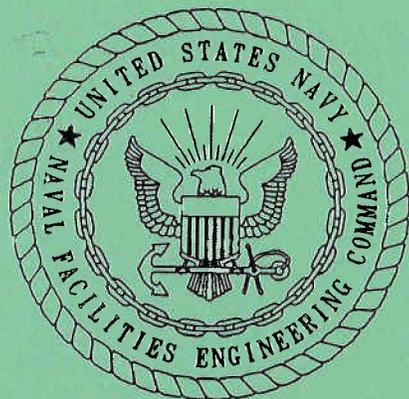


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INVESTIGATIVE DERIVED WASTE MANAGEMENT PLAN NAS CECIL FIELD FL
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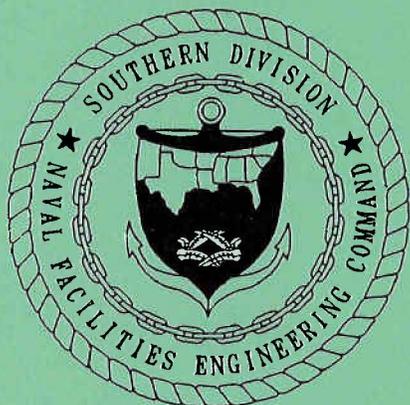


**INVESTIGATION-DERIVED WASTE
MANAGEMENT PLAN**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**UNIT IDENTIFICATION CODE: N60200
CLEAN - DISTRICT I
CONTRACT NO. N62467-89-D-0317**

APRIL 1994



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010**

**INVESTIGATION-DERIVED WASTE
MANAGEMENT PLAN**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

Unit Identification Code: N60200

Contract No. N62467-89-D-0317

Prepared by:

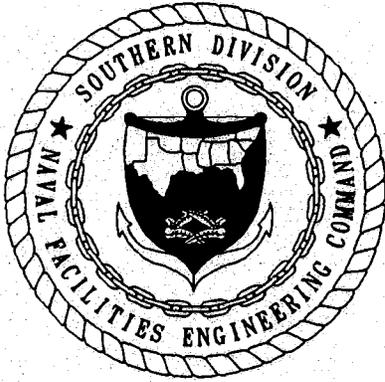
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Prepared for:

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Naval Facilities Engineering Command
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North Charleston, South Carolina 29418**

Alan Shoultz, Engineer-in-Charge

April 1994



FOREWORD

The Department of the Navy developed the Installation Restoration (IR) program to locate, identify, and remediate environmental contamination from the past disposal of hazardous materials at Navy and Marine Corps installations. The Navy's IR program follows the Department of Defense's Environmental Restoration Program mandated by the Superfund Amendments and Reauthorization Act of 1986 to address waste sites that may pose a threat to human health or the environment.

The Navy's IR program consists of Preliminary Assessment and Site Inspection, Remedial Investigation and Feasibility Study (RI/FS), and Remedial Design and Remedial Action at sites where hazardous materials were allegedly disposed. The Preliminary Assessment and Site Inspection identify the presence of pollutants. The RI/FS analyzes the nature and extent of contamination and determines the optimum remedial solution. The Remedial Design and Remedial Action complete the implementation of the solution.

Previous investigations have determined that Naval Air Station (NAS) Cecil Field, Florida, has 35 sites that may pose a threat to human health or the environment. Each site will be investigated further as part of the IR program.

This document has been developed to provide guidance on the management of wastes generated as a result of the field investigations associated with the cleanup process as defined through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and, in some cases, through the Resource Conservation and Recovery Act (RCRA). These wastes include soils, groundwater, used personal protective equipment, disposable sampling equipment, water from monitoring well development and purging, and decontamination fluids. These wastes are collectively referred to as investigation-derived wastes (IDW).

Questions regarding this report should be addressed to the Commanding Officer, Code OOB, P.O. Box 111, NAS Cecil Field, Jacksonville, Florida 32215-0111.

EXECUTIVE SUMMARY

This document has been developed to provide guidance on the management of wastes generated as a result of the field investigations associated with the cleanup process as defined by the Comprehensive Environmental Response, Compensation, and Liability Act at Naval Air Station (NAS) Cecil Field, Florida. These wastes may include: soils, groundwater, used personal protective equipment (PPE), disposable sampling equipment (DE), water from monitoring well development and purging, and decontamination fluids. These waste materials are collectively referred to as investigation-derived wastes, or IDW.

The key guidance documents used to develop this management strategy for IDW are: (1) the U.S. Environmental Protection Agency (USEPA) Office of Emergency and Remedial Response (OERR) directive entitled *Management of Investigation-Derived Wastes During Site Inspections* (OERR Directive 9345.3-02, May 1991), and (2) the USEPA Office of Solid Waste and Emergency Response quick reference fact sheet entitled *Guide to Management of Investigation-Derived Wastes* (Publication 9345.3-03FS, April 1992). These guidance documents support, when practicable, management of IDW within the designated area of concern (AOC). The USEPA promotes onsite management of IDW as a means to minimize costs associated with the investigative phase of the cleanup process.

The strategy for IDW management proposed in this document is divided into the management of liquid and solid waste and combinations of both. Solid waste includes soils (earthen solid waste) as well as used items of personal protective equipment (PPE) and disposable sampling equipment (DE) (non-earthen solid waste). Liquid wastes include well development or purge waters and decontamination fluids. Another type of IDW, drilling mud, is a combination of liquid and solid wastes. A strategy unique to the management of drilling mud is required.

Liquid waste will be discharged near the point of generation or onto the ground within the AOC if it can be determined that such action will not increase risk to human health or the environment. If the liquid waste is suspected of being contaminated, it will be containerized and tested to determine if the waste is a characteristic hazardous waste. If the liquid waste is not hazardous, it will be disposed through the NAS Cecil Field Navy-owned treatment works (NOTW). If the liquid is determined to be hazardous, the waste will be disposed either through the NOTW (if allowed by the NOTW operating permit) or offsite through the NAS Jacksonville Public Works Center (PWC).

Solid earthen waste will be deposited within the AOC if it is determined that such an action will not increase the risks to human health or the environment. If it is determined that such an action could result in an increased risk, the soils will be containerized. Non-earthen solid IDW, such as PPE and DE, if determined not to have been in contact with contaminated media, will be disposed in a solid waste dumpster. Contaminated PPE and DE will be containerized in 55-gallon drums. Containerized non-earthen materials will be stored onsite or disposed offsite through the PWC. Earthen solid waste will be subject to Toxicity Characteristic Leaching Procedure (TCLP) testing, to determine whether or not it is a characteristic hazardous waste. If the soils fall below maximum concentrations for the toxicity characteristic (as determined by the TCLP analysis), they will either be managed onsite or disposed through the PWC.

Drilling mud, an IDW with both liquid and solid constituents, will be dewatered to the extent practicable at the location of generation. Water removed from the waste will be managed as liquid IDW. The remaining solids will be tested for the presence of free liquids. If it is determined that the remaining solid waste is suitably dewatered, then the waste will be managed as solid IDW. If the remaining solid waste is not suitably dewatered, then management depends on whether or not the drilling mud is shown to be hazardous according to RCRA waste identification rules. If it is not hazardous, the partially dewatered mud will be deposited with other earthen waste. If the Field Operations Leader judges that the mud is likely to be hazardous, then the partially dewatered mud will be suitably contained for disposal through the PWC or for storage onsite. Containerized mud will be removed from the site at or before the time of site remediation.

All containerized earthen wastes left onsite for management during pending remedial actions will be stored in a manner that is appropriately protective. Roll-off bins will be covered to avoid potential exposure to NAS Cecil Field residents and workers. Measures will be taken to prevent unauthorized access to stored waste where determined by the Navy to be necessary or otherwise appropriate.

The strategy for the management of drilling mud is to dewater it to the extent practicable at the location of generation. Water removed from the waste will be managed as liquid IDW. The remaining solids will be tested for the presence of free liquids. If it is determined that the remaining solid waste is suitably dewatered, then the waste will be managed as solid IDW. If the remaining solid waste is not suitably dewatered, then management depends on whether or not the drilling mud is shown to be hazardous according to RCRA waste identification rules. If it is not hazardous, the partially dewatered mud will be deposited with other earthen waste. If the Field Operations Leader judges that the mud is likely to be hazardous, then the partially dewatered mud will be suitably contained for disposal through the PWC or for storage onsite. Containerized mud will be removed from the site at or before the time of site remediation.

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NAS Cecil Field
Jacksonville, Florida

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ABB-ES	ABB Environmental Services, Inc.
AIMD	Aircraft Intermediate Maintenance Department
AOC	area of concern
ARARS	applicable or relevant and appropriate requirements
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CLP	USEPA Contract Laboratory Procedure
CWA	Clean Water Act
°C	degrees Celsius
°F	degrees Fahrenheit
DE	disposable sampling equipment
EC	Environmental Coordinator
EIC	Engineer-in-Charge
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FOL	Field Operations Leader
FR	Federal Register
HDPE	high density polyethylene
HSWA	Hazardous and Solid Waste Amendments
HWSF	hazardous waste storage facility
IDW	investigation-derived wastes
IR	Installation Restoration
IRPM	Installation Restoration Program Manager
LDRs	land disposal restrictions
mm	millimeters
µg/l	micrograms per liter
µm	micrometer
NAS	Naval Air Station
NCP	National Oil and Hazardous Substances Contingency Plan
NOTW	Navy-owned treatment works
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
OU	Operable Unit

GLOSSARY (Continued)

PCBs	polychlorinated biphenyls	
PID	photoionization detector	
POTW	publicly owned treatment works	
PPE	personal protective equipment	
PVC	polyvinyl chloride	
PWC	Public Works Center	
RCRA	Resource Conservation and Recovery Act	
RFA	RCRA Facility Assessment	
RFI	RCRA Facility Investigation	
RI/FS	Remedial Investigation/Feasibility Study	
RI	remedial investigation	
SARA	Superfund Amendments and Reauthorization Act	
SDWA	Safe Drinking Water Act	
SI	site inspection	
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command	
SW	solid waste	
SWDA	Solid Waste Disposal Act	
TCLP	Toxicity Characteristic Leaching Procedure	
TL	Technical Leader	
TOM	Task Order Manager	
TSCA	Toxic Substances Control Act	
TSD	treatment, storage, and disposal	
USDOT	U.S. Department of Transportation	
USEPA	U.S. Environmental Protection Agency	

1.0 INTRODUCTION

Naval Air Station (NAS) Cecil Field is a National Priority List (NPL) Superfund site under the U.S. Environmental Protection Agency (USEPA) and Florida Department of Environmental Protection (FDEP) jurisdiction. A description of all the sites at the facility is provided as Appendix A.

The collection of environmental samples at a potential hazardous waste site can generate a variety of potentially contaminated investigation-derived wastes (IDW) such as: soils, groundwater, used personal protective equipment (PPE), disposable sampling equipment (DE), and decontamination fluids. These IDW must be managed to minimize impact to the site and to prevent increased risk to human health or the environment.

1.1 PURPOSE. The objective of this plan is to define a comprehensive program for managing IDW generated at NAS Cecil Field. This plan has been developed in accordance with relevant health and safety, regulatory, and NAS requirements. This plan also defines the roles and responsibilities of the prime contractor, subcontractors, and NAS representatives.

1.2 ORGANIZATION OF THE PLAN. This plan consists of:

Chapter 1.0, Introduction;

Chapter 2.0, Management of Investigation-Derived Wastes (IDW);

Chapter 3.0, Determination of Resource Conservation and Recovery Act (RCRA) Hazardous or Non-hazardous Waste; and

Chapter 4.0, Points of Contact.

The USEPA guidance document entitled *Management of Investigation-Derived Wastes During Site Inspections* (USEPA, May 1991) provides detailed information on managing IDW at Superfund sites. This guidance document was used in developing the site-specific IDW management strategies detailed in Chapter 2.0 of this plan. Chapter 3.0 provides criteria for determining whether or not IDW are RCRA hazardous wastes; other applicable or relevant and appropriate requirements (ARARs) are also discussed in this section. Chapter 4.0 describes the responsibility of each party that is involved in managing IDW and identifies appropriate points of contact.

2.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTES (IDW)

This chapter describes the procedures for IDW management that are applicable to NAS Cecil Field. Section 2.1 defines the types of IDW expected to be generated at the facility and presents the disposal options available for each type of IDW. Section 2.2 describes equipment and logistics that will be used for IDW management at NAS Cecil Field. Options for the final disposal of hazardous IDW are presented in Section 2.3. Section 2.4 discusses the selection process for choosing the best final disposal alternative.

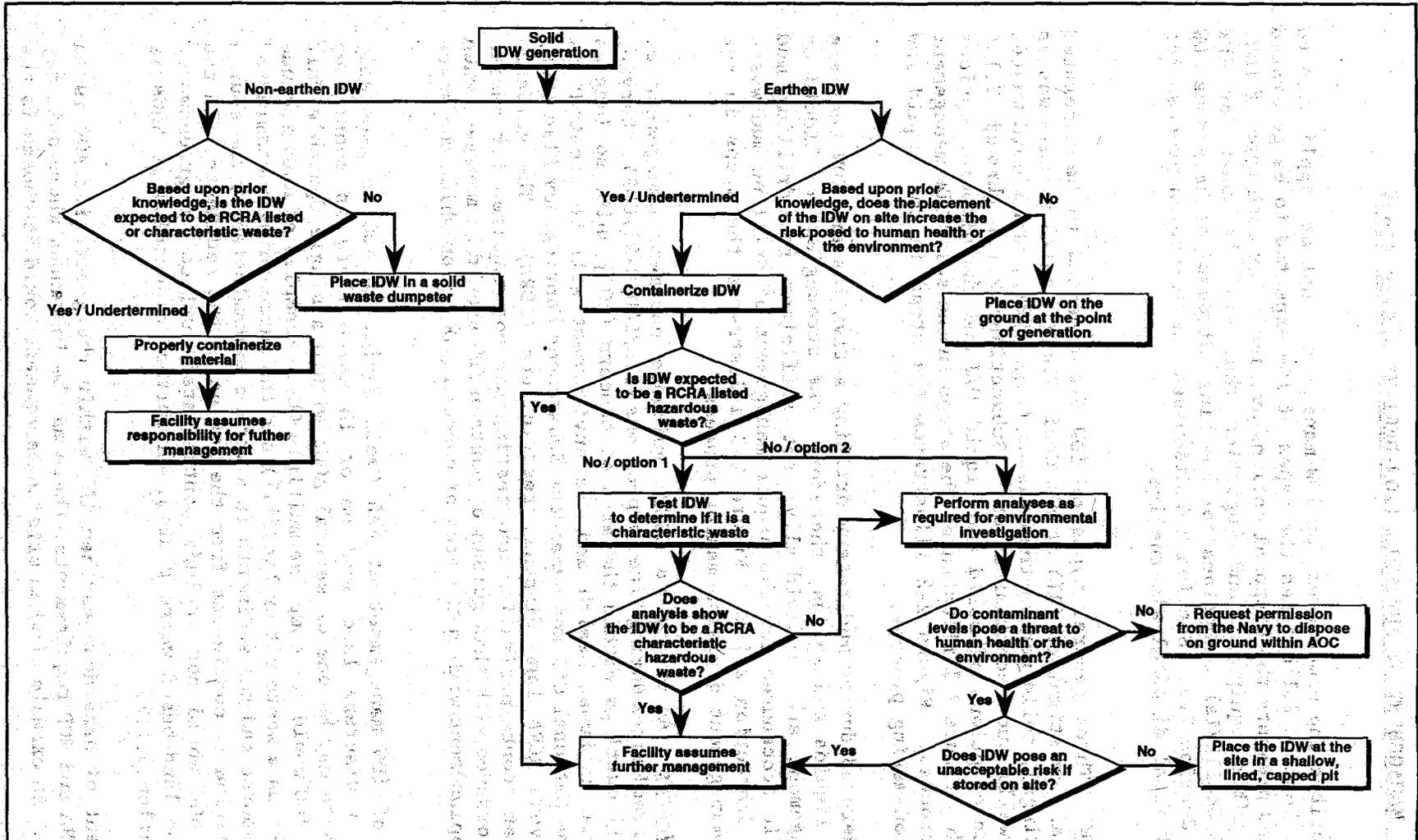
2.1 TYPES OF IDW. Three general types of IDW are expected to be generated during the remedial investigation (RI) at NAS Cecil Field: solid earthen wastes (e.g., drill cuttings), solid non-earthen wastes (e.g., PPE), and liquid wastes from monitoring wells and decontamination. Subsections 2.1.1 through 2.1.4 provide general descriptions of solid and liquid IDW and the disposal options available for each. Figure 2-1 illustrates the steps in the solid IDW management decision-making process. Figure 2-2 illustrates the steps in the liquid IDW management decision-making process.

Drilling muds generated during mud-rotary drilling activities are IDW that are composed of both liquids and solids; therefore, the strategies for liquid or solid waste management are, individually, not sufficient for drilling mud disposal. Specific procedures for the proper management of drilling mud waste are presented in Subsection 2.1.4. Figure 2-3 illustrates the steps in the drilling mud IDW management decision-making process.

2.1.1 Earthen Wastes According to USEPA guidance document *Management of Investigation-Derived Wastes During Site Inspections* (EPA/540/G-91/009), "Burying RCRA-hazardous soil cuttings within the area of concern [AOC] unit, so long as no increased hazard to human health and the environment will be created" is consistent with the National Oil and Hazardous Substances Contingency Plan (NCP) and would not invoke RCRA land disposal restrictions (LDRs). The guidance further states that "containerization and testing are not required for onsite disposal." In accordance with this guidance, earthen IDW should be managed, when practicable, by replacement within the area of concern (AOC) from which the waste was generated.

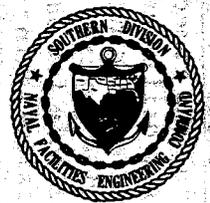
For the purposes of IDW management at NAS Cecil Field, an AOC is generally considered to be a discrete land area on or in which there is contiguous contamination. There may be one or several AOCs within a single Operable Unit (OU), but a single AOC would not comprise multiple OUs. Examples of AOCs include a waste source (such as a waste pit or landfill) and the surrounding contaminated soil, and a waste source and the sediments in a stream contaminated by the source where the contamination is continuous from the source to the sediments. In the second case, the AOC would not include contaminated surface or groundwater associated with the land-based waste source. A further discussion of AOCs is provided in Subsection 3.1.2.

Although replacement of hazardous earthen IDW within the generating AOC is in accordance with RCRA and NCP requirements, there may be instances where soil may be managed offsite. An example of when offsite management would be chosen is the

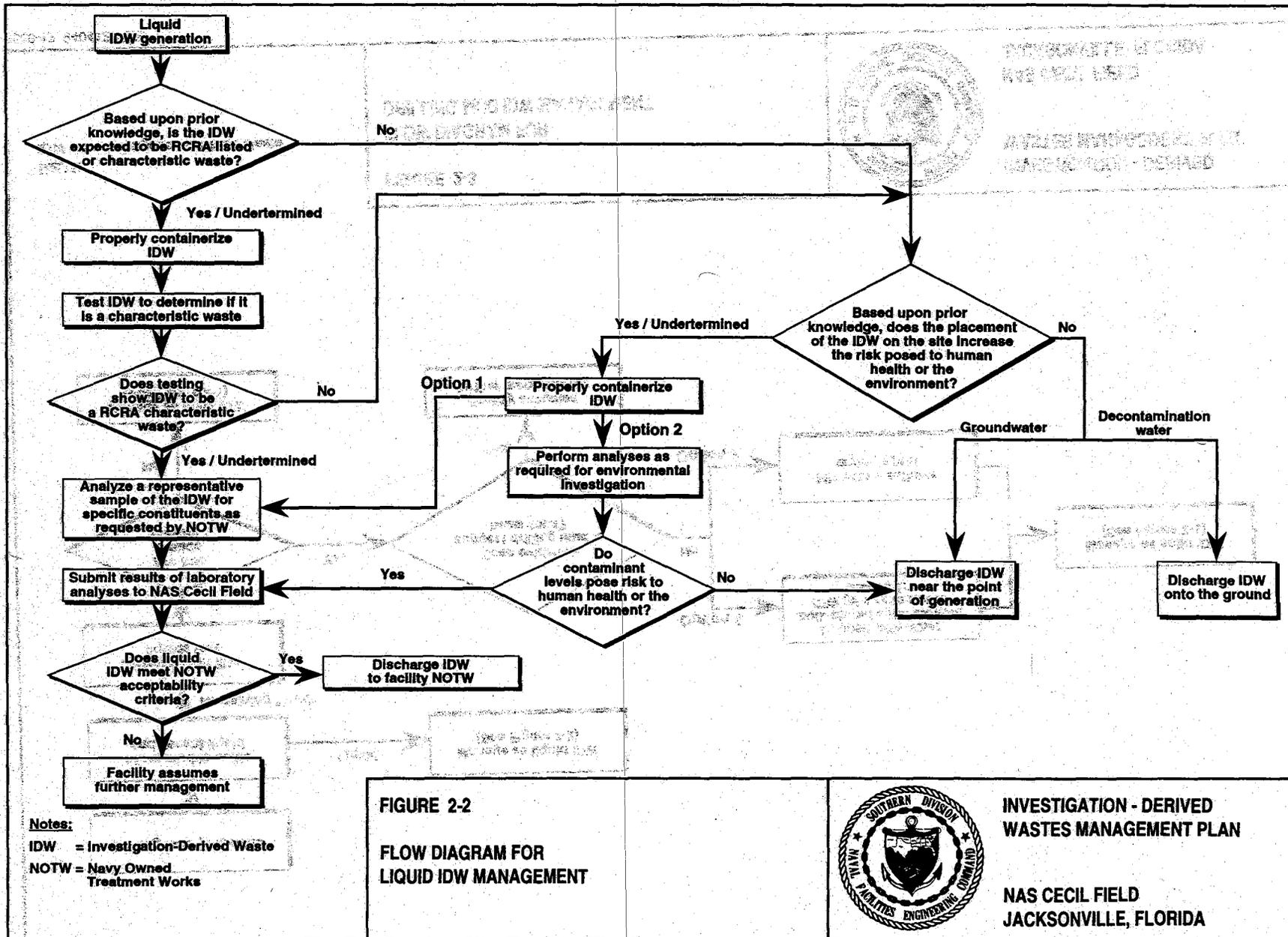


Notes:
 IDW = Investigation-Derived Waste
 RCRA = Resource Conservation and Recovery Act

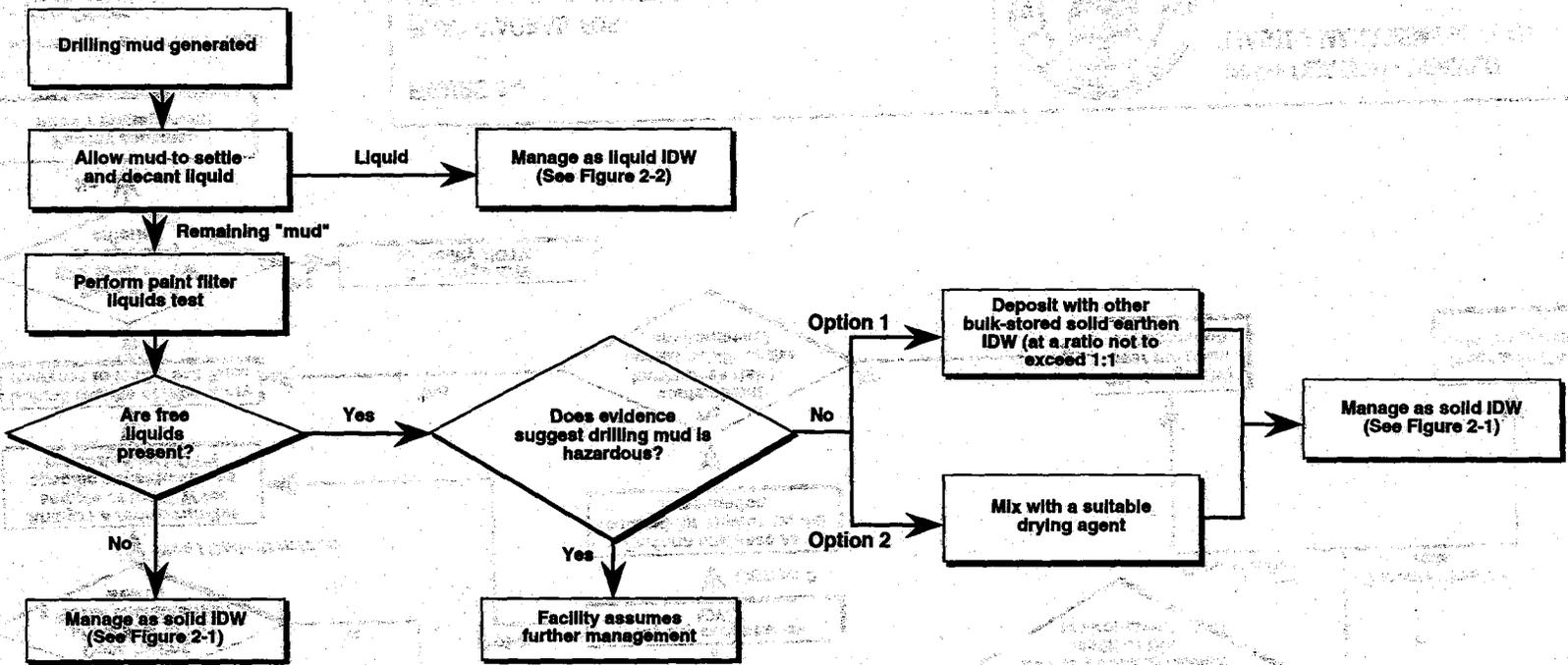
FIGURE 2-1
FLOW DIAGRAM FOR
SOLID IDW MANAGEMENT



INVESTIGATION - DERIVED
WASTES MANAGEMENT PLAN
NAS CECIL FIELD
JACKSONVILLE, FLORIDA



2-4

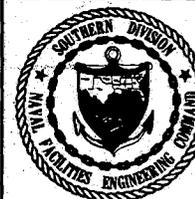


Notes:

IDW = Investigation-Derived Waste

FIGURE 2-3

**FLOW DIAGRAM FOR
DRILLING MUD IDW MANAGEMENT**



**INVESTIGATION - DERIVED
WASTES MANAGEMENT PLAN**

**NAS CECIL FIELD
JACKSONVILLE, FLORIDA**

disposal of drilling cuttings from a deep, contaminated aquifer. Shallow placement of these soils, even within the original AOC, could cause contamination of a shallow aquifer that may not have been previously contaminated. See Subsection 3.1.2 for further discussions on the relationship between AOCs and ARARs.

When it is determined that replacement of cuttings will not increase risk to human health or the environment, earthen IDW may be spread on the ground adjacent to the boring or well from which they were generated. When discarded at the well or boring locations from which the soils are generated, cuttings must be spread out to prevent a nuisance condition, physical hazard, or drainage problem. The wastes must be placed to minimize erosion by surface water and rainfall, and not create sediment loads in nearby surface waterways such as ditches, curbs, or swales. At sites in or around industrialized or populated areas or at sites where the earthen IDW are suspected to be contaminated, ABB Environmental Services, Inc. (ABB-ES), will containerize drilling cuttings. If the IDW are suspected to be listed hazardous wastes, the containerized IDW will then be turned over to NAS Cecil Field for further management and disposition.

If the IDW are not a listed hazardous waste, one of two options may be selected for further management.

- The containerized waste may be stored onsite until the results of the investigation are evaluated. If it is determined that the IDW would pose no risk to human health and the environment (based on the results of the risk assessment), the IDW may be placed directly on the ground within the AOC.
- The containerized IDW may be tested to determine if the waste is characteristically hazardous. (See Appendix B for a list of toxicity characteristic compounds and their corresponding maximum levels.) If the waste is not characteristically hazardous (and has previously been determined not to be a listed hazardous waste), the waste may either be placed in a lined and capped underground area within the generating AOC or manifested to an offsite RCRA subtitle D landfill.

All hazardous IDW must be properly staged within the AOC until the appropriate disposal option is selected and implemented. Lined storage areas must be constructed so that the bottoms do not contact the water table. Earthen drill cuttings to be buried in the storage area must be screened for volatile organic compounds with a photoionization detector (PID) on the day that the cuttings are generated. After placement within the storage area, the earthen waste will be capped with a geomembrane, then covered with approximately 6 inches of clean fill.

Each lined underground storage area must contain and isolate its contents and prevent exposure to human beings and the environment. If a site requires remediation or if leachate is encountered, then the buried material will be laboratory tested to determine if the waste should be removed. If removal is warranted, the material will be removed as part of the remediation of that site. Underground storage sites will be marked by a polyvinyl chloride (PVC) pipe (or other non-degradable material) stake that is cemented in place at each corner.

Non-hazardous earthen IDW may also be disposed in an offsite, RCRA Subtitle D landfill. Wastes may be disposed offsite if they are derived from AOCs that are not conducive to construction of lined underground storage areas. This disposal option will require Navy approval and management.

RCRA-hazardous earthen IDW must be disposed in accordance with the Navy-selected final disposal option. Discussions on the final disposal options are presented in Paragraph 2.1.1.1.

2.1.1.1 Options for Disposal of Hazardous Earthen IDW This subsection presents two options for management of earthen IDW that have been determined to be unacceptable for placement back onto the AOC. The options are:

Option 1, containerize and store the IDW within the AOC until the site is remediated; or

Option 2, dispose of the IDW through the Public Works Center (PWC) Jacksonville.

Option 1, Store IDW Within AOC. This option requires keeping the hazardous earthen IDW staged onsite in either a bulk storage container (roll-off bin) or in 55-gallon drums. The important requirements of this option are that the waste must remain within the AOC and that the IDW must be stored in a manner that minimizes the possibility of exposure to base residents and workers. Containers should be covered with a lid that can be locked or bolted in place. Measures will be taken to prevent unauthorized access to the stored IDW.

The purpose of leaving IDW onsite is to remediate or remove the IDW concurrently with site remediation; hence, reducing the overall cost of IDW management.

Option 2, Dispose of IDW Through the PWC Jacksonville. The PWC at NAS Jacksonville operates the hazardous waste storage facility located at NAS Cecil Field. The process for disposal through the PWC begins by determining if the waste is a listed or characteristic hazardous waste. If the IDW is hazardous, it should be prepared for disposal. The first step in preparing for disposal is to contact the PWC to request that they dispose of the waste. The second step is to complete the waste profile (shown on Figure 2-4) for the PWC. The waste profile must be filled out as completely as possible using the results of the Toxicity Characteristic Leaching Procedure (TCLP) and other analytical results. Copies of the appropriate analytical results should be attached to the waste profile. Additional testing may be conducted (as required) by the PWC upon review of the profile. The waste profile and the manifest itself will be signed by the PWC. The PWC will arrange for the wastes to be picked up at the site.

2.1.1.2 Selection of a Hazardous Waste Management Option for Earthen IDW The selection of the final management option for hazardous earthen IDW will be based on AOC-specific conditions in accordance with the following.

Temporary Storage of Earthen IDW Within the AOC. The decision to temporarily store hazardous earthen IDW within the AOC should be considered when a significant cost savings is anticipated as a result of IDW being disposed or treated in conjunction with remedial wastes. This option is also appropriate when the waste contaminating the IDW is subject to LDRs. Storage of the waste onsite should not trigger LDRs until the final remedy is implemented.

WASTE PROFILE

A. GENERAL INFORMATION

- | | |
|---|--|
| 1. GENERATOR NAME: NAS Jacksonville | 3. GENERATOR USEPA ID: FLID#6170024412 |
| 2. FACILITY ADDRESS: PO Box 5, Code 184
Jacksonville, Florida | 4. GENERATOR STATE ID: NA |
| 6. TECHNICAL CONTACT: Jim Schroeder, HW Coordinator, (904) 772-2717 | 5. ZIP CODE: 32212-5000 |

B. 1. NAME OF WASTE

- | | |
|--|------------------------|
| 2. USEPA/STATE ID NO.: | 5. MODE OF COLLECTION: |
| 3. PROCESS GENERATING WASTE: | |
| 4. PROJECTED ANNUAL VOLUME/UNITS: | |
| 6. Is this a dioxin listed waste as defined in 40 CFR 261.31 (e.g. F020 - F023 OR F026 - F028) ? (Y/N) | |
| 7. Is this waste restricted from land disposal (40 CFR)? (Y/N) Has an exemption been granted (Y/N) ? | |
| 8. Does the waste meet applicable treatment standards ? (Y/N) | |

I. MATERIAL COMPOSITION

PHYSICAL STATE:
ODOR:
Description
COLOR:
DENSITY: BTU/LB:
FLASH POINT (F): ASH CONTENT:
TOTAL SOLIDS: pH:
LAYERING:

IV. MATERIAL COMPOSITION

COMPONENT	CONC/RANGE
TOTAL:	100%

II. CHEMICAL COMPOSITION

HEAVY METALS:
ARSENIC MERCURY ZINC
BARIUM SELENIUM CHROMIUM-HEX
CADMIUM SILVER OTHER
CHROMIUM COPPER OTHER
LEAD NICKEL
OTHER OTHER

OTHER COMPONENTS (ppm)
CYANIDES VOLATILE ORGANICS
SULFIDES TOTAL HALOGENS
PCBS PHENOLICS
OTHER

V. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL (Y/N) ?
PROPER SHIPPING NAME:
HAZARD CLASS: U.N./N.A. NO.
ADDITIONAL DESCRIPTION:
METHOD OF SHIPMENT:
CERCLA REPORTABLE QUANTITY (RQ):
EMERGENCY RESPONSE GUIDE:
DOT PUBLICATION 5800.4 PAGE NO. EDITION(YR)
SPECIAL HANDLING INFORMATION:

III. HAZARDOUS CHARACTERISTICS

** NOTE Explosives, shock sensitive, pyrophoric, radioactive, and etiological waster normally are not accepted by the DRMO.

VI. GENERATOR CERTIFICATION

I, _____ HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETED AND ACCURATE. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

SIGNATURE/DATE: _____

FIGURE 2-4

**WASTE PROFILE FORM USED BY
NAS CECIL FIELD PWC**



**INVESTIGATION-DERIVED
WASTE MANAGEMENT
PLAN**

**NAS CECIL FIELD,
JACKSONVILLE, FLORIDA**

Offsite Disposal of Earthen IDW. IDW should be disposed offsite in lieu of onsite storage whenever the time frame for a remedial decision is excessive. The Navy may also choose to dispose of the IDW whenever storage of the wastes within an AOC is not appropriate because of the location of the site. For example, storage of wastes on the golf course may raise community relations issues or be considered unsightly and, hence, may be considered for disposal.

2.1.2 Solid Non-Earthen Wastes Uncontaminated wastes, such as packaging and shipping containers (sand and mud bags, cardboard boxes, clean PPE, etc.), may be placed in a heavy-duty trash bag and disposed in a trash dumpster on base. Because they are not contaminated, contact with these materials poses no threat to human health or the environment. PPE and DE that have been in contact with material known or expected to be hazardous will be drummed, labeled, and managed for offsite disposal.

2.1.3 Liquid Wastes Liquid wastes include decontamination fluids such as isopropanol and water and monitoring well development and purging water. Liquid wastes may be disposed in one of the following ways.

1. Well-generated liquid IDW that are non-hazardous as defined by RCRA (see Appendix C for a discussion of identification of hazardous wastes) and are shown not to pose a risk to human health or the environment may be deposited on the ground near the generating well and allowed to percolate into the soil.
2. Liquid IDW from decontamination activities that are neither hazardous nor determined to pose a risk to human health or the environment may be discharged on the ground within the AOC at locations other than the point of generation.
3. RCRA non-hazardous liquid IDW that may pose a risk to human health or the environment must be containerized and transported to the facility-designated Navy-owned treatment works (NOTW). If the liquid wastes meet the NOTW acceptability criteria (see Subsection 3.2.2), they will be taken to a designated lift station for treatment in the NOTW. If the Field Operations Leader (FOL) cannot determine whether the liquid IDW meets NOTW criteria, the water must be containerized and analyzed to make that determination. If the liquid IDW meet the acceptability criteria, they will be discharged to the NOTW; otherwise, they will be managed in accordance with the Navy-approved disposal procedures.
4. Liquid IDW that are hazardous, as defined by RCRA, must be containerized and stored onsite until they can be transported to either the NOTW or the NAS Jacksonville PWC, Jacksonville, Florida. Containerized, hazardous liquid IDW should not be stored onsite for a period longer than 90 days to comply with RCRA requirements.

2.1.4 Drilling Mud Drilling mud is a sludge-like substance, consisting of both liquid and solid earthen constituents, that is used to facilitate rotary drilling operations. To properly manage this particular form of IDW, the FOL will follow the procedures discussed below.

Drilling mud should be containerized and temporarily stored at the location of generation. The mud containers must remain undisturbed to facilitate gravity

separation of solids and liquids. The liquid waste will then be decanted and treated as liquid IDW (Subsection 2.1.2). A sample of the remaining material in the container will be subjected to the Paint Filter Liquids Test (USEPA Method 9095) to determine whether or not free liquids are present in the waste. This procedure can readily be performed where the containerized drilling mud is located. If free liquids are not present in the remaining waste, then the material will be managed as solid earthen IDW (Subsection 2.1.3). If free liquids are present in the remaining waste, and if evidence suggests that the material is not a hazardous waste, then the remaining material may either be deposited with other bulk-stored solid earthen IDW, or mixed with a suitable, clean additive that will facilitate drying. The ratio of partially dewatered drilling mud to solid earthen IDW must not exceed 1:1. This process will ensure proper de-watering of the non-hazardous drilling mud waste and allow it to be disposed as solid earthen IDW. If it is hazardous, the mud will be drummed and stored at the AOC for further management by the Navy.

2.2 EQUIPMENT. The following sections describe the type of materials and equipment that will be used at NAS Cecil Field for handling IDW and outline responsibilities and transportation requirements.

2.2.1 Decontamination Pads Equipment to be decontaminated during the project may include drilling rigs, tools, monitoring equipment, respirators, sample containers, trucks or trailers, and laboratory equipment.

Three types of decontamination pads may be used.

- A portable decontamination trailer is used to decontaminate drilling rods and augers (see Figure 2-5). Rinsate is captured in the bottom of the trailer and managed as liquid IDW.
- A temporary field decontamination pit may be used to steam clean drill rigs or decontaminate field equipment (Figure 2-5). The pit must be plastic-lined and capable of capturing all rinsate. A berm is typically constructed with shallow soils acquired from the site. Rinsate is pumped out of the decontamination pad and managed as a liquid IDW.
- A decontamination station located at the field office may be used to decontaminate laboratory equipment, sample containers, respirators, and monitoring equipment. Decontamination fluids are collected in a drum and managed as a liquid IDW.

Detailed decontamination procedures are presented in the site-specific NAS Cecil Field Sampling and Analysis Plans.

2.2.2 Containers Most of the containers used onsite will be H- or F-type 55-gallon steel drums. The drums must be in compliance with U.S. Department of Transportation (USDOT), 49 Code of Federal Regulations (CFR) Part 173. Open head drums (H type) will be constructed of 16-gauge steel, top, bottom, and body, as a minimum. Tops will be secured with a 12-gauge bolt ring, bolt, nut, and a sponge rubber gasket. Closed head drums (F type) will be constructed of 18-gauge steel, top, bottom, and body, as a minimum. F-type drums will have two fittings in the top, 2-inch and 0.75-inch, one for filling and one for venting.

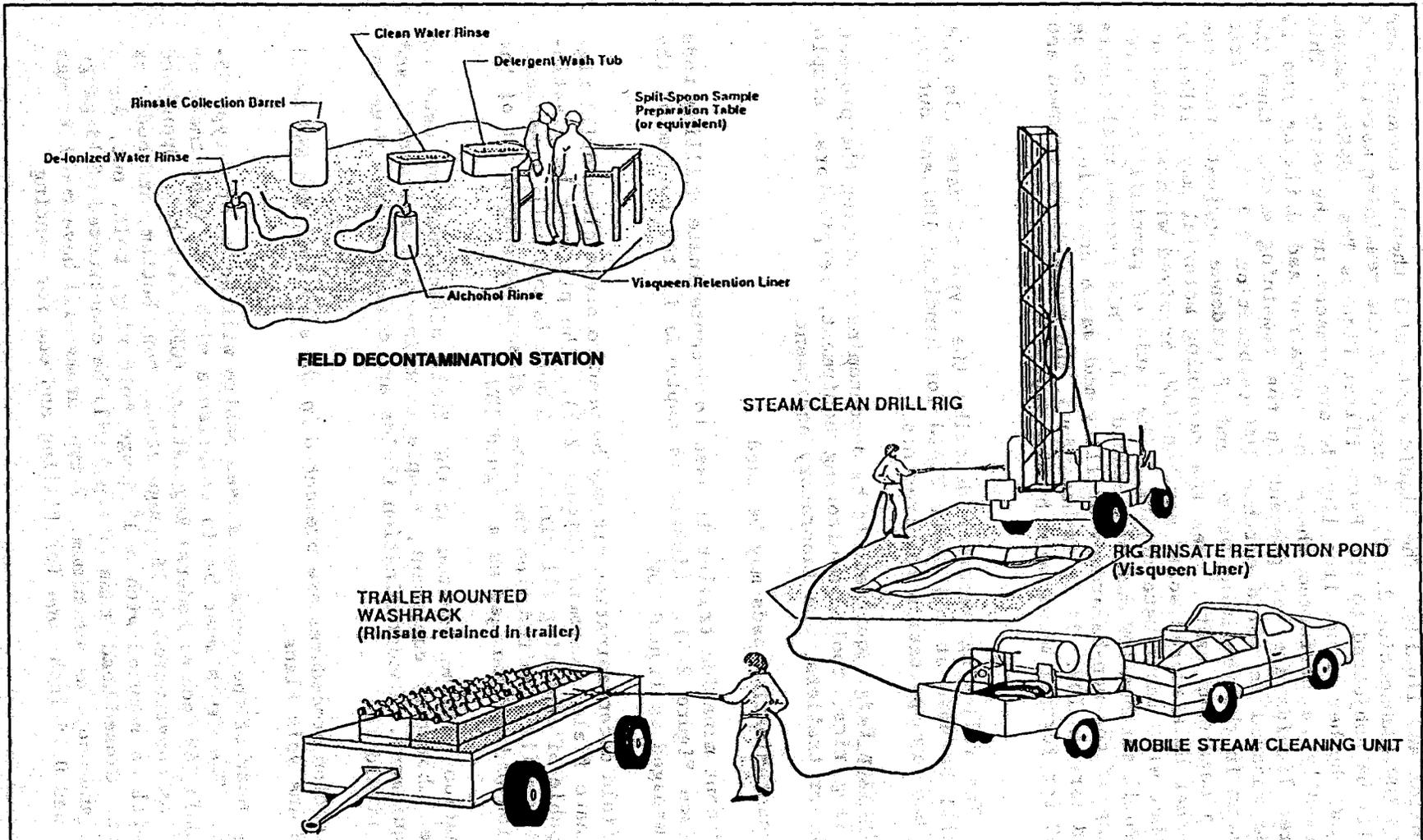
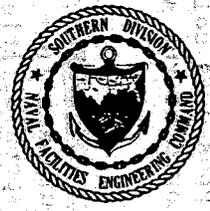


FIGURE 2-5
FIELD DECONTAMINATION METHODS



**INVESTIGATION - DERIVED
WASTE MANAGEMENT PLAN**

**NAS CECIL FIELD
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Other containers that may be used onsite for storage of liquid IDW include: a water truck or tanker, 300- to 1,000-gallon high density polyethylene (HDPE) tanks, and Baker tanks.

Other containers that may be used onsite for solid IDW storage include a dump truck, dumpster, or roll-off container.

2.2.2.1 Labels All drums containing IDW to be shipped offsite must be:

- staged on pallets on top of a Visqueen™ liner,
- surrounded by sand bags for secondary containment,
- provided with aisle space between drums,
- inventoried in detail, and
- labeled in accordance with USDOT requirements (HM-181).

Drummed material must be clearly marked with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) material, well number, and date containerized. Figure 2-6 illustrates two types of labels used to label drums, one for hazardous waste and one for non-hazardous waste.

2.2.2.2 Empty Drum Storage Empty drums must be rinsed to remove significant soil deposits and transported to a designated storage area. The drums must be stored in a manner that minimizes the area required while maintaining easy access. Drums must not be stacked greater than two in height. Lids must be secured on the drums to prevent rainfall intrusion.

2.3 CONCLUSIONS. The procedures outlined in this IDW plan will be used at NAS Cecil Field to minimize the amount of IDW generated and to remove those wastes that pose an immediate threat to human health or the environment. While managing IDW, the goal of the project team is also to minimize disturbance of the site created by IDW handling, transportation, and management.

**NON-
HAZARDOUS
WASTE**

OPTIONAL INFORMATION

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

CONTENTS _____

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

**IF FOUND CONTACT THE NEAREST POLICE
PUBLIC SAFETY AUTHORITY OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY.**

GENERATOR INFORMATION

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. _____ EPA WASTE NO. _____

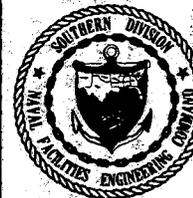
ACCUMULATION START DATE _____ MANIFEST DOCUMENT NO. _____

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

HAZARDOUS WASTE

**FIGURE 2-6
DRUM LABELS USED FOR IDW**



**INVESTIGATION - DERIVED
WASTES MANAGEMENT PLAN**

**NAS CECIL FIELD
JACKSONVILLE, FLORIDA**

3.0 DETERMINATION OF RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) HAZARDOUS OR NON HAZARDOUS WASTE

3.1 RESOURCE CONSERVATION AND RECOVERY ACT. RCRA, an amendment to the Solid Waste Disposal Act (SWDA) of 1965, was passed to protect human health and the environment, to conserve energy and natural resources, and to reduce or eliminate the generation of hazardous wastes. RCRA currently has 10 discrete sections (Subtitles) that address specific waste management activities. Two of these Subtitles, and their implementing regulations, may be ARARs for IDW handling: Subtitle C (Hazardous Waste Management) and Subtitle D (Solid Waste Management).

The RCRA Hazardous and Solid Waste Amendments (HSWA) of 1984 established LDRs for RCRA hazardous wastes and mixtures of RCRA hazardous wastes with other substances, including those regulated under the Toxic Substances Control Act (TSCA). Under RCRA regulations, restricted RCRA wastes may only be land disposed after treatment to specified levels. RCRA may be an ARAR for IDW handling if the IDW generated during the site inspections (SIs) or RIs contain RCRA hazardous wastes.

3.1.1 Land Disposal Restrictions Land disposal, as defined by RCRA Section 3004(k), includes placement of RCRA hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome, salt bed formation, underground mine, or cave. For LDR purposes, USEPA commonly uses "land disposal" and "placement" as synonymous terms.

To determine if LDRs are applicable to IDW management, it must be determined whether:

- the IDW are RCRA hazardous wastes,
- the RCRA hazardous waste is regulated under the LDRs, and
- the anticipated approach to IDW management constitutes "placement" (land disposal) of the generated wastes. (For the purpose of the LDRs, USEPA considers itself a waste generator when the response action involves treatment, storage, or disposal of RCRA hazardous wastes. If the SI or RI does not involve RCRA hazardous IDW generation or disposal, RCRA regulations are not triggered.)

LDRs apply only if the answer to all three questions is "yes." In some cases, LDRs may be "relevant and appropriate" even if not strictly applicable.

3.1.2 Area of Concern (AOC) Concept An important consideration in determining whether LDRs apply is whether land disposal of soil and sediment IDW has occurred. If IDW are merely being moved within the same AOC, USEPA does not consider "land disposal" to have occurred; therefore, LDRs are not triggered, even if the IDW contain RCRA hazardous material. Therefore, if IDW are being moved only within an AOC, they are not subject to LDRs.

A formal, regulatory definition of an AOC does not exist; however, the preamble to the NCP states that: "EPA generally equates the CERCLA area of contamination with a single RCRA land-based unit. . ." Furthermore, the preamble states that a "single RCRA land-based unit" can be a "non-discrete land area on or in which

there is generally dispersed contamination." The type and concentrations of contaminants may vary within a single AOC.

The AOC concept applies only to contaminated soil and sediments from the site under inspection. The AOC concept does not affect the approach for managing IDW that did not come from the AOC, such as PPE, DE, decontamination fluids, and groundwater. The latter materials, if RCRA hazardous, must be containerized and disposed offsite.

Thus, under the NCP, the AOC unit concept concludes the following.

- Land disposal does not occur when soil and sediment wastes are left in place, or moved, or stored within a single AOC unit.
- Leaving RCRA hazardous soil onsite within the AOC unit does not constitute disposal and does not trigger RCRA regulations, unless it is determined that the wastes would significantly increase risks to human health and the environment (e.g., fire or explosion) and must be disposed offsite.
- RCRA hazardous groundwater, decontamination fluids, PPE, and DE should be containerized and disposed at a permitted facility.
- Moving RCRA hazardous soils from one AOC to another AOC triggers the LDRs.
- Moving wastes outside of an AOC for treatment and storage and then returning the waste to the same or different AOC triggers the LDRs.
- Excavating a waste from an AOC, transferring it to a separate unit such as a tank, surface impoundment, or incinerator that is within the AOC, and then redepositing the waste into the AOC triggers the LDRs.

If IDW cannot be deposited within the delineated AOC, the FOL must comply with all appropriate LDRs. This means that the IDW will be further managed by the Navy.

3.1.3 Application of RCRA Requirements to IDW Management Generally, the RCRA storage regulations require a generator to: (1) place the IDW in containers or tanks, (2) satisfy the standards for containers or tanks, (3) clearly indicate the waste accumulation date on the containers, (4) mark the containers and tanks as "hazardous waste," and (5) comply with the requirements for owners and operators of hazardous waste treatment, storage, and disposal (TSD) facilities.

Offsite management of RCRA hazardous IDW may also involve treatment, storage, and disposal of RCRA hazardous wastes in accordance with all applicable guidelines. For TSD facilities constructed solely as part of a CERCLA response action, RCRA operating permits are not required.

IDW generated during the SI or RI may require onsite storage in containers while awaiting offsite disposal. Although CERCLA exempts response actions conducted entirely onsite from permit requirements (see CERCLA Section 121 (e)(1)), USEPA's policy is to follow the storage regulation practices required for RCRA generators who wish to avoid obtaining permits (40 CFR, Parts 240-280). These requirements

are applicable if the FOL determines that the containerized IDW are RCRA hazardous waste. RCRA hazardous IDW containerized and stored onsite must be properly disposed at or before the time of remediation. There are cases where this may not be possible and storage does not require a permit, although removal should be expedited as much as possible. Note that accumulation of IDW, even onsite, in units other than containers or tanks may result in creation of RCRA units that are subject to various RCRA requirements such as closure, permitting, and groundwater monitoring.

3.2 APPLICATION OF OTHER REQUIREMENTS TO IDW MANAGEMENT.

3.2.1 Toxic Substances Control Act (TSCA) RCRA nonhazardous IDW containing polychlorinated biphenyls (PCBs) or asbestos must, in certain circumstances, be disposed at facilities regulated under the TSCA. Although asbestos is not a common contaminant at CERCLA sites, PCBs may be found at CERCLA sites. Regulations governing the management of IDW containing PCBs that are generally based on PCB concentrations in waste are found in 40 CFR 761.60. TSCA requirements for handling PCBs require incineration, disposal in a TSCA chemical waste landfill, or destruction by using a TSCA-approved method that provides a level of performance equivalent to incineration.

Even though IDW containing PCBs alone are not RCRA hazardous wastes, IDW containing PCBs mixed with RCRA hazardous wastes are regulated under RCRA LDRs as part of the California list wastes. Because PCBs can be governed by RCRA and TSCA, it must be determined whether RCRA (in the case of PCBs mixed with RCRA wastes) or TSCA regulations, or both, are applicable.

3.2.2 Clean Water Act (CWA) The CWA addresses site-specific pollutant discharge limitations and performance standards for specified industries to protect surface water quality. RCRA hazardous wastewater can be disposed at publicly owned treatment works (POTW) that have an RCRA permit-by-rule and that meet the offsite policy criteria for a facility receiving RCRA hazardous waste. Disposal at a POTW of nonhazardous wastewaters from CERCLA sites is an option if the POTW is acceptable under USEPA's offsite policy. USEPA regulations cover general and specific prohibitions on discharges to POTWs.

The following criteria should be used in selecting an appropriate POTW facility.

- The POTW must comply with all applicable laws.
- The quantity and quality of the CERCLA IDW must be compatible with the POTW.
- The POTW must have no unpermitted "releases."
- The concentration of any hazardous substance must meet applicable pretreatment standards (CERCLA IDW cannot upset the facility's operation or violate the permit).
- The POTW must be in compliance with its National Pollutant Discharge Elimination System (NPDES) permit.

• The transport of IDW to the POTW and its placement in an impoundment must not create a potential for groundwater contamination.

A wastewater treatment plant located on a Naval facility is classified as an NOTW. Like a POTW, each NOTW is required to have an NPDES permit. However, USEPA regulations concerning CERCLA discharges to treatment plants address POTWs only. Therefore, the Navy's adherence to the above-listed criteria for using POTWs to discharge CERCLA wastes is optional. This does not relieve the Navy from adhering to ARARs, including RCRA.

3.2.3 State Requirements State ARARs present an array of specific problems for CERCLA sites because their goals and methods often differ from Federal environmental laws. CERCLA Section 121 and Section 300.400 (g) of the NCP provide that only those State standards that are promulgated, identified by the State in a timely manner, and more stringent than Federal requirements may generally be ARARs. To be considered "promulgated," a standard must be legally enforceable and of general applicability. A waiver is available if the State standard is applied only to CERCLA sites. Disposal of IDW must comply (to the extent practicable) with State promulgated and enforceable requirements that are more stringent than Federal requirements.

The Florida Administrative Code (FAC) are regulations developed by the State of Florida. The following chapters must be considered as possible ARARs for management of IDW:

- Chapter 17-3, FAC, Florida Water Quality Standards;
- Chapter 17-550, FAC, Florida Drinking Water Standards; and
- Chapter 17-730, FAC, Florida Hazardous Waste Rules.

Chapter 17-3, FAC, classifies groundwaters in Florida. Both aquifers at NAS Cecil Field, the shallow and Floridan, are classified as G-II, potable water use with total dissolved solids of less than 10,000 micrograms per liter ($\mu\text{g}/\ell$), and are therefore, subject to maximum contaminant levels. Chapter 17-550, FAC, was established to implement the Federal "Safe Drinking Water Act" by adopting the Federal primary and secondary drinking water standards and by creating additional rules to fulfill State and Federal requirements. Chapter 17-730, FAC, adopts by reference appropriate sections of 40 CFR and establishes minor additions and exceptions to these regulations concerning the generation, storage, treatment, transportation, and disposal of hazardous wastes.

To date, the State of Florida has not developed any regulations or guidance regarding the management of IDW. The State of Florida does recommend adherence to the Federal guidance for managing IDW. This plan is based on the Federal guidance for managing IDW.

4.0 POINTS OF CONTACT

This chapter describes key roles in the management of IDW at NAS Cecil Field and identifies key points of contact.

4.1 ORGANIZATION.

Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOCM). SOUTHNAVFACENGCOCM is responsible for establishing policy and guidance for the Comprehensive Long-Term Environmental Action, Navy (CLEAN) program. SOUTHNAVFACENGCOCM awards contracts, approves funding, and has primary control of report release and interagency communication.

NAS Cecil Field Installation Restoration Program Manager (IRPM). The base IRPM will coordinate and monitor IDW activities at NAS Cecil Field. The Environmental Coordinator (EC) will provide local support and be the primary point of contact with the hazard waste storage facility (HWSF) manager and the local, State, and Federal regulatory agencies.

Southern Division Engineer-in-Charge (EIC). The SOUTHNAVFACENGCOCM EIC is responsible for the technical and financial management of the IDW activities at NAS Cecil Field. The EIC will prepare the project statement of work; monitor project scope, schedule, and budget; and provide technical review and approval of all deliverables. Also, the EIC will authorize changes in the scope of work determined during Project Managers' meetings.

Task Order Manager (TOM). The ABB-ES TOM is the primary project contact with the EIC. He is responsible for:

- evaluating the appropriateness and adequacy of the technical and engineering services provided,
- financial and schedule management,
- ensuring that the project fulfills the contracted scope of work,
- implementing changes in the scope of work determined during Project Managers' meetings, and
- daily conduct of work, including integration of input from supporting disciplines and subcontracts.

FOL. The FOL is responsible for ensuring the field activities are performed consistent with the IDW plan. This will include appropriate documentation of all IDW disposed at NAS Cecil Field. Other responsibilities include oversight of IDW management activities and communication with the Technical Leader (TL) and TOM.

4.2 IDW MANAGEMENT POINTS OF CONTACT. The following is a list of phone numbers for NAS Cecil Field IDW management points of contact.

Navy CLEAN EIC	Alan Shoultz	(803) 743-0669
IRPM	John Dingwall	(904) 778-6495
Cecil Field HWSF Manager	Frank Sigona	(904) 778-5620
ABB-ES Task Order Manager	Jack Pittman	(904) 656-1293
ABB-ES Field Operations Leader	Maria Pijnenburg	(904) 269-7012
ABB-ES Field Cellular Phone	Field Operations Leader	(904) 868-0425
USEPA Project Manager	James Hudson	(404) 347-3016
PWC Jacksonville	Andy Long	(904) 772-4548
PWC Jacksonville	Gail Faelen	(904) 772-4548

REFERENCES

U.S. Environmental Protection Agency (USEPA), 1991, Management of Investigation-Derived Wastes During Site Inspections: EPA/SYO/G-91/009, May 1991.

USEPA, 1992, Guide to Management of Investigation-Derived Waste, Quick Reference Fact Sheet: Publication No. 9345.3-03FS.

APPENDIX A

NAS CECIL FIELD SITE DESCRIPTION CHART

Site No.	Operable Unit	Site Name/Size	Waste Type	Sources	Description of Activity
1	OU 1	Old Landfill (9 acres)	Solid waste, oils, fuels, paints, paint stripper, and solvents.	Industrial operations and shops.	Trench and fill landfill for commercial and residential wastes (solid and liquid).
2	OU 1	Recent Landfill (5 acres)	Solid waste, oils, fuels, paints, paint stripper, and solvents.	Industrial operations and shops.	Trench and fill landfill for commercial and residential wastes (solid and liquid).
3	OU 2	Oil and Sludge Disposal Pit (50 to 100 feet in diameter and 3 to 5 feet deep)	Waste fuels, oils, paints, paint strippers, and solvents.	Fuel farm; Aircraft Intermediate Maintenance Department (AIMD), squadrons, and public works shops.	At least four shallow pits were used to dispose of liquid wastes and sludge. Extent of contamination is much larger than originally anticipated.
4	NI	Grease Pits (9 acres)	Waste oils and greases.	Installation dining facilities and facility oil-water separators.	Multiple shallow pits excavated to dispose of liquid wastes (grease from dining facilities and waste oils from oil-water separators) and then covered with fill. Drums seen floating in pit; source of drums unknown. Extent of contamination larger than anticipated (22 acres). Chlorinated solvents have been detected in analytical samples of site soil and groundwater.
5	OU 2	Oil Disposal Area Northwest (100 feet in diameter)	Oil and fuel	Fuel farms	Shallow, unlined pit where liquid wastes were disposed (petroleum products present).
6	NI	Lake Fretwell Rubble Disposal Area (3.5 acres)	Inert rubble	Asphalt from demolition of the runway, building construction debris, lumber, scrap metal, and cut foliage.	Rubble disposed along banks of a low-lying marsh area by public works; some of the rubble has been overlain with soil and sod; additional rubble is uncovered.
7	OU 3	Old Firefighting Training Area (1/3 acre)	Waste fuels, oil, solvents, paint, and paint strippers.	Fuel farm, AIMD, squadrons, and public works shops.	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for firefighting training.
8	OU 3	Boresite Range, Hazardous Waste Storage Area, and Firefighting Training (6 acres)	Waste fuels, oil, solvents, paint, and paint strippers.	Fuel farm, AIMD, squadrons, and public works shops.	Burnable liquid wastes were poured onto metal objects (jets) in shallow, unlined pits and ignited for firefighting training. Boresite range was used for machine gun and small arms practice. 55-gallon drums of waste were stored at the site and were used as targets for practice.
9	NI	Recent Grease Pits (0.5 acre)	Grease mixed with water.	Installation messes.	Three shallow pits were used to dispose of kitchen grease; pits were used until full and then a new pit was excavated.

See notes at end of table.

Site No.	Operable Unit	Site Name/Size	Waste Type	Sources	Description of Activity
10	OU 4	Rubble Disposal Area (6.5 acres)	Inert rubble	Building demolition debris and runway debris.	Surface disposal area with debris (demolition, roadway, and metal); information is limited.
11	OU 6	Golf Course Pesticide Disposal Area (0.1 acre)	Pesticides, fungicides, herbicide containers, vehicles, and metal debris.	Golf course pesticide shop.	Between 200 and 400 empty 5-gallon cans containing pesticides were buried at the site; a limited number of unused containers of pesticides were buried in 1978.
12	NI	Public Works Rubble Disposal Area (0.5 acre)	Inert rubble, lumber, concrete, wire, cable, scrap metal, and drums.	Public works	Majority of rubble has been buried approximately 3 feet below ground surface, some rubble is above ground.
13	NI	Day Tank 2 Fuel Spill (1.5 acres)	JP-5 fuel	Day tank	Location of fuel spill in 1981; approximately 500,000 gallons of JP-5 fuel were spilled; approximately 250,000 gallons were recovered. A decision was made in 1987 to allow the fuel to naturally biodegrade.
14	OU 5	Blue 5 Ordnance Disposal Area (4.5 acres)	Fuses, 100-pound bombs, large munitions, lulu fuses, and other explosive materials.	Yellow water ordnance operations.	Ordnance disposal by open detonation or burning.
15	OU 5	Blue 10 Ordnance Disposal Area (10 acres)	Small arms, parachute and distress flares, Mark IV signal cartridges, rocket ignitors, CADS, and 5- and 2.75-inch rockets.	Yellow water ordnance operations.	Ordnance disposal by open detonation or burning.
16	OU 7	AIMD Seepage Pit (40x3x10 feet)	Solvents, heavy metals, acids, blasting grit, paint residue, and photo wastes.	Building 313, jet engine maintenance shop.	Seepage pit used to drain wastewater (containing solvents, paint, grease, and metals) generated from Building 313 operations into area soils; RCRA holding tank for wastewater is also located at Site 16; glass bead separator and associated piping also present.
17	OU 2	Oil and Sludge Disposal Pit Southwest (2 acres)	Waste fuels and oils.	Fuel farm	Unlined shallow disposal pit.
18	NI	Ammunition Disposal Area (0.1 acre)	Ammunition crates, and miscellaneous ordnance.	Magazine area	Waste material from a nearby magazine area were trucked in and dumped over the site during the 1940's until 1950. Reportedly, all munitions were removed. As of July 1993, live munitions were still present at site according to EOD personnel.
19	NI	Rowell Creek Rubble Disposal Area (3 acres)	Concrete, construction debris, trees, asphalt, mattresses, wood debris, and trash.	Construction and operations.	Limited information on disposal practices.

See notes at end of table.

Site No.	Operable Unit	Site Name/Size	Waste Type	Sources	Description of Activity
20	NI	Hazardous Waste Storage Facility	NI	NI	NI
21	NI	Golf Course Maintenance Area, near Building 98	Pesticides	Golf Course Maintenance Department.	Trucks and spray equipment for the distribution of pesticides on the golf course were rinsed on a concrete pad. Wash water was allowed to drain into the golf course tributary to Rowell Creek.
22	NI	Golf Course Fairway 7 Area	Pesticides and solid waste.	Golf Course Maintenance Department and other unknown sources.	Unknown; debris such as 5-gallon drums, scrap metal, concrete rubble, tin cans, etc., is visible on the surface.
23	NI	AVORD Site	NI	NI	NI
24	NI	Pistol Range Site	NI	NI	NI
25	NI	Building 81 Transformer Storage Yard	PCBs	NI	Several hundred transformers are currently stored on the ground surface at this site. Some 55 gallon drums are present.
26	NI	Building 81 DDT Site	DDT and pesticides.	Building 81 operations.	Building 81 is a pesticide storage building.
27	NI	Building 81 HAZMAT Shed	NI	NI	Site consists of a concrete pad with a roof constructed to prevent rain runoff.
28	NI	North TCP Site	NI	NI	NI
29	NI	Building 313 TCP Site	NI	NI	NI
30	NI	Building 313 (East by Power Plant)	NI	NI	NI
31	NI	South TCP Site	NI	NI	NI
32	NI	Supply Building 335 HAZMAT Storage Area	NI	NI	NI
33	NI	DRMO Storage Area	NI	NI	NI
34	NI	Rowell Creek Ordnance Disposal Area	NI	NI	NI
35	NI	PCBs on Perimeter Road	NI	NI	NI

Notes: NI = not identified.
EOD = explosive ordnance demolition.
PCBs = polychlorinated biphenyls.
DDT = dichlorodiphenyltrichloroethene.
HAZMAT = hazardous material.
TCP = temporary collection point.
DRMO = Defense Reutilization Management Office.

APPENDIX B

**MAXIMUM CONCENTRATIONS OF CONTAMINANTS
FOR THE TOXICITY CHARACTERISTIC**

Maximum Concentrations of Contaminants for the Toxicity Characteristic

<u>Waste Number</u>	<u>Hazardous Waste Description</u>	<u>Regulatory Level (mg/ℓ)</u>
D001	Ignitibility	-
D002	Corrosivity	-
D003	Reactivity	-
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin	0.02
D013	Lindane	0.4
D014	Methoxychlor	10.0
D015	Toxaphene	0.5
D016	2,4-D	10
D017	2,4,5-TP (Silvex™)	1.0
D018	Benzene	0.5
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D023	o-Cresol	200.0
D024	m-Cresol	200.0
D025	p-Cresol	200.0
D026	Cresol	200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D031	Heptachlor (and its epoxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D035	Methyl ethyl ketone	200
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl Chloride	0.2

Note: mg/ℓ = milligrams per liter.

APPENDIX C

IDENTIFICATION OF HAZARDOUS WASTE

IDENTIFICATION OF INVESTIGATION-DERIVED WASTES

To properly handle investigation-derived wastes (IDW), a reasonable effort must be made to determine if they are Resource Conservation and Recovery Act (RCRA) hazardous. A waste is an RCRA characteristic hazardous waste if it exhibits the characteristic of ignitibility, corrosivity, reactivity (as defined in 40 Code of Federal Regulations (CFR) Part 261, Subpart G, Section 261.21 through 261.24), or toxicity (toxicity characteristic leaching procedure [TCLP]) as described in 55 Federal Register [FR] 11796-11877, March 29, 1990).

IDW exhibit ignitibility if they are:

- a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and have a flash point lower than 60 degrees Celsius ($^{\circ}\text{C}$) or 140 degrees Fahrenheit ($^{\circ}\text{F}$);
- not a liquid and are capable, under standard temperature and pressure, of causing fire and, when ignited, create a hazard;
- an ignitable compressed gas as defined in 49 CFR 173.300; or
- an oxidizer as defined in 49 CFR 173.151.

IDW exhibit corrosivity if they are:

- aqueous and have a pH less than or equal to 2 or greater than or equal to 12.5, or
- a liquid and corrode steel at a rate greater than 6.35 millimeters (mm) (0.25 inch) per year at a test temperature of 55 $^{\circ}\text{C}$ (130 $^{\circ}\text{F}$).

IDW exhibit reactivity if they:

- are normally unstable and readily undergo violent change without detonating;
- react violently with water;
- form potentially explosive mixtures with water;
- generate toxic gases, vapors, or fumes when mixed with water that pose a danger to human health or the environment;
- a cyanide- or sulfide-bearing waste capable of (at the pH range of 2 to 12.5) generating toxic gases that can present a danger to human health or the environment;
- capable of detonation or explosive decomposition; or
- they are a forbidden explosive as defined in 49 CFR 173.51.

IDW exhibit TCLP-toxicity when their leachate contains certain contaminants at levels exceeding their regulatory thresholds. The TCLP has replaced the extraction procedure toxicity test for identifying RCRA characteristic wastes.