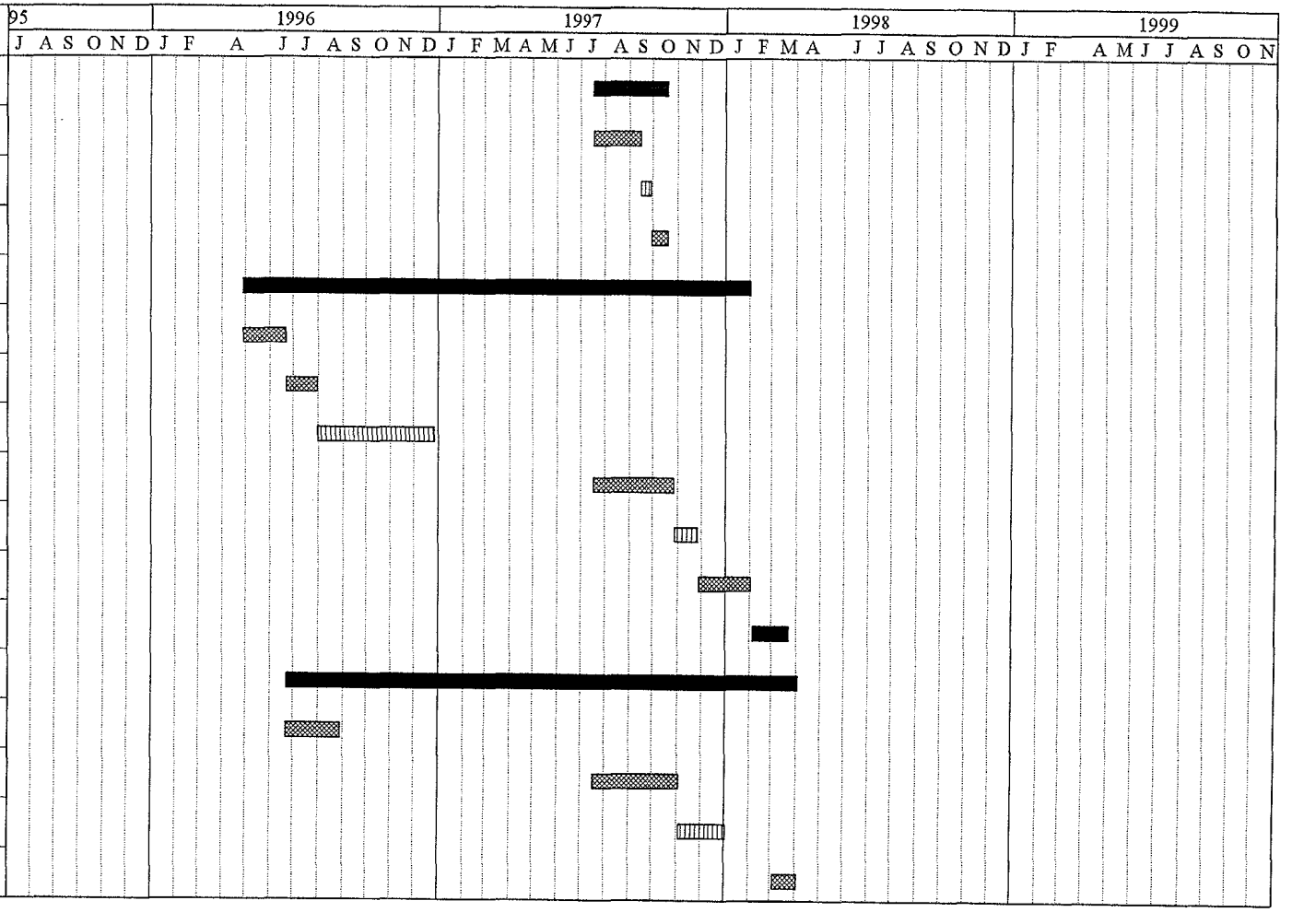


NOTE: Public Comment Period will close prior to finalization of the Record of Decision. **Review and Comments on documents covered under Partnering.

Figure D - 3

FY 1995: CTO-318, Sites 1 and 3 Remedial Investigation/Feasibility Study/Proposed Plan/Record of Decision
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
FOCUSED FEASIBILITY STUDY	**94ed**	**7/18/97**	**10/20/97**
Draft	59ed	7/18/97	9/15/97
Review	14ed	9/15/97	9/29/97
Final**	21ed	9/29/97	10/20/97
PRAP	**645ed**	**4/28/96**	**2/2/98**
Preliminary Draft Meeting	54ed	4/28/96	6/21/96
Draft	40ed	6/21/96	7/31/96
Review (EPA/State)	149ed	7/31/96	12/27/96
Draft Final	101ed	7/18/97	10/27/97
Review (EPA/State)	29ed	10/28/97	11/26/97
Final	67ed	11/27/97	2/2/98
PUBLIC COMMENT PERIOD	**47ed**	**2/4/98**	**3/23/98**
RECORD OF DECISION	**651ed**	**6/21/96**	**4/3/98**
Preliminary Draft Meeting	69ed	6/21/96	8/29/96
Draft	108ed	7/18/97	11/3/97
Review (EPA/State)	60ed	11/3/97	1/2/98
Final	30ed	3/4/98	4/3/98



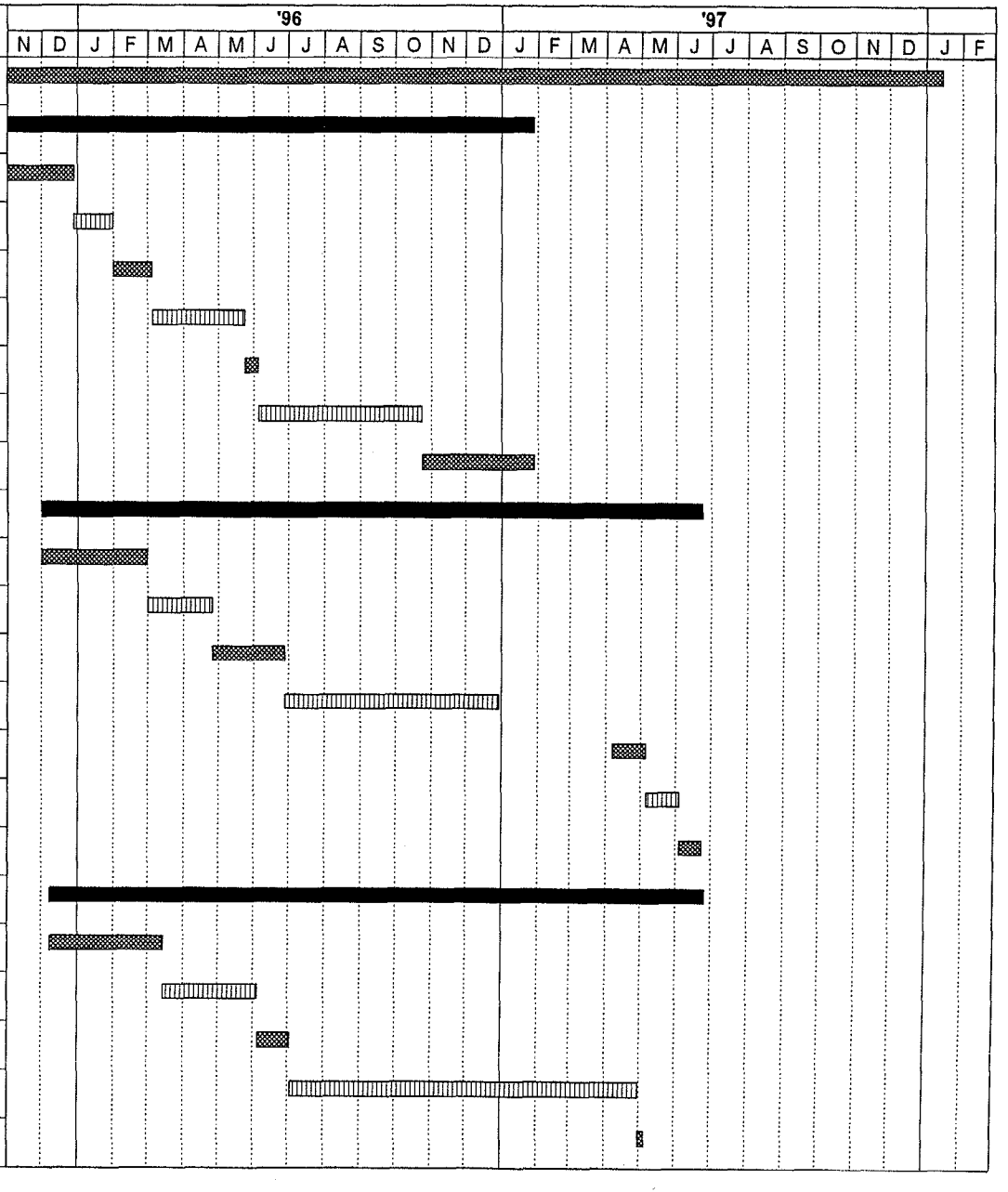
NOTE: Public Comment Period will close prior to finalization of the Record of Decision. **Review and Comments on documents covered under Partnering.

Figure D-4

FY 1995: CTO-334, Sites 9 and 19 Remedial Investigation/Feasibility Study/Proposed Plan/Record of Decision

Naval Weapons Station Yorktown, Yorktown, Virginia

Task Name	Days	Start	Finish
SITES 9 and 19	805ed	11/2/95	1/15/98
REMEDIAL INVESTIGATION REPORT	454ed	11/2/95	1/29/97
Preliminary Draft	57ed	11/2/95	12/29/95
Review (Navy)	34ed	12/29/95	2/1/96
Draft	33ed	2/1/96	3/5/96
Review (EPA/State)	80ed	3/5/96	5/24/96
Draft Final	12ed	5/24/96	6/5/96
Review (EPA/State)	141ed	6/5/96	10/24/96
Final	97ed	10/24/96	1/29/97
FEASIBILITY STUDY	570ed	12/1/95	6/23/97
Preliminary Draft	91ed	12/1/95	3/1/96
Review (Navy)	56ed	3/1/96	4/26/96
Draft	63ed	4/26/96	6/28/96
Review (EPA/State)	185ed	6/28/96	12/30/96
Draft Final	29ed	4/7/97	5/6/97
Review (EPA/State)	29ed	5/6/97	6/4/97
Final	19ed	6/4/97	6/23/97
PROPOSED PLAN	566ed	12/8/95	6/26/97
Preliminary Draft	98ed	12/8/95	3/15/96
Review (Navy)	82ed	3/15/96	6/5/96
Draft	28ed	6/5/96	7/3/96
Review	301ed	7/3/96	4/30/97
Draft Final	6ed	4/30/97	5/6/97



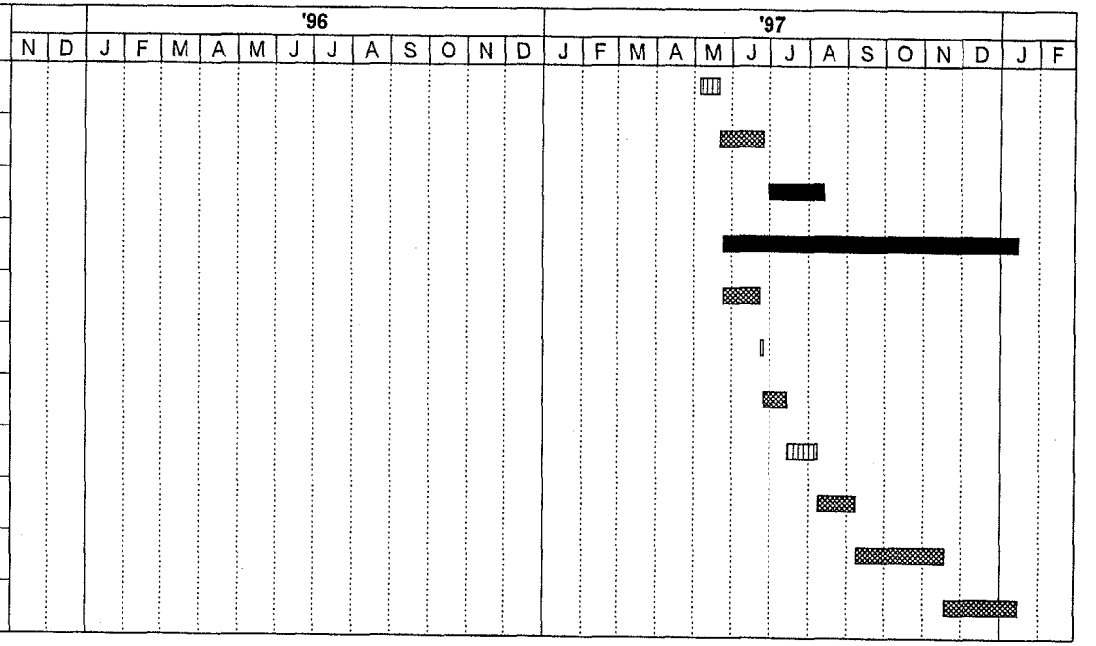
NOTE: Public Comment Period will close prior to finalization of the Record of Decision

Figure D-4

FY 1995: CTO-334, Sites 9 and 19 Remedial Investigation/Feasibility Study/Proposed Plan/Record of Decision

Naval Weapons Station Yorktown, Yorktown, Virginia

Task Name	Days	Start	Finish
Review (EPA/State)	16ed	5/6/97	5/22/97
Final	35ed	5/22/97	6/26/97
PUBLIC COMMENT PERIOD	44ed	6/30/97	8/13/97
RECORD OF DECISION	235ed	5/25/97	1/15/98
Draft	29ed	5/25/97	6/23/97
Review (EPA/State)	3ed	6/23/97	6/26/97
Draft Final	19ed	6/26/97	7/15/97
Review (EPA/State)	24ed	7/15/97	8/8/97
Final	31ed	8/8/97	9/8/97
Comments	71ed	9/8/97	11/18/97
Updated Final	58ed	11/18/97	1/15/98

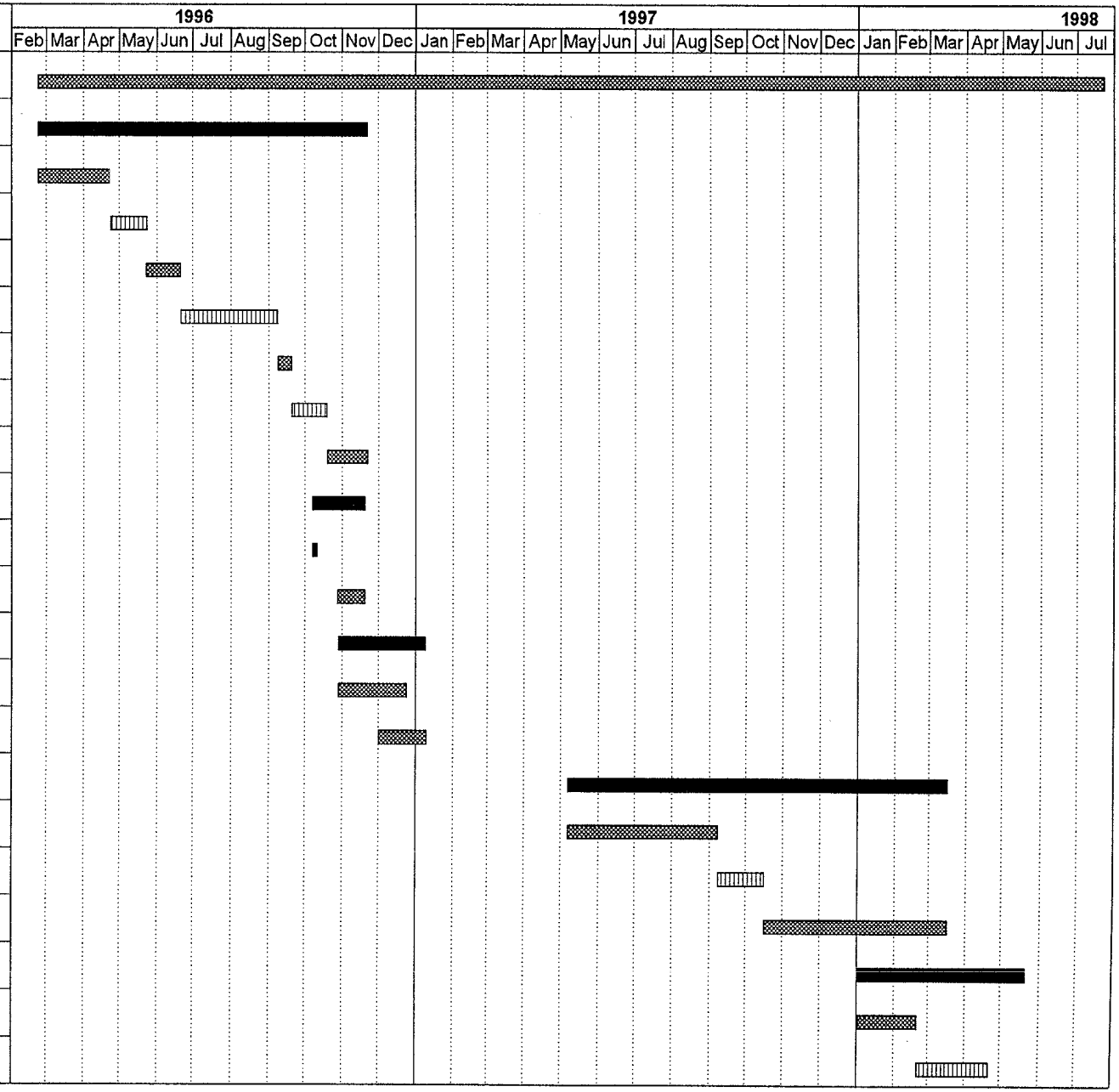


NOTE: Public Comment Period will close prior to finalization of the Record of Decision

APPENDIX E
DETAILED SCHEDULES: FY 1996
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Figure E-1
FY 1996: CTO-354, Sites 11 and 17, Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Yorktown, Virginia

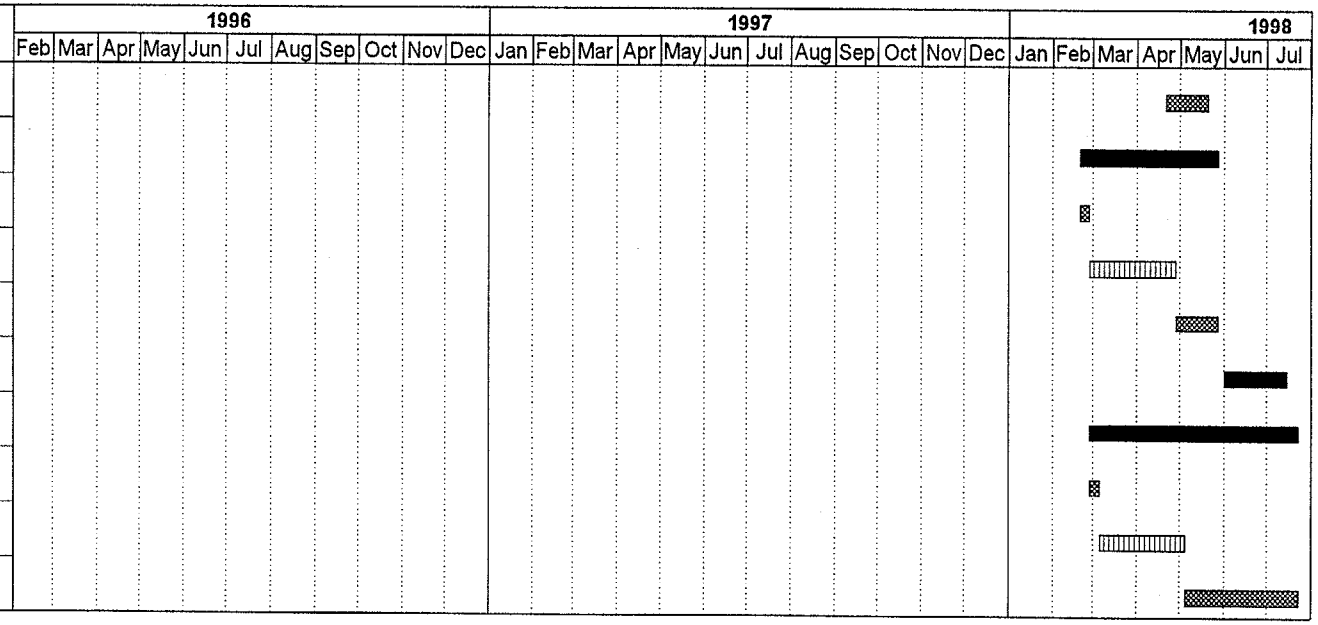
Task Name	Days	Start	Finish
SITES 11 and 17	882ed	2/23/96	7/24/98
WORK PLAN	273ed	2/23/96	11/22/96
Preliminary Draft	60ed	2/23/96	4/23/96
Review (Navy)	30ed	4/23/96	5/23/96
Draft	29ed	5/23/96	6/21/96
Review (EPA/State)	80ed	6/21/96	9/9/96
Draft Final	11ed	9/9/96	9/20/96
Review (EPA/State)	29ed	9/20/96	10/19/96
Final	34ed	10/19/96	11/22/96
RI FIELD INVESTIGATION	44ed	10/7/96	11/20/96
Mobilization	4ed	10/7/96	10/11/96
Field Investigation	23ed	10/28/96	11/20/96
SAMPLE ANALYSIS/VALIDATION	72ed	10/29/96	1/9/97
Sample Analysis	57ed	10/29/96	12/25/96
Data Validation	40ed	11/30/96	1/9/97
REMEDIAL INVESTIGATION REPORT	314ed	5/7/97	3/17/98
Draft	124ed	5/7/97	9/8/97
Review (EPA/State)	38ed	9/8/97	10/16/97
Final	152ed	10/16/97	3/17/98
FEASIBILITY STUDY	139ed	1/2/98	5/21/98
Draft	49ed	1/2/98	2/20/98
Review (EPA/State)	60ed	2/20/98	4/21/98



Note: Public Comment Period will close prior to finalization of the Record of Decision

Figure E-1
FY 1996: CTO-354, Sites 11 and 17, Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Yorktown, Virginia

Task Name	Days	Start	Finish
Final	30ed	4/21/98	5/21/98
PROPOSED PLAN	97ed	2/20/98	5/28/98
Draft	7ed	2/20/98	2/27/98
Review (EPA/State)	60ed	2/27/98	4/28/98
Final	30ed	4/28/98	5/28/98
PUBLIC COMMENT PERIOD	45ed	6/1/98	7/16/98
RECORD OF DECISION	147ed	2/27/98	7/24/98
Draft	7ed	2/27/98	3/6/98
Review (EPA/State)	60ed	3/6/98	5/5/98
Final	80ed	5/5/98	7/24/98

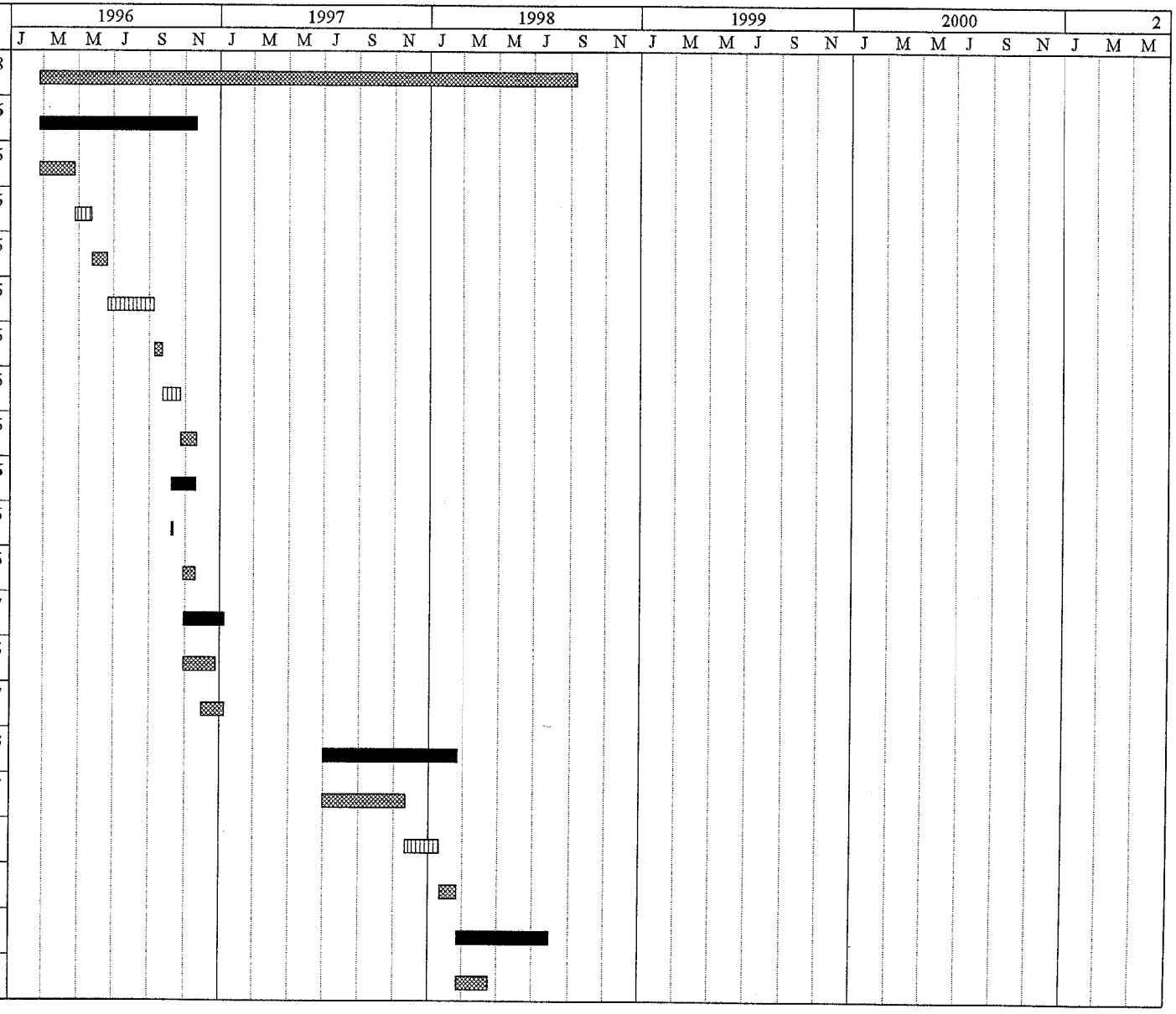


Note: Public Comment Period will close prior to finalization of the Record of Decision

Figure E - 2

FY 1996: CTO-349, Sites 4, 21, and 22, Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 4, 21, and 22	931ed	2/23/96	9/11/98
WORK PLAN	**273ed**	**2/23/96**	**11/22/96**
Preliminary Draft	61ed	2/23/96	4/24/96
Review (Navy)	30ed	4/24/96	5/24/96
Draft	27ed	5/24/96	6/20/96
Review (EPA/State)	81ed	6/20/96	9/9/96
Draft Final	14ed	9/9/96	9/23/96
Review (EPA/State)	30ed	9/23/96	10/23/96
Final	30ed	10/23/96	11/22/96
RI FIELD INVESTIGATION	**44ed**	**10/7/96**	**11/20/96**
Mobilization	4ed	10/7/96	10/11/96
Field Investigation	23ed	10/28/96	11/20/96
SAMPLE ANALYSIS/VALIDATION	**72ed**	**10/29/96**	**1/9/97**
Sample Analysis	57ed	10/29/96	12/25/96
Data Validation	40ed	11/30/96	1/9/97
REMEDIAL INVESTIGATION REPORT	**234ed**	**6/30/97**	**2/19/98**
Draft	144ed	6/30/97	11/21/97
Review (EPA/State)	60ed	11/21/97	1/20/98
Final	30ed	1/20/98	2/19/98
FEASIBILITY STUDY	**161ed**	**2/19/98**	**7/30/98**
Draft	56ed	2/19/98	4/16/98

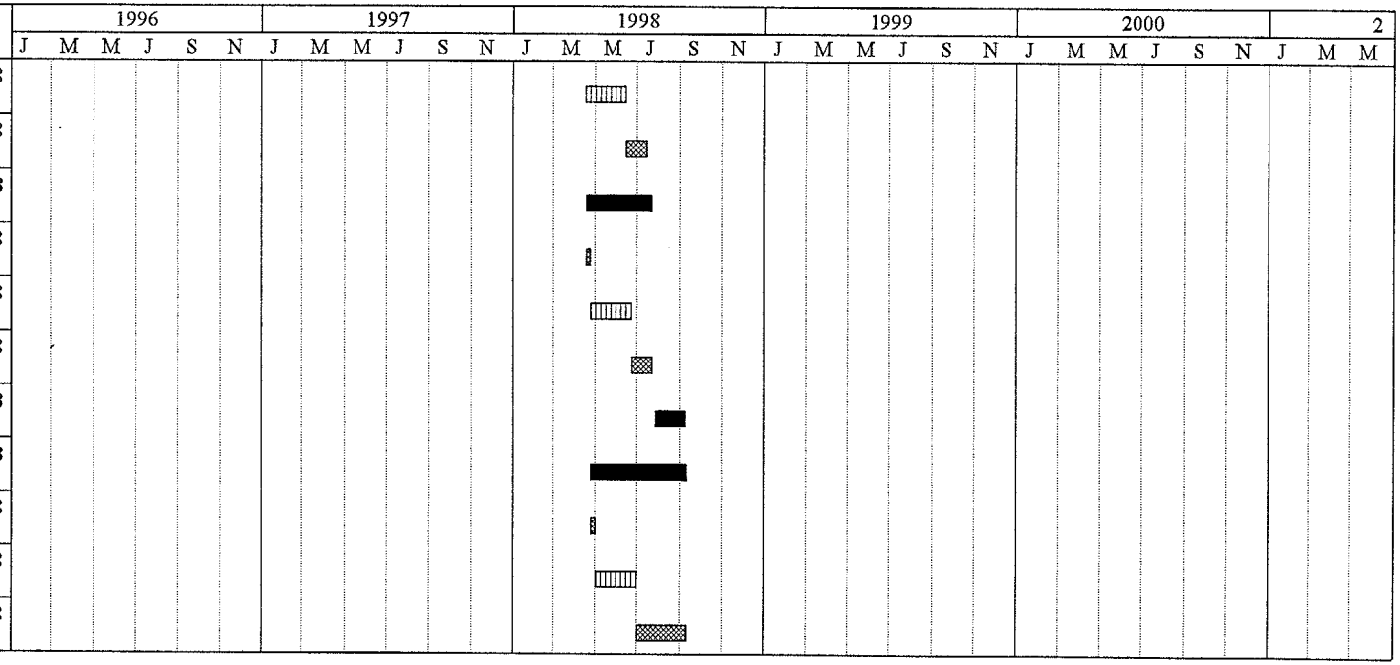


NOTE: Public Comment Period will close prior to finalization of the Record of Decision.

Figure E - 2

FY 1996: CTO-349, Sites 4, 21, and 22, Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
Review (EPA/State)	60ed	4/16/98	6/15/98
Final	30ed	6/15/98	7/15/98
PROPOSED PLAN	**97ed**	**4/17/98**	**7/23/98**
Draft	7ed	4/17/98	4/24/98
Review (EPA/State)	60ed	4/24/98	6/23/98
Final	30ed	6/23/98	7/23/98
PUBLIC COMMENT PERIOD	**45ed**	**7/27/98**	**9/10/98**
RECORD OF DECISION	**140ed**	**4/24/98**	**9/11/98**
Draft	7ed	4/24/98	5/1/98
Review (EPA/State)	60ed	5/1/98	6/30/98
Final	73ed	6/30/98	9/11/98

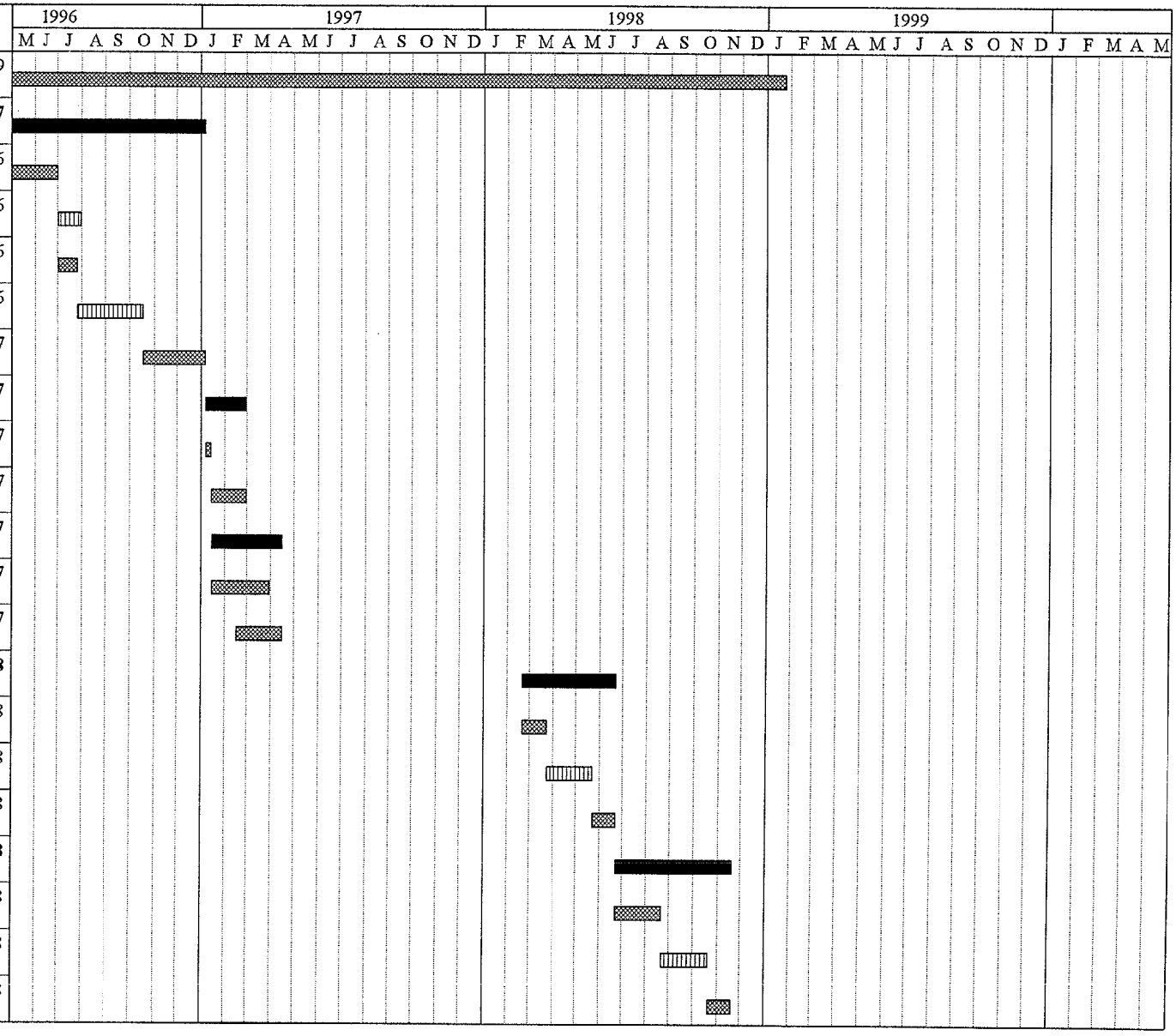


NOTE: Public Comment Period will close prior to finalization of the Record of Decision.

Figure E - 3

FY 1996: CTO-363, Sites 2, 8, 18 and SSA 14 Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITES 2, 8, 18 and SSA 14	999ed	5/1/96	1/25/99
WORK PLAN	**250ed**	**5/1/96**	**1/6/97**
Preliminary Draft	61ed	5/1/96	7/1/96
Review (Navy)	30ed	7/1/96	7/31/96
Draft	25ed	7/1/96	7/26/96
Review (EPA/State)	84ed	7/26/96	10/18/96
Final	80ed	10/18/96	1/6/97
RI FIELD INVESTIGATION	**53ed**	**1/6/97**	**2/28/97**
Mobilization	7ed	1/6/97	1/13/97
Field Investigation	46ed	1/13/97	2/28/97
SAMPLE ANALYSIS/VALIDATION	**92ed**	**1/14/97**	**4/16/97**
Sample Analysis	75ed	1/14/97	3/30/97
Data Validation	60ed	2/15/97	4/16/97
REMEDIAL INVESTIGATION REPORT	**122ed**	**2/20/98**	**6/22/98**
Draft	31ed	2/20/98	3/23/98
Review (EPA/State)	60ed	3/23/98	5/22/98
Final	31ed	5/22/98	6/22/98
FEASIBILITY STUDY	**151ed**	**6/22/98**	**11/20/98**
Draft	60ed	6/22/98	8/21/98
Review (EPA/State)	60ed	8/21/98	10/20/98
Final	31ed	10/20/98	11/20/98

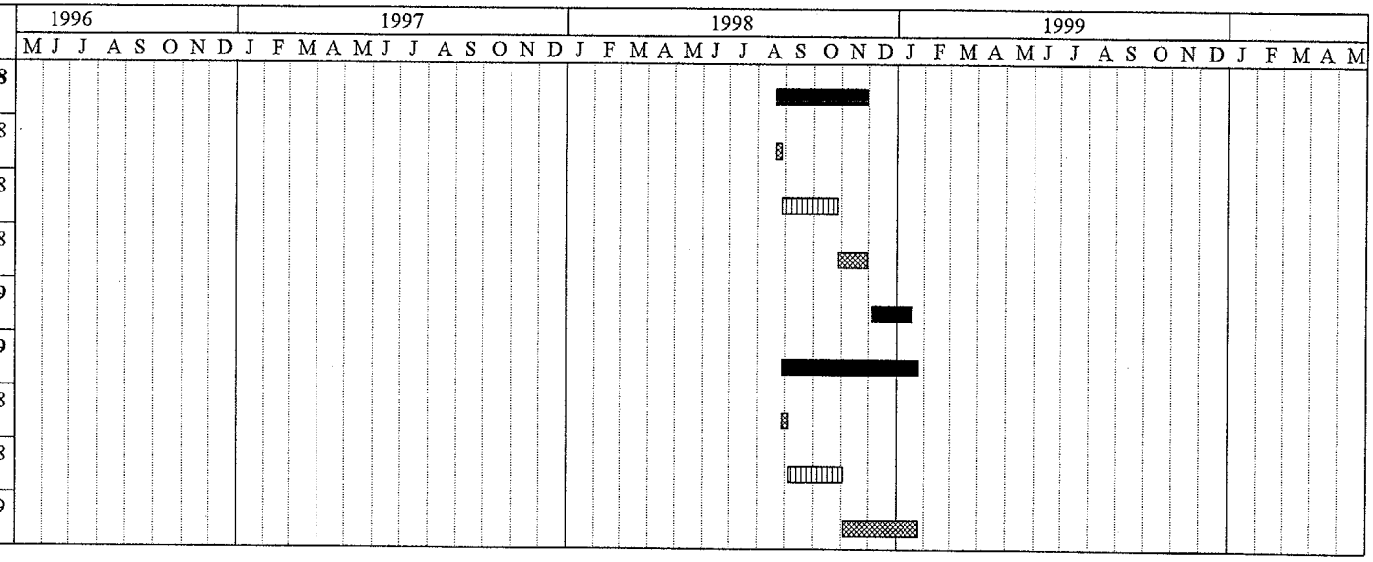


Note: Public Comment Period will close prior to finalization of the Record of Decision.

Figure E - 3

FY 1996: CTO-363, Sites 2, 8, 18 and SSA 14 Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
PROPOSED PLAN	**101ed**	**8/21/98**	**11/30/98**
Draft	7ed	8/21/98	8/28/98
Review (EPA/State)	60ed	8/28/98	10/27/98
Final	34ed	10/27/98	11/30/98
PUBLIC COMMENT PERIOD	**45ed**	**12/4/98**	**1/18/99**
RECORD OF DECISION	**150ed**	**8/28/98**	**1/25/99**
Draft	7ed	8/28/98	9/4/98
Review (EPA/State)	60ed	9/4/98	11/3/98
Final	83ed	11/3/98	1/25/99

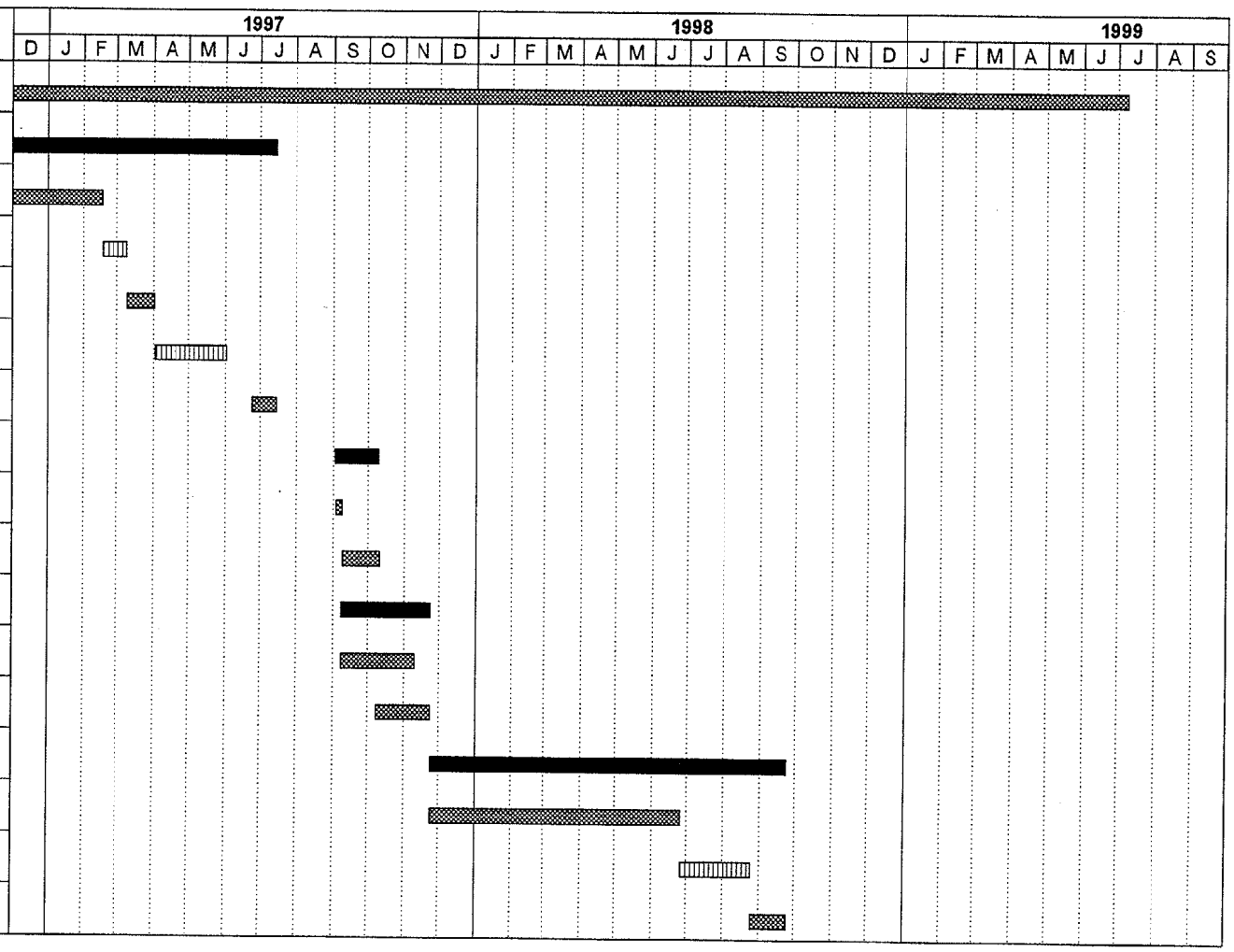


Note: Public Comment Period will close prior to finalization of the Record of Decision.

APPENDIX F
DETAILED SCHEDULES: FY 1997
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Figure F-1
FY 1997: CTO-35, Sites 23, 24, 25, 26 Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD
Naval Weapons Station Yorktown, Virginia

Task Name	Days	Start	Finish
SITES 23, 24, 25, and 26	950ed	12/1/96	7/9/99
WORK PLAN	226ed	12/1/96	7/15/97
Preliminary Draft	78ed	12/1/96	2/17/97
Review (Navy)	21ed	2/17/97	3/10/97
Draft	23ed	3/10/97	4/2/97
Review (EPA/State)	61ed	4/2/97	6/2/97
Final	21ed	6/24/97	7/15/97
RI FIELD INVESTIGATION	38ed	9/2/97	10/10/97
Mobilization	6ed	9/2/97	9/8/97
Field Investigation	32ed	9/8/97	10/10/97
SAMPLE ANALYSIS/VALIDATION	77ed	9/8/97	11/24/97
Sample Analysis	63ed	9/8/97	11/10/97
Data Validation	47ed	10/8/97	11/24/97
REMEDIAL INVESTIGATION REPORT	304ed	11/24/97	9/24/98
Draft	214ed	11/24/97	6/26/98
Review (EPA/State)	60ed	6/26/98	8/25/98
Final	30ed	8/25/98	9/24/98



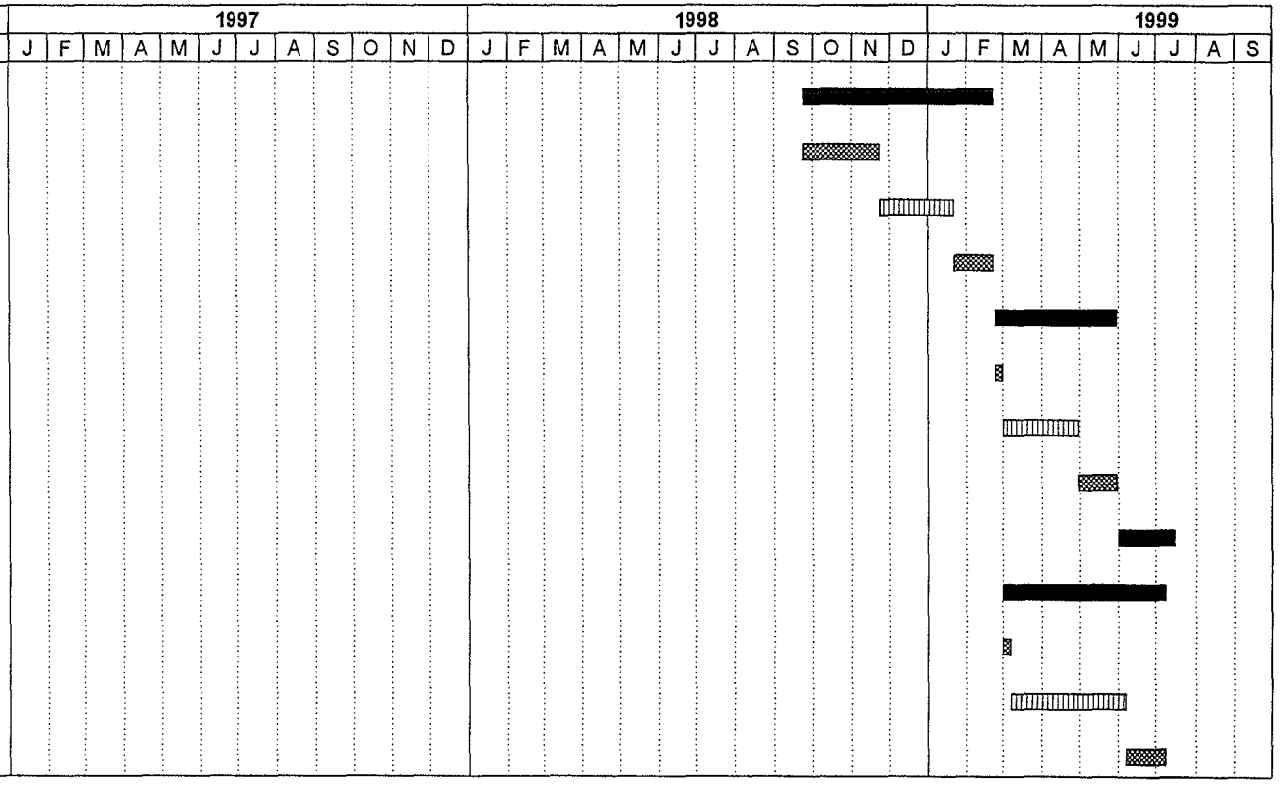
Note: Public Comment Period will close prior to finalization of the Record of Decision

Figure F-1

FY 1997: CTO-35, Sites 23, 24, 25, 26 Work Plan/Field Investigation/RI Report/FS Report/PRAP/ROD

Naval Weapons Station Yorktown, Virginia

Task Name	Days	Start	Finish
FEASIBILITY STUDY	151ed	9/24/98	2/22/99
Draft	60ed	9/24/98	11/23/98
Review (EPA/State)	60ed	11/23/98	1/22/99
Final	31ed	1/22/99	2/22/99
PROPOSED PLAN	97ed	2/23/99	5/31/99
Draft	6ed	2/23/99	3/1/99
Review (EPA/State)	60ed	3/1/99	4/30/99
Final	31ed	4/30/99	5/31/99
PUBLIC COMMENT PERIOD	45ed	6/1/99	7/16/99
RECORD OF DECISION	130ed	3/1/99	7/9/99
Draft	7ed	3/1/99	3/8/99
Review (EPA/State)	91ed	3/8/99	6/7/99
Final	32ed	6/7/99	7/9/99



Note: Public Comment Period will close prior to finalization of the Record of Decision

Figure F-2
FY 1997: CTO-35, SSAs 3, 4, 5, 9, 10, 20, 21, 22, 23, and 24 Work Plan/Field Investigation/SSP Report
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish
SITE SCREENING AREAS 3, 4, 5, 9, 10, 20, 21, 22, 23, AND 24	599ed	12/1/96	7/23/98
WORK PLAN	226ed	12/1/96	7/15/97
Preliminary Draft	78ed	12/1/96	2/17/97
Review (Navy)	21ed	2/17/97	3/10/97
Draft	23ed	3/10/97	4/2/97
Review (EPA/State)	61ed	4/2/97	6/2/97
Final	43ed	6/2/97	7/15/97
REMEDIAL FIELD INVESTIGATION	69ed	9/2/97	11/10/97
Mobilization	6ed	9/2/97	9/8/97
Field Investigation	63ed	9/8/97	11/10/97
SAMPLE ANALYSIS/VALIDATION	107ed	9/8/97	12/24/97
Sample Analysis	93ed	9/8/97	12/10/97
Data Validation	77ed	10/8/97	12/24/97
SITE SCREENING PROCESS REPORT	120ed	3/25/98	7/23/98
Draft	30ed	3/25/98	4/24/98

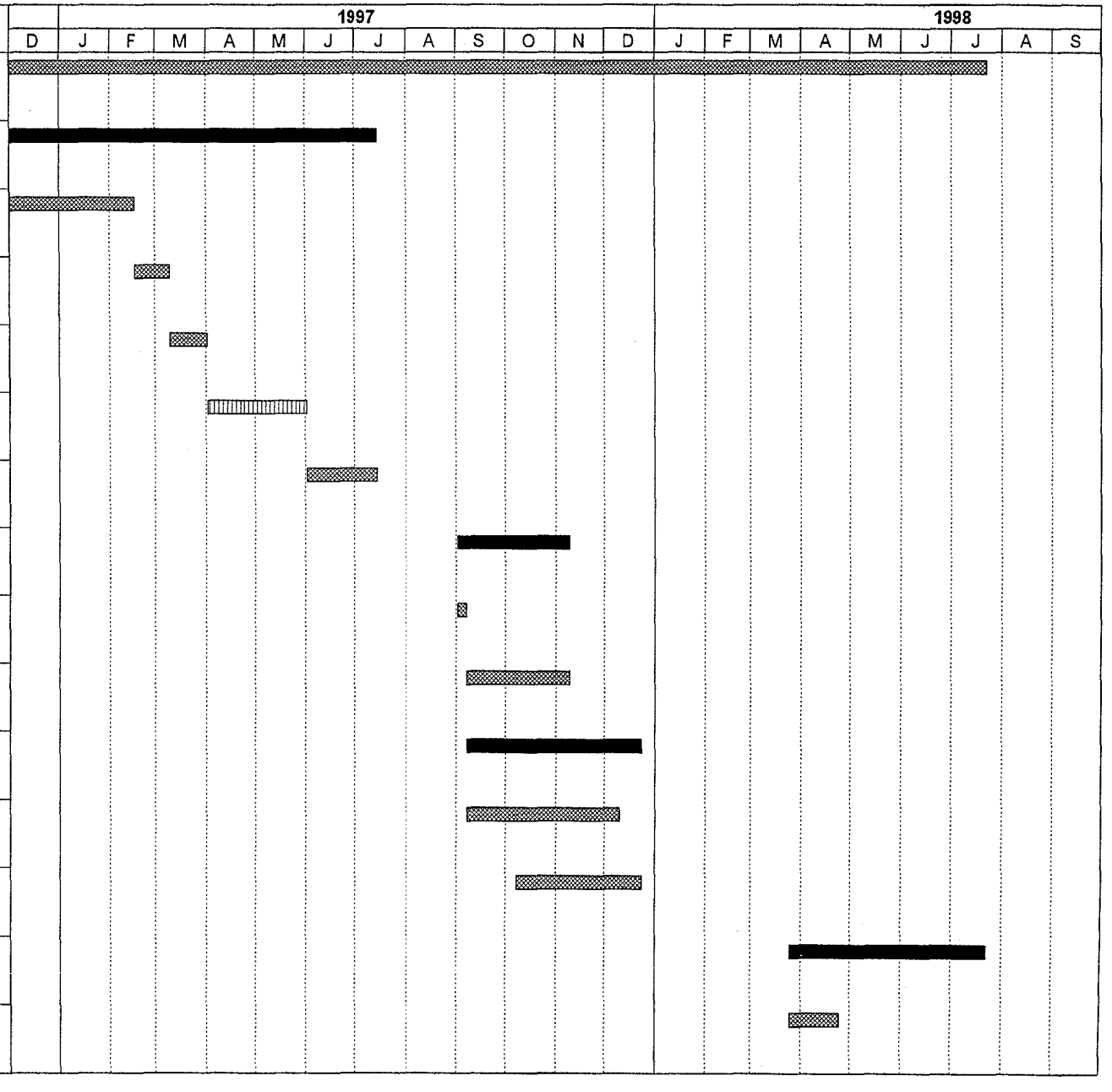


Figure F-2

FY 1997: CTO-35, SSAs 3, 4, 5, 9, 10, 20, 21, 22, 23, and 24 Work Plan/Field Investigation/SSP Report

Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start	Finish	1997												1998								
				D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Review (EPA/State)	60ed	4/24/98	6/23/98																						
Final	30ed	6/23/98	7/23/98																						

APPENDIX G
SUMMARY SCHEDULES: FY 1998 AND BEYOND
NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

FIGURE G-1

FY 1998: CTO-386, Site 12 - Long Term Monitoring, WP/FI Report, Naval Weapons Station, Yorktown, Virginia

Task Name	Duration	Start	Finish
Site 12 LTM - Project Management	697ed	1/1/98	11/29/99
WORK PLAN	119ed	1/1/98	4/30/98
Draft	29ed	1/1/98	1/30/98
Review	60ed	1/30/98	3/31/98
Final	30ed	3/31/98	4/30/98
FIELD WORK 1998	7ed	5/8/98	5/15/98
LTM REPORT	199ed	5/15/98	11/30/98
Draft	108ed	5/15/98	8/31/98
Review	60ed	8/31/98	10/30/98
Final	31ed	10/30/98	11/30/98
FIELD WORK 1999	7ed	5/7/99	5/14/99
LTM REPORT	199ed	5/14/99	11/29/99
Draft	109ed	5/14/99	8/31/99
Review	59ed	8/31/99	10/29/99
Final	31ed	10/29/99	11/29/99

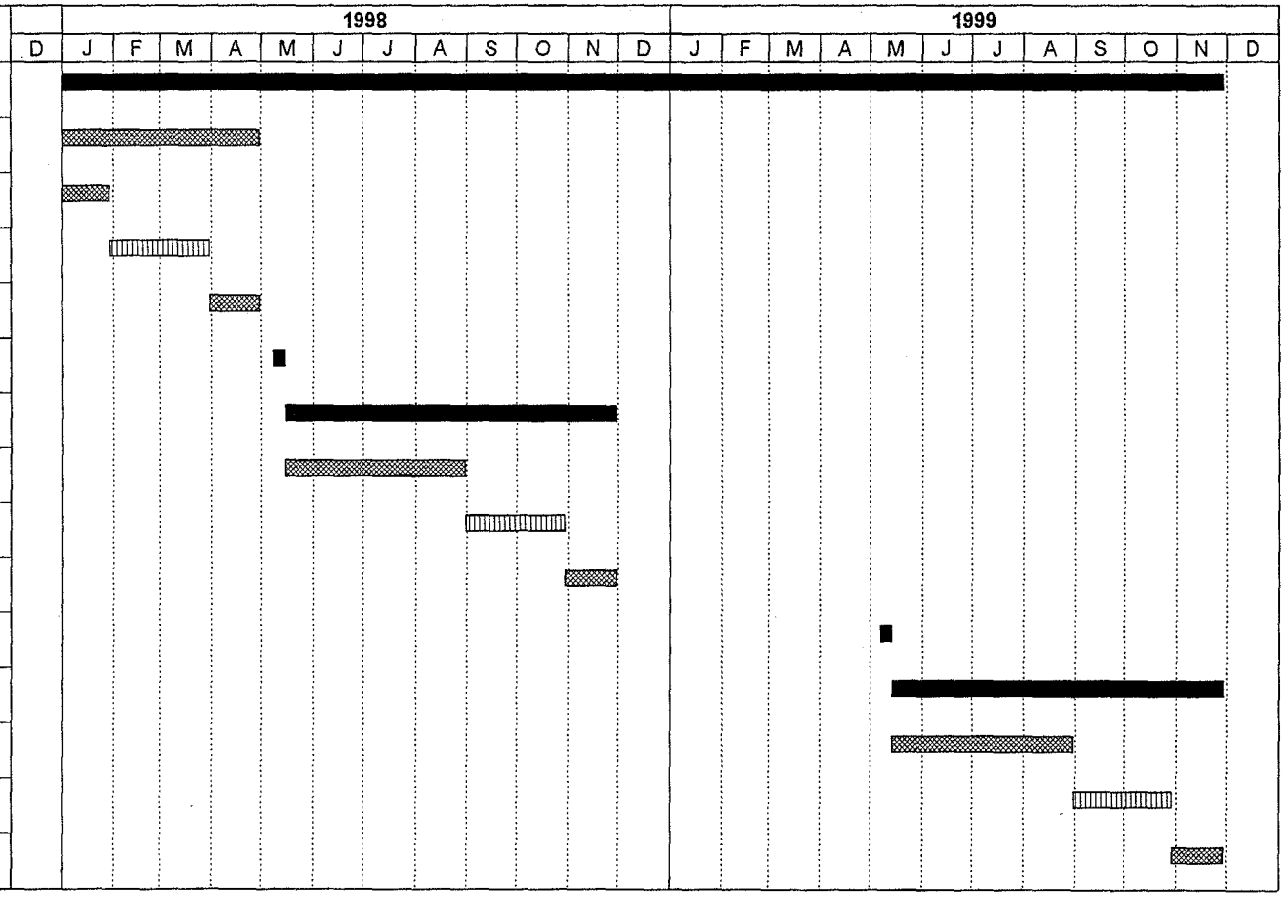


Figure G-2
FY 2000: Sites 11 and 17, Remedial Design
Naval Weapons Station Yorktown, Yorktown, Virginia

Task Name	Days	Start1	Finish1
REMEDIAL DESIGN	420ed	11/15/99	1/8/01
Draft	162ed	11/15/99	4/25/00
Review (Navy/EPA/State)	62ed	4/25/00	6/26/00
Pre-Final	60ed	6/26/00	8/25/00
Review (EPA/State)	60ed	8/25/00	10/24/00
Final	59ed	10/24/00	12/22/00
Review (EPA/State)	17ed	12/22/00	1/8/01
CONSTRUCTION CONTRACTING	60ed	1/8/01	3/9/01

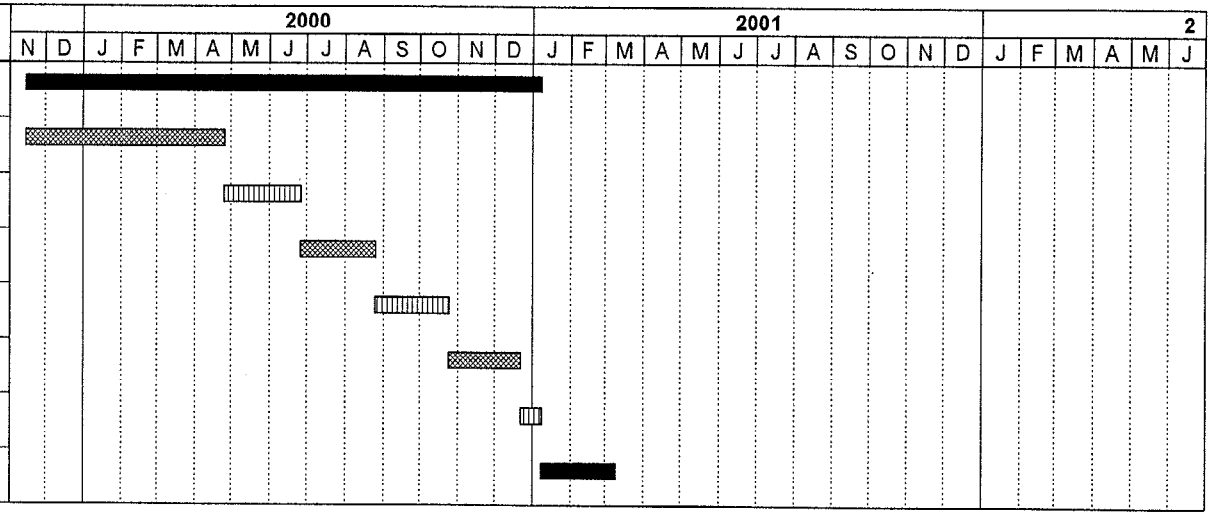


Figure G - 3

FY 2000: Sites 4, 21, and 22, Remedial Design
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start
REMEDIAL DESIGN	**405ed**	**9/30/99**
Draft	151ed	9/30/99
Review (Navy/EPA/State)	59ed	2/28/00
Pre-Final	60ed	4/27/00
Review (EPA/State)	60ed	6/26/00
Final	60ed	8/25/00
Review (EPA/State)	15ed	10/24/00
CONSTRUCTION CONTRACTING	**61ed**	**11/8/00**

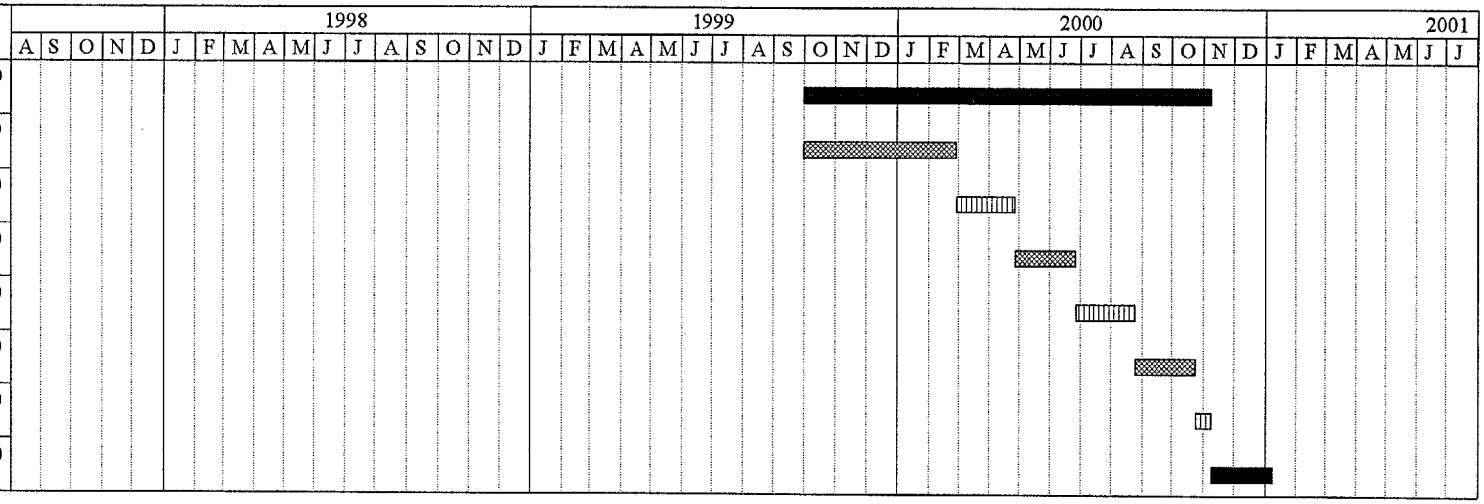


Figure G - 4

FY 2000: Site 2, Remedial Design

Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start
REMEDIAL DESIGN	**409ed**	**4/30/00**
Draft	152ed	4/30/00
Review (Navy/EPA/State)	60ed	9/29/00
Pre-Final	62ed	11/28/00
Review (EPA/State)	60ed	1/29/01
Final	60ed	3/30/01
Review (EPA/State)	15ed	5/29/01
CONSTRUCTION CONTRACTING	**61ed**	**6/13/01**

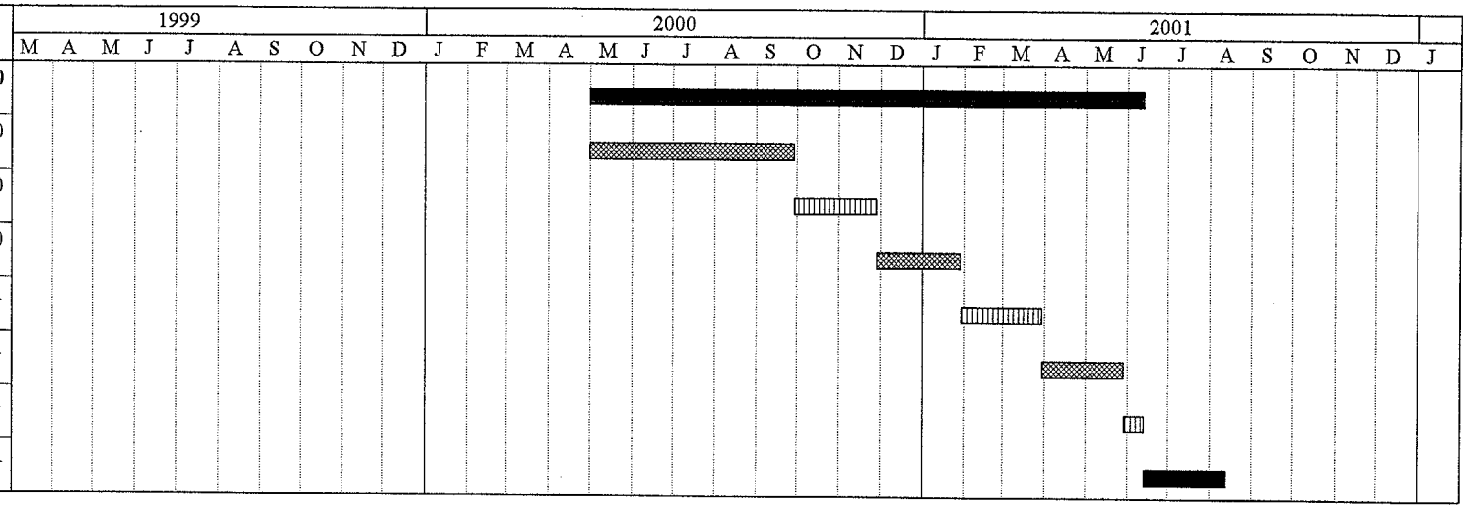
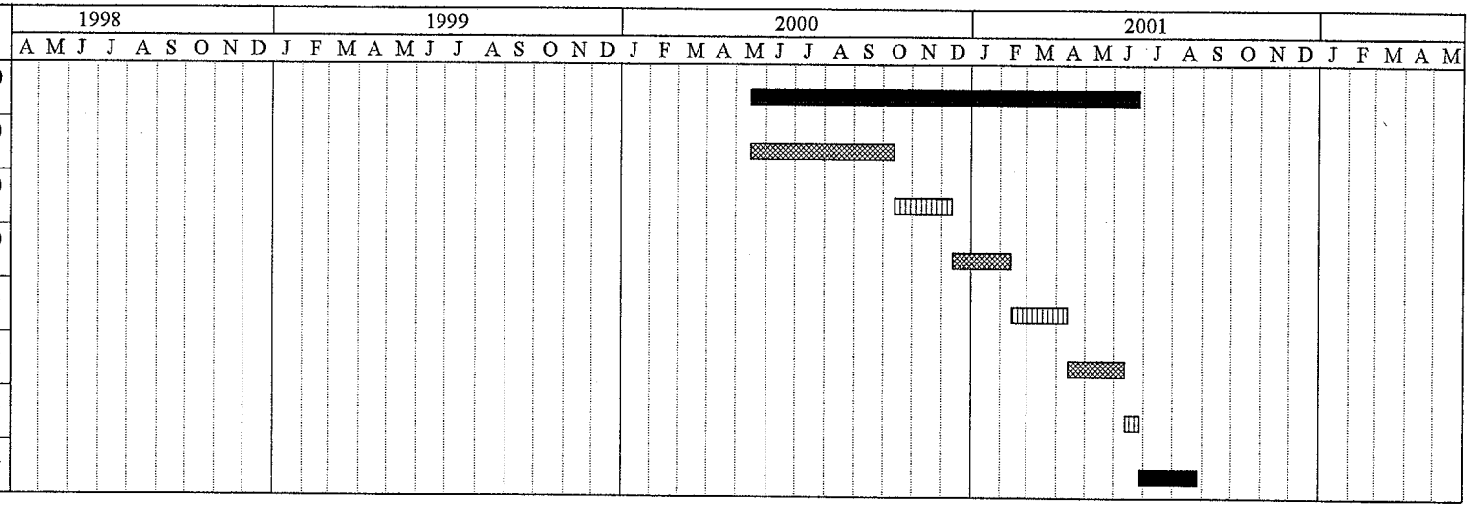


Figure G - 5

FY 2000: Sites 8 and 18, Remedial Design
Naval Weapons Station Yorktown, Yorktown, Virginia

Task	Days	Start
REMEDIAL DESIGN	**408ed**	**5/15/00**
Draft	151ed	5/15/00
Review (Navy/EPA/State)	60ed	10/13/00
Pre-Final	62ed	12/12/00
Review (EPA/State)	60ed	2/12/01
Final	60ed	4/13/01
Review (EPA/State)	15ed	6/12/01
CONSTRUCTION CONTRACTING	**61ed**	**6/27/01**