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NAS CECIL FIELD, FL
5090.3a

FINAL HAZARDOUS AND SOLID WASTE AMENDMENTS PERMIT WITH TRANSMITTAL
LETTER AND NOTICE OF DECISION NAS CECIL FIELD FL
8/29/2000
U S EPA REGION IV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 29 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-RCRA

Commanding Officer
Attn: Scott Glass, BEC
Department of the Navy
Southern Division
SOUTHNAVACENGOM
Mail Stop 18B12
P.O. Box 190010
North Charleston, South Carolina 29419-9010

SUBJ: Final Hazardous and Solid Waste Amendments (HSWA) Permit
Naval Air Station Cecil Field
United States Navy
EPA I.D. No. FL5 170 022 474

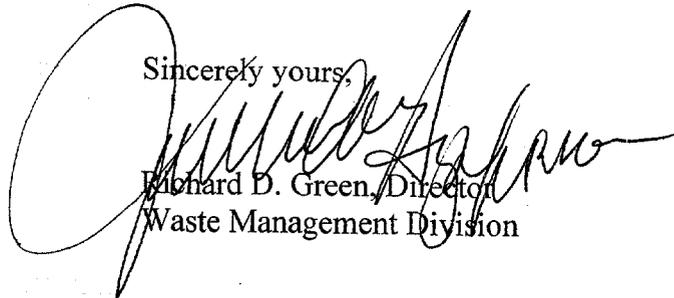
Dear Sir:

Enclosed with this letter is a permit issued to cover those portions of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA). Issuance of this permit is in accordance with 40 CFR §124.15. This HSWA Permit together with the Operating Permit issued by the State of Florida constitutes a full RCRA permit.

Because comments were received during the public comment period, the permit will become effective thirty (30) days after service of notice. As outlined in 40 CFR §124.19, any person who filed comments on the draft permit may petition the Administrator of the Environmental Protection Agency to review any condition of the permit decision. A description of the procedures to request an administrative review is enclosed.

If you have any questions concerning the permit or the appeal procedures, please contact Mr. Robert Morris at (404) 562-8470.

Sincerely yours,

A large, stylized handwritten signature in black ink, appearing to read "Richard D. Green".

Richard D. Green, Director
Waste Management Division

- Enclosures:
1. Notice of Final Permit Decision
 2. RCRA Permit (HSWA Portion only)
 3. Summary of Requirements for Notice of Appeal/Petition

cc: Satish Kastury, FDEP Tallahassee
Doug Outlaw, FDEP Tallahassee
Ashwin Patel, FDEP Jacksonville
Eric Nuzie, FDEP Tallahassee



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

Notice of RCRA Final Permit Decision

Facility Name: **Naval Air Station Cecil Field**

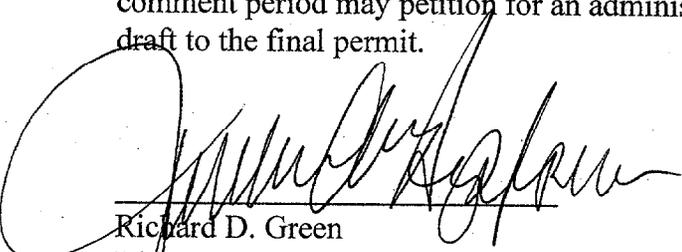
EPA I.D. Number: **FL5 170 022 474**

Location: **Jacksonville, Florida**

After due consideration of the facts applicable to the above facility as they appear in the administrative record and of the requirements and policies expressed in the Resource Conservation and Recovery Act (RCRA) and appropriate regulations, I have determined that the permit should be issued with no significant changes to the draft permit which was placed on public notice on March 15, 2000.

The administrative record, with respect to this determination, is maintained at the Agency's offices at 61 Forsyth St., S.W., Atlanta, Georgia 30303, and is available for public review between the hours of 8:15 a.m. and 4:30 p.m., Monday through Friday. For further information on this permit action, contact Doug McCurry at the above address.

Any person who filed comments on the draft permit or participated in a public hearing who wishes to appeal this decision of the EPA Region 4 Regional Administrator, must do so within 30 days of receipt of this notice. Any person who did not file comments during the public comment period may petition for an administrative appeal only to the extent of the changes from draft to the final permit.



Richard D. Green
Director
Waste Management Division

8/25/00
Date

SUMMARY OF REQUIREMENTS
FOR
NOTICE OF APPEAL / PETITION FOR REVIEW

Any person who files comments on the draft permit or participates in the public hearing on the draft permit may petition the Headquarters Hearing Clerk to review any condition of the permit decision. A person who did not file comments or participate in the public hearing on the draft permit may not petition for administrative review, except concerning those changes made from the draft to the final permit (e.g., new permit conditions that were not included in the draft permit).

The petition:

1. must be submitted within a 30-day period, beginning on the day after the Region serves notice of its permit decision, unless the notice specifies a later starting date for the 30-day period.
2. must contain a statement of the reasons supporting that review, including a demonstration that any issues raised in the petition were previously raised during the public comment period or public hearing and, when appropriate, a showing that the initial decision contains:
 - a. a finding of fact or conclusion of law which is clearly erroneous, or
 - b. an exercise of discretion or policy which is important and which the Administrator should review.
3. must be sent (an original and one copy) to the Headquarters Hearing Clerk, at the following address:

U.S. Environmental Protection Agency
Office of the Administrator
Environmental Appeals Board (A-101)
401 M Street, SW
Room 1145 (West Tower)
Washington, DC 20460

A copy of the Petition should also be sent to the Region IV Regional Administrator, at the following address:

U.S. Environmental Protection Agency
Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303



HSWA PORTION OF THE RCRA PERMIT

OWNER/OPERATOR: Naval Air Station, Cecil Field
United States Navy
Jacksonville, Florida

EPA I.D. No. FL5 170 022 474

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, 42 USC Section 6901 et seq., and the Hazardous and Solid Waste Amendments (HSWA) of 1984, P.L. 98-616, and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations), a Permit is issued to U.S. Navy, NAS Cecil Field (hereafter called the Permittee), who owns and operates a hazardous waste management facility located in Jacksonville, Duval Counties, Florida at latitude 30° 13' 24" N and longitude 81° 53' 12" W.

This Permit, in conjunction with the base RCRA Hazardous Waste Management Permit issued by the State of Florida, constitutes the full RCRA Permit for this facility. The Permittee, pursuant to this Permit, shall be required to investigate any releases of hazardous waste or hazardous constituents at the facility regardless of the time at which waste was placed in a unit and to take appropriate corrective action for any such releases. The State may assume administration of the full RCRA Permit after receiving authorization from EPA for all appropriate sections of the 1984 Amendments (i.e., HSWA) and after implementing enforceable HSWA requirements at the facility. The permittee, pursuant to this permit, shall be required to comply with the organic air emissions standards for tanks, surface impoundments and containers.

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein (including those in any attachments) and applicable regulations contained in 40 CFR Parts 260 through 264, 266, 268, 270, and 124 as specified in the Permit and statutory requirements of RCRA, as amended by HSWA. Nothing in this Permit shall preclude the Regional Administrator from reviewing and modifying the Permit at any time during its term in accordance with 40 CFR §270.41.

This Permit is based on the premise that information and reports submitted by the Permittee prior to issuance of this Permit are accurate. Any inaccuracies found in this information or information submitted as required by this Permit may be grounds for termination or modification of this Permit in accordance with 40 CFR §270.41, §270.42, and §270.43 and potential enforcement action. The Permittee must inform EPA of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or Permit conditions.

The authority to perform all actions necessary to issue, modify, enforce, or revoke this Permit has been delegated by the Regional Administrator to the Waste Management Division Director.

This Permit is effective 09/25/2000, and shall remain in effect for ten (10) years until 09/24/2010, unless revoked and reissued, or terminated under 40 CFR §270.41 and §270.43 or continued in accordance with 40 CFR §270.51(a). All obligations for performance of HSWA provisions required under this Permit are in effect until deemed complete by the Regional Administrator.

If any conditions of this Permit are appealed in accordance with 40 CFR §124.19, the effective date of the conditions determined to be stayed in accordance with 40 CFR §124.16 shall be determined by final agency action as specified under 40 CFR §124.19.

8/25/00
Issued Date

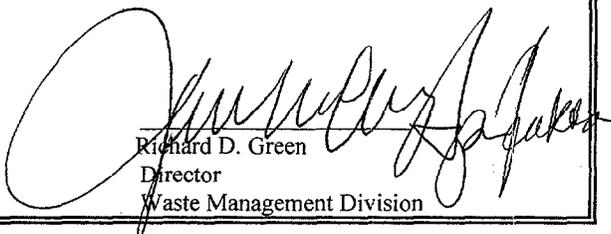

Richard D. Green
Director
Waste Management Division

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PART I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

Pursuant to 40 CFR §264.10, the requirements of this RCRA permit extend to all contiguous property under the control of the Permittee (see Appendix A for a map which demarks the property boundaries of land under the Permittee's control). Compliance with this RCRA Permit constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA except for those requirements not included in the Permit which become effective by statute, are promulgated under 40 CFR §268 restricting placement of hazardous waste in or on the land or are promulgated under 40 CFR §264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units, as specified in 40 CFR §270.4. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Section 3008(a), 3008(h), 3004(v), 3008(c), 3007, 3013 or Section 7003 of RCRA, Sections 104, 106(a), 106(e), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 *et seq.*, commonly known as CERCLA), or any other law providing for protection of public health or the environment.

I.B. PERMIT ACTIONS

This Permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§270.41, 270.42, and 270.43 except for the Corrective Action schedule of compliance which shall be modified in accordance with Condition II.I. of this Permit. The filing of a request for a Permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any Permit condition.

I.C. SEVERABILITY

The provisions of this Permit are severable, as specified in 40 CFR §124.16 and if any provision of this Permit or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

I.D. DUTIES AND REQUIREMENTS

I.D.1. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit. Any Permit noncompliance, other than noncompliance authorized by an emergency Permit, constitutes a violation of RCRA and is grounds for enforcement action, Permit termination, revocation and reissuance, modification, or denial of a Permit renewal application. Also, because compliance with agreements and schedules of this Permit is dependent upon the availability of funds, the Permittee shall properly request all necessary funds to ensure compliance with Permit conditions.

I.D.2. Duty to Reapply

If the Permittee will continue an activity allowed or required by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least one hundred eighty (180) calendar days before this Permit expires, unless permission for a later date has been granted by the Regional Administrator.

I.D.3. Obligation for Corrective Action

The Permittee is required to continue this Permit for any period necessary to comply with the corrective action requirements of this Permit.

I.D.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense, except possibly by force majeure, for the Permittee in an enforcement action that it would have been necessary to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.

I.D.5. Duty to Mitigate

In the event of noncompliance with the Permit, the Permittee shall take all reasonable steps to minimize releases of hazardous waste or hazardous constituents to the environment, and shall carry out such measures as are reasonable to prevent significant adverse effects on human health or the environment.

I.D.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the Permit.

I.D.7. Duty to Provide Information

The Permittee shall furnish to the Regional Administrator, within a reasonable time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this Permit.

I.D.8. Inspection and Entry

The Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this Permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of

this Permit;

- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated, or required under this Permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.D.9. Monitoring and Records

I.D.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative waste sample to be analyzed must be the appropriate method from Appendix I of 40 CFR §261, the EPA Region 4 Environmental Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP) (most recent version), or an equivalent method approved by the Regional Administrator. Procedures for sampling contaminated media must be those identified in the EPA Region 4 SOP or an equivalent method approved by the Regional Administrator. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, or an equivalent method approved by the Regional Administrator.

I.D.9.b. The Permittee shall retain at the facility, as provided for under 40 CFR §264, or other appropriate location as approved by the Regional Administrator, records of all monitoring information required under the terms of this Permit, including all calibration and maintenance records, records of all data used to prepare documents required by this Permit, copies of all reports and records required by this Permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this Permit for a period of at least three years from the date of the sample, measurement, report, certification or application, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittee shall retain a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to 40 CFR §268 for at least five years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

I.D.9.c. Records of monitoring information shall specify:

- i. The dates, exact place (may include Geographic Positioning System (GPS) information), and times of sampling, or measurements;
- ii. The individuals who performed the sampling or measurements;
- iii. The dates analyses were performed;
- iv. The name of the laboratory which performed the analyses;
- v. The analytical techniques or methods used; and
- vi. The results of such analyses.

I.D.10. Reporting Planned Changes

The Permittee shall give written notice to the Regional Administrator as soon as possible of any planned physical alterations or additions, including Permittee initiated Interim Measures under Condition II.F.1.b., which impact known or suspected contamination at or from SWMUs or AOCs referenced in Conditions II.A.1., II.A.3., II.A.4., and II.C. The notice shall include at a minimum, a summary of the planned change, the reason for the planned change, a discussion of the impact(s) the planned change will have on the ability to investigate contamination at or from the SWMU or AOC, and a discussion of the impact(s) the planned change will have on the known or suspected contamination.

I.D.11. Anticipated Noncompliance

The Permittee shall give advance notice to the Regional Administrator of any planned changes in the Permitted facility or activity which the Permittee reasonably expects may result in noncompliance with the requirements of this Permit.

I.D.12. Transfer of Permit

This Permit may be transferred to a new owner or operator only after notice to the Regional Administrator and only if it is modified or revoked and reissued pursuant to 40 CFR §270.40(b) or §270.41(b)(2) to identify the new Permittee and incorporate such other requirements as may be necessary under the appropriate Act. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post-closure care period, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR §§264 and 270, HSWA and this Permit.

I.D.13. Compliance Schedules

Written notification of compliance or noncompliance with any item identified in the compliance schedule of this permit shall be submitted according to each schedule date. If the Permittee do not notify the Regional Administrator within fourteen (14) calendar days of its compliance or noncompliance with the schedule, the Permittee shall be subject to an enforcement action. Submittal of a required item according to the schedule constitutes notification of compliance.

I.D.14. Twenty-four Hour Reporting

I.D.14.a.

The Permittee shall report any noncompliance or any imminent or existing hazard from a release of hazardous waste or hazardous constituents which may endanger human health or the environment. Any such information shall be reported orally to the Regional Administrator within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include:

- i. Information concerning the release of any hazardous waste or hazardous constituents which may endanger public drinking water supplies.
- ii. Information concerning the release or discharge of any hazardous waste or hazardous constituents, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

I.D.14.b.

The description of the occurrence and its cause shall include:

- i. Name, address, and telephone number of the owner or operator;

- ii. Name, address, and telephone number of the facility;
- iii. Date, time, and type of incident;
- iv. Name and quantity of materials involved;
- v. The extent of injuries, if any;
- vi. An assessment of actual or potential hazard to the environment and human health outside the facility; and
- vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.D.14.c. A written report shall also be provided to the Regional Administrator within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Conditions I.D.14.a. and b.; a description of the noncompliance or imminent hazard and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance or imminent hazard has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance or imminent hazard.

I.D.15. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time written reports as required by this Permit are submitted. The reports shall contain the information listed in Condition I.D.14. as appropriate.

The Permittee shall inform the Regional Administrator or his delegated representative by telephone and in writing if a force majeure event occurs which may delay performance of any obligation required under this Permit.

I.D.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in any document(s) submitted to the Regional Administrator, the Permittee shall promptly submit such facts or information.

I.E. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR §270.11.

I.F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this Permit in accordance with 40 CFR §270.12.

I.G. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR §§124, 260, 261, 264, and 270, unless this Permit specifically provides otherwise. Where terms are not defined in the regulation, the Permit, or EPA guidelines or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

- I.G.1. "Action levels" for the purposes of this Permit are health-based concentrations of hazardous constituents determined to be indicators for the protection of human health and/or the environment.
- I.G.2. The term "area of concern" (AOC) for purposes of this Permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Regional Administrator to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and 40 CFR §270.32(b)(2) in order to ensure adequate protection of human health and the environment.
- I.G.3.a. A "Corrective Action Management Plan" (CAMP) for the purposes of this Permit is primarily a schedule outlining the due dates for submittal of workplans or reports. It may also document other agreements between EPA and the Permittee which relate to this Permit.
- I.G.3.b. A "Corrective Action Management Unit" (CAMU) for purposes of this Permit, includes any area within a facility that is designated by the Regional Administrator under Part 264 Subpart S, for the purpose of implementing corrective action requirements under §264.101 and RCRA section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.
- I.G.4. "Corrective measures" for purposes of this Permit, include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR §264.101. Corrective measures may address releases to air, soils, surface water or groundwater.
- I.G.5. "Extent of contamination" for the purposes of this Permit is defined as the horizontal and vertical area in which the concentrations of hazardous constituents in the environmental media being investigated are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Regional Administrator.
- I.G.6. "Facility" for purposes of this Permit includes all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combination of them). For the purposes of implementing corrective action under §264.101, a facility includes all contiguous property under the control of the owner or operator seeking a Permit under Subtitle C of RCRA. The known facility boundary is shown on the map in Appendix A.

- I.G.7. "Force majeure" for the purposes of this Permit, is defined as any event arising from causes not foreseen and beyond the control of the Permittee that delays or prevents the timely performance of any obligation under this Permit despite the Permittee's best efforts to fulfill such obligation. The requirement that the Permittee exercise "best efforts to fulfill such obligation" shall include, but not be limited to, best efforts to anticipate any potential force majeure event and address it before, during, and after its occurrence, such that any delay or prevention of performance is minimized to the greatest extent possible. Force majeure does not include increased costs of the work to be performed under this Permit or financial inability to complete the work.
- I.G.8. A "hazardous constituent" for purposes of this Permit are those substances listed in 40 CFR §261 Appendix VIII and Part 264 Appendix IX or any substance deemed appropriate by the Regional Administrator.
- I.G.9. "Interim Measures" for purposes of this Permit are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.
- I.G.10. "Land Disposal" for purposes of this Permit and 40 CFR §268 means placement in or on the land except for a CAMU and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.
- I.G.11. "Landfill" for the purposes of this Permit includes any disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.
- I.G.12. A "release" for purposes of this Permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.
- I.G.13. "Remediation waste" for the purposes of this Permit includes all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under §264.101 and RCRA section 3008(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004(v) or 3008(h) for releases beyond the facility boundary.
- I.G.14. "Site Management Plan" (SMP) for the purposes of this Permit is equivalent to the CAMP.
- I.G.15. "Solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to Permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

- I.G.16. A "solid waste management unit" (SWMU) for the purposes of this Permit includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g. product or process spills).
- I.G.17. A "Temporary Unit" (TU) for the purposes of this Permit includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Regional Administrator, such units must conform to specific standards, and may only be in operation for a period of time as specified in this Permit.
- I.G.18. A "unit" for the purposes of this Permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

PART II - CORRECTIVE ACTION

II.A. APPLICABILITY

The Conditions of this Part apply to:

- II.A.1. The SWMUs and AOCs identified in Appendix A-1, a listing of all SWMUs and AOCs.
- II.A.2. The SWMUs and AOCs identified in Appendix A-2, where the remedy has been selected.
- II.A.3. The SWMUs and AOCs identified in Appendix A-3, which requires a remedial investigation or RFI/feasibility study or CMS.
- II.A.4. The SWMUs and AOCs identified in Appendix A-4, which require Confirmatory Sampling
- II.A.5. The SWMUs and AOCs identified in Appendix A-5, which require no further investigation under RCRA. Many of these SWMUs do require further action but will be address under the State of Florida 67-777.
- II.A.6. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means; as used in this Part of the Permit, the terms "discover", "discovery", or "discovered" refer to the date on which the Permittee either, (1) visually observes evidence of a new SWMU or AOC, (2) visually observes evidence of a previously unidentified release of hazardous constituents to the environment, or (3) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment;
- II.A.7. Contamination which has migrated beyond the facility boundary, if applicable. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Regional Administrator that, despite the Permittee's best efforts, as determined by the Regional Administrator, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases shall be required on a case-by-case basis.

II.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

- II.B.1. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any suspected new AOC as discovered under Condition II.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). The Regional Administrator may conduct, or require the Permittee to conduct, further assessment (i.e., Confirmatory Sampling) in order to determine the status of the suspected AOC. The Regional Administrator will notify the Permittee in writing of the final determination as to the status of the suspected AOC. If the Regional Administrator determines that further investigation of an AOC is required, the Permit will be modified in accordance with 40 CFR §270.41.
- II.B.2. The Permittee shall notify the Regional Administrator in writing, per Condition II.I.4 or within fifteen (15) calendar days of discovery, of any additional SWMU(s) as discovered under Condition II.A.4; or in accordance with the most recent Site management Plan schedule approved under Condition II.I.3.

II.B.3. The Permittee shall prepare and submit to the Regional Administrator, per Condition II.1.4 or within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition II.B.2. At a minimum, the SAR shall provide the following information:

- a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR §270.14(b)(19).
- b. Designation of type and function of unit(s).
- c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).
- d. Dates that the unit(s) was operated.
- e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the wastes.
- f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

II.B.4. Based on the results of the SAR, the Regional Administrator shall determine the need for further investigations at the SWMUs covered in the SAR. If the Regional Administrator determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. or II.D.2.

II.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES FROM SWMUs or AOCs

II.C.1. The Permittee shall notify the Regional Administrator in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, per Condition II.A.4; within fifteen (15) calendar days of discovery; or in accordance with the most recent Site Management Plan schedule approved under Condition II.1.3. Such newly discovered releases may be from SWMU(s) or AOCs identified in Condition II.A.2. or SWMU or AOCs identified in Condition II.A.4. for which further investigation under Condition II.B.4. was not required.

II.C.2. If the Regional Administrator determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b.

II.D. CONFIRMATORY SAMPLING (CS)

II.D.1. The Permittee shall prepare and submit a Confirmatory Sampling (CS) Work Plan for each unit identified under Condition II.A.4. The CS Work Plan shall be submitted within forty-five (45) calendar days from the effective date of this Permit. The CS Work Plan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a release has occurred. It should also address applicable requirements and affected media. In order to partly or wholly satisfy the CS requirement, previously existing data may be submitted with the work plan for the Regional administrator's consideration.

- II.D.2. Upon notification by the Regional Administrator, the Permittee shall prepare and submit a Confirmatory Sampling (CS) Work Plan for suspected AOCs per Condition II.B.1. or newly identified SWMUs per Condition II.B.4. The work plan shall be submitted within forty-five (45) calendar days of notification by the Regional Administrator that a CS Work Plan is required or in accordance with the most recent Site management Plan approved under Condition II.I.3. The CS Work Plan shall meet the basic requirements listed in Condition II.D.1.
- II.D.3. The CS Work Plan must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the CS Work Plan schedule in the letter approving the CS Work Plan. If the Regional Administrator disapproves the CS Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CS Work Plan's deficiencies and specify a due date for submission of a revised CS Work Plan, (2) revise the CS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CS Work Plan and notify the Permittee of the conditions.
- II.D.4. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Work Plan.
- II.D.5. The Permittee shall prepare and submit to the Regional Administrator in accordance with the schedule in the approved CS Work Plan, a Confirmatory Sampling (CS) Report identifying all SWMUs or AOCs that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data, and a summary and analysis of the data, that supports the above determination. If submittal of the CS Report coincides with submittal of the RFI Report, then the CS Report and the RFI Report may be combined into one submittal.
- II.D.6. Based on the results of the CS Report, the Regional Administrator shall determine the need for further investigations at the SWMUs or AOCs covered in the CS Report. If the Regional Administrator determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. The Regional Administrator will notify the Permittee of any no further action decision.

II.E. RCRA FACILITY INVESTIGATION (RFI)

II.E.1. RFI Work Plan(s)

- II.E.1.a. The Permittee shall prepare and submit to the Regional Administrator, per Condition II.I.4 or within ninety (90) calendar days of notification by the Regional Administrator or in accordance with the most recent Site Management Plan schedule approved under Condition II.I.3, an RFI Work Plan for those units identified under Condition II.B.4., Condition II.C.2., or Condition II.D.6. The RFI Work Plan(s) shall be developed to meet the requirements of Condition II.E.1.c.
- II.E.1.b. The RFI Work Plan(s) shall meet the requirements of Appendix B. The RFI Work Plan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of contamination and the potential pathways of contaminant releases to the air, soil, surface water, and groundwater. The Permittee must provide sufficient justification and associated documentation that a release is not probable or has already been characterized if a unit or a media/pathway associated with a unit (groundwater, surface water, soil, subsurface gas, or air) is not included in the RFI Work Plan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Regional Administrator. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix B. Such omissions or deviations are subject to the approval of the Regional Administrator. In addition, the scope of the RFI Work Plan(s) shall include all investigations necessary to ensure compliance with 40 CFR §264.101(c).

II.E.1.c. The RFI Work Plan(s) must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the RFI Work Plan schedule in the letter approving the RFI Work Plan(s). If the Regional Administrator disapproves the RFI Work Plan(s), the Regional Administrator shall either (1) notify the Permittee in writing of the RFI Work Plan's deficiencies and specify a due date for submission of a revised RFI Work Plan, (2) revise the RFI Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Work Plan, or (3) conditionally approve the RFI Work Plan and notify the Permittee of the conditions.

II.E.2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Work Plan(s) and Appendix B. The Permittee shall notify the Regional Administrator per Condition II.I.4 or at least twenty (20) days prior to any sampling activity.

II.E.3. RFI Reports

II.E.3.a. The Permittee shall prepare and submit to the Regional Administrator Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Work Plan(s) submitted under Condition II.E.1. The Draft RFI Report(s) shall be submitted to the Regional Administrator for review in accordance with the schedule in the approved RFI Work Plan(s). The Final RFI Report(s) shall be submitted to the Regional Administrator within thirty (30) calendar days of receipt of the Regional Administrator's final comments on the Draft RFI Report or in accordance with the most recent Site Management Plan schedule approved under Condition II.I.3. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a work plan for the final phase investigatory actions required based on the initial findings. Approval of the final phase work plan shall be carried out in accordance with Condition II.E.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

II.E.3.b. The Permittee shall prepare and submit to the Regional Administrator, along with the Draft and Final RFI Report(s), action levels for each of the hazardous constituents reported in Condition II.E.3.a. Action levels shall be calculated as specified in Appendix E of this Permit.

II.E.3.c. The Regional Administrator will review the RFI Report(s), including the action levels described in Condition II.E.3.b. The Regional Administrator shall notify the Permittee of the need for further investigative action if necessary and, if appropriate at this moment of the investigation, inform the Permittee, if not already notified, of the need for a Corrective Measures Study to meet the requirements of II.G and 40 CFR §264.101. The Regional Administrator will notify the Permittee of any no further action decision. Any further investigative action required by the Regional Administrator shall be prepared and submitted in accordance with a schedule specified by the Regional Administrator and approved in accordance with Condition II.E.1.d.

II.E.3.d. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Regional Administrator with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Regional Administrator in the RFI Work Plan approval letter or in accordance with the most recent Site Management Plan schedule approved

under Condition II.I.3. The Progress Reports shall contain the following information at a minimum:

- i. A description of the portion of the RFI completed;
- ii. Summaries of findings;
- iii. Summaries of any deviations from the approved RFI Work Plan during the reporting period;
- iv. Summaries of any significant contacts with local community public interest groups or State government;
- v. Summaries of any problems or potential problems encountered during the reporting period;
- vi. Actions taken to rectify problems;
- vii. Changes in relevant personnel;
- viii. Projected work for the next reporting period; and
- ix. Copies of daily reports, inspection reports, data, etc.

II.F. INTERIM MEASURES (IM)

II.F.1. IM Work Plan

- II.F.1.a. Upon notification by the Regional Administrator, the Permittee shall prepare and submit an Interim Measures (IM) Work Plan for any SWMU or AOC which the Regional Administrator determines is necessary. IM are necessary in order to minimize or prevent the further migration of contaminants and limiting actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Work Plan shall be submitted within thirty (30) calendar days of such notification or in accordance with the most recent Site Management Plan schedule approved under Condition II.I.3 and shall include the elements listed in II.F.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this Permit.
- II.F.1.b. The Permittee may initiate IM at a SWMU or AOC by submitting the appropriate notification pursuant to Condition I.D.10. The Regional Administrator will process Permittee initiated IM by either conditionally approving the IM or imposing an IM Work Plan per Condition II.F.1.a. Permittee initiated IM shall be considered conditionally approved within thirty (30) calendar days of receipt of notification of the Permittee initiated IM. The scope and success of Permittee initiated IM conditionally approved per Condition II.F.1.b. shall be subject to subsequent in-depth review; the Regional Administrator will either comment on or approve the Permittee initiated IM. Permittee initiated IM must follow the progress and final reporting requirements in Condition II.F.3.
- II.F.1.c. The IM Work Plan imposed under Condition II.F.1.a. shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into any long-term solution at the facility. The IM Work Plan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.
- II.F.1.d. The IM Work Plan imposed under Condition II.F.1.a. must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan. If the Regional Administrator disapproves the IM

Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the IM Work Plan's deficiencies and specify a due date for submission of a revised IM Work Plan, (2) revise the IM Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Work Plan, or (3) conditionally approve the IM Work Plan and notify the Permittee of the conditions.

II.F.2. IM Implementation

II.F.2.a. The Permittee shall implement the interim measures imposed under Condition II.F.1.a. in accordance with the approved IM Work Plan.

II.F.2.b. The Permittee shall give notice to the Regional Administrator as soon as possible of any planned changes, reductions or additions to the IM Work Plan imposed under Condition II.F.1.a. or initiated by the Permittee under Condition II.F.1.b.

II.F.2.c. Final approval of corrective action required under 40 CFR §264.101 which is achieved through interim measures shall be in accordance with 40 CFR §270.41 and Condition II.H. as a Permit modification.

II.F.3. IM Reports

II.F.3.a. If the time required for completion of interim measures imposed under Condition II.F.1.a. or initiated by the Permittee under Condition II.F.1.b. is greater than one year, the Permittee shall provide the Regional Administrator with progress reports at intervals specified in the approved Work Plan or semi-annually for Permittee initiated interim measures or in accordance with the most recent Site Management Plan schedule approved under Condition II.I.3. The Progress Reports shall contain the following information at a minimum:

- i. A description of the portion of the interim measures completed;
- ii. Summaries of findings;
- iii. Summaries of any deviations from the IM Work Plan during the reporting period;
- iv. Summaries of any problems or potential problems encountered during the reporting period; and
- v. Projected work for the next reporting period.

II.F.3.b. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of completion of interim measures conducted under Condition II.F., an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

- i. A description of interim measures implemented;
- ii. Summaries of results;
- iii. Summaries of all problems encountered;
- iv. Summaries of accomplishments and/or effectiveness of interim measures; and
- v. Copies of all relevant laboratory/monitoring data, etc., in accordance with Condition I.D.9.c.

II.G. CORRECTIVE MEASURES STUDY

II.G.1. Corrective Measures Study (CMS) Work Plan

II.G.1.a. The Permittee shall prepare and submit a CMS Work Plan for those units requiring a CMS per Condition II.A.3. or within ninety (90) calendar days of notification by the Regional Administrator that a CMS is required. This CMS Work Plan shall be developed to meet the requirements of Condition II.G.1.b. The Permittee may seek approval from the Regional Administrator for concurrent RFI/CMS. The CMS may be performed concurrently with the RFI process if the Regional Administrator determines that sufficient investigative details are available to allow concurrent action.

II.G.1.b. The CMS Work Plan shall meet the requirements of Appendix C at a minimum. The CMS Work Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit deleted from the CMS Work Plan. Such deletion of a unit is subject to the approval of the Regional Administrator. The CMS shall be conducted in accordance with the approved CMS Work Plan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject to the approval of the Regional Administrator. The scope of the CMS Work Plan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR §264.101, §264.552, and §270.32(b)(2). The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition II.A.5.

II.G.1.c. The Regional Administrator shall either approve or disapprove, in writing, the CMS Work Plan. If the Regional Administrator disapproves the CMS Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CMS Work Plan's deficiencies and specify a due date for submittal of a revised CMS Work Plan, (2) revise the CMS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Work Plan and notify the Permittee of the conditions. This modified CMS Work Plan becomes the approved CMS Work Plan.

II.G.2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Work Plan, no later than fifteen (15) calendar days after the Permittee has received written approval from the Regional Administrator for the CMS Work Plan or in accordance with the most recent Site Management Plan schedule under Condition II.I.3. Pursuant to Permit Condition II.G.1.b. the CMS shall be conducted in accordance with the approved CMS Work Plan.

II.G.3. CMS Report

II.G.3.a. The Permittee shall prepare and submit to the Regional Administrator a draft and final CMS Report for the study conducted pursuant to the approved CMS Work Plan and in accordance with Appendix C. The draft CMS Report shall be submitted to the Regional Administrator in accordance with the schedule in the approved CMS Work Plan. The final CMS Report shall be submitted to the Regional Administrator per Condition II.I.4 or within thirty (30) days of receipt of the Regional Administrator's final comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. If a remedial alternative requires the use of a CAMU, the CMS report shall include all information necessary to establish and implement the CAMU. The CMS Report shall present all information gathered under the approved CMS Work Plan. The CMS Final Report must contain adequate information to support the Regional Administrator's decision on the recommended remedy, described under Permit Condition II.H.

II.G.3.b. If the Regional Administrator determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition II.G.3.a., the Regional Administrator may disapprove the CMS Final Report. If the Regional Administrator disapproves the CMS Final Report, the Regional Administrator shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date for submittal of a revised CMS Final Report. The Regional Administrator will notify the Permittee of any no further action decision.

II.G.3.c. As specified under Permit Condition II.G.3.b., based on preliminary results and the CMS Final Report, the Regional Administrator may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

II.H. REMEDY APPROVAL AND PERMIT MODIFICATION

II.H.1. A remedy shall be selected from the remedial alternatives evaluated in the CMS. It will be based at a minimum on protection of human health and the environment, as per specific site conditions and existing regulations. The selected remedy may include any interim measures implemented to date.

II.H.2. Pursuant to 40 CFR §270.41, a Permit modification will be initiated by the Regional Administrator after recommendation of a remedy under Condition II.H.1. This modification will serve to incorporate a final remedy, including a CAMU if necessary, into this Permit.

II.H.3. SELECTED REMEDY

For those units identified in Condition II.A.1. as requiring Corrective measures, the Permit incorporates, by reference, the following document as the CAP for the referenced SWMUs:

'Base Wide Generic Work Plan, Volumes I and II for Naval Air Station Cecil Field, October 1998.'

Feasibility Studies prepared for Southern Division, Naval Engineering Command, North Charleston, South Carolina, for Operable Units 1, 2, 3, 5, 6, 7, 8, and 9.

- ABB-ES, 1995b. Feasibility Study, Operable Unit 2, NAS Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina (July) (aka SWMU 2)
- ABB-ES. 1997a. Feasibility Study, Operable Unit 3, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina (August) (aka SWMUs 7 and 8)
- ABB-ES. 1997b. Feasibility Study, Operable Unit 5, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina. (November) (aka SWMUs 14 and 15)
- ABB-ES. 1998. Feasibility Study, Operable Unit 6, Site 11, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina (February) (aka SWMU 11)
- ABB-ES. 1995c. Feasibility Study, Operable Unit 7, NAS Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina (August) (aka SWMU 16)
- ABB-ES. 1997a. Feasibility Study, Operable Unit 8, NAS Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina. (aka SWMU 3)
- TTNUS. June 1999. Draft Feasibility Study for Site 36 and Site 37, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina. (aka SWMUs 36 and 37)
- ABB-ES. 1995. Feasibility Study for Operable Unit 1, NAS Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVENGCOM, North Charleston, South Carolina. (aka SWMUs 1 and 2).

These documents were submitted to EPA pursuant to CERCLA , as amended by SARA.

II.H.4. For those units identified in condition II.A.1., as requiring Corrective Measures, where the remedy has been selected the Permit incorporates, by reference the following documents regarding remedy selection:

These documents were submitted to EPA pursuant to CERCLA and presents the selected remedies for those units identified in Condition II.A.1 and II.A.2.

- September 1995, Record of Decision, Operable Unit 1, Naval Air Station Cecil Field, Jacksonville, Florida, and any amendments to the ROD or other changes (aka SWMUs 1 and 2)
- 1994, Naval Air Station Cecil Field, Jacksonville, Florida, Interim Record of Decision, Oil Disposal Area, Northwest, Site 5, Operable Unit 2; and any amendments to the ROD or other changes (aka SWMUs 5)
- Naval Air Station Cecil Field, Jacksonville, Florida, Interim Record of Decision, Oil and Sludge Disposal area Southwest, Site 17, Operable Unit 2; and any amendments to the ROD or other changes (aka SWMU 17)
- September 1995, Record of Decision, Operable Unit 2, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMUs 5 and 17)
- February 1999, Record of Decision, Site 7, Operable Unit 3, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 7)
- August 1999, Record of Decision, Site 8, Operable Unit 3, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes;
- September 1997, Record of Decision, Operable Unit 4, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 10)
- July 1998, Record of Decision, Site 14, Operable Unit 5, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 14)
- August 1994, Interim Record of Decision, Golf Course Pesticide Disposal Area, Site 11, Operable Unit 6, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 11)
- September 1998, Record of Decision for Operable Unit 6, Site 11, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 11)
- September 1998, Record of Decision, Site 3, Operable Unit 8 for Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 3)
- July 1996, Record of Decision, Operable Unit 7, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 16)
- March 1994, Interim Record of Decision, Operable Unit 7, Site 16, Naval Air Station Cecil Field, Jacksonville, Florida; and any amendments to the ROD or other changes (aka SWMU 16)

II.H.5. For those units identified in Condition II.A.2., the selected remedy is that remedy which is set forth in the Record of Decisions (ROD) and any amendments to these RODs or other changes.

II.H.6. For those units identified in Condition II.A.2., implementation, completion and approval by EPA of the selected remedy pursuant to requirements of CERCLA and to the requirements of the 23 October 1990, Federal Facilities Agreement which relate to releases or potential releases from those units shall satisfy the requirements of 40 CFR §264.101.

II.I. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

III.1. If at any time the Regional Administrator determines that modification of the Corrective Action Schedule of Compliance is necessary, the Regional Administrator may initiate a modification to the Schedule of Compliance (Appendix D).

II.I.2. Modifications that are initiated and finalized by the Regional Administrator will be in accordance with the applicable provisions of 40 CFR §270. The Permittee may also request a Permit modification in accordance with 40 CFR §270 to change the Schedule of Compliance.

II.I.3. At Permit effectiveness, the Permittee may submit a Site Management Plan (SMP) subject to review and approval by EPA which may be used as an alternative to the schedule in Appendix D. The SMP shall follow the terms outlined in the Federal Facilities Agreement, Section XXIII, dated October 23, 1990.

When the Permit modification is completed, the newly updated SMP shall replace the former SMP and shall be attached to Appendix D. The schedules in the SMP do not restrict the Regional Administrator's ability to establish submittals per this part of the Permit (Part II). If there is a conflict between the SMP and the Permit schedule, the Permit established schedule will take precedent.

II.I.4. The Regional Administrator may grant scheduled due date extensions to due dates listed in the current SMP or to due dates listed in notification letters from the Regional Administrator based on the Permittee's demonstration that sufficient justification for the extension exists.

Per the Federal Facilities Agreement between EPA, FDEP and the Navy dated October 23, 1990, either a timetable and deadline or a schedule shall be extended upon receipt of a timely request for extension and when good cause exists for the requested extension. Any request for extension by the Navy shall be submitted in writing and shall specify:

1. The timetable and deadline or the schedule that is sought to be extended;
2. The length of the extension sought;
3. The good cause(s) (as defined in the FFA) for the extension; and
4. Any related timetable and deadline or schedule that would be affected if the extension were granted.

Similarly, extension of due dates which the Permit explicitly defines as being due by a certain time or during a certain time interval (e.g., a specific number of days after comment by the Regional Administrator, a specific number of days from discovery, annually, etc.) may be granted by the Regional Administrator based on the Permittee's demonstration sufficient justification exists. However, an extension to these Permit established schedules shall follow Condition II.I.2 or the Federal Facilities Agreement, Section XXIV and VII.

II.J. WORK PLAN AND REPORT REQUIREMENTS

II.J.1. All work plans and schedules shall be subject to approval by the Regional Administrator prior to implementation to assure that such work plans and schedules are consistent with the requirements of this

Permit and with applicable regulations. The Permittee shall revise all submittals and schedules as specified by the Regional Administrator. Upon approval the Permittee shall implement all work plans and schedules as written.

II.J.2. All work plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Regional Administrator based on the Permittee's demonstration that sufficient justification for the extension exists.

II.J.3. If the Permittee or RA at any time determines that the SAR information required under Condition II.B., the CS Work Plan under Condition II.D., RFI Work Plan(s) required under Condition II.E., IM Work Plan under Condition II.F., or SMP information required under Condition II.I no longer satisfy the requirements of 40 CFR §264.101 or this Permit for prior or continuing releases of hazardous waste or hazardous

constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended Work Plan(s) to the Regional Administrator within ninety (90) calendar days of such determination. All reports shall be signed and certified in accordance with 40 CFR §270.11.

- II.J.4. Where applicable, cleanup under RCRA Corrective Action or through CERCLA Activities must satisfy the requirements of both RCRA and CERCLA. Therefore, the RCRA Corrective Action may be deferred, per the above, to CERCLA for oversight (including review and approval) of cleanup activities of facility SWMUs.
- II.J.5. Three (3) copies of all reports and work plans shall be provided by the Permittee to the Regional Administrator in care of the Federal Facilities Branch Chief and the Florida Department of Environmental Protection at the following addresses:

Chief, Federal Facilities Branch
Waste Management Division
U.S. Environmental Protection Agency
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Florida Department of Environmental Protection
Bureau of Waste Cleanup
MS 4535
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

II.K. APPROVAL/DISAPPROVAL OF SUBMITTALS

The Regional Administrator will review the work plans, reports, schedules, and other documents ("submittals") which require the Regional Administrator's approval in accordance with the conditions of this Permit. The Regional Administrator will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. Condition II.L. shall apply only to submittals that have been disapproved and revised by the Regional Administrator, or that have been disapproved by the Regional Administrator, then revised and resubmitted by the Permittee, and again disapproved by the Regional Administrator.

II.L. DISPUTE RESOLUTION

Resolution of Disputes shall be conducted in accordance with Section XXVI of the FFA or this Section of the Permit. Notwithstanding any other provision in this Permit, in the event the Permittee disagrees, in whole or in part, with the Regional Administrator's revision of a submittal or disapproval of any revised submittal required by the Permit, the following may, at the Permittee's discretion, apply:

- II.L.1.a. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Regional Administrator in writing within thirty (30) days of receipt of the Regional Administrator's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth the specific matters in dispute, the position the Permittee asserts should be adopted as consistent with the requirements of the Permit, the basis for the Permittee's position, and any matters considered necessary for the Regional Administrator's determination.
- II.L.1.b. The Regional Administrator and the Permittee shall have an additional thirty (30) days from EPA's receipt of the notification provided for in Condition II.L.1.a. to meet or confer to resolve any disagreement.
- II.L.1.c. In the event agreement is reached, the Permittee shall comply with the terms of such agreement or if appropriate submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.
- II.L.1.d. If agreement is not reached within the thirty (30) day period, the Regional Administrator will notify the Permittee in writing of his/her decision on the dispute, and the Permittee shall comply with the terms and conditions of the Regional Administrator's decision in the dispute. For the purposes of this provision in this Permit, the

responsibility for making this decision shall not be delegated below the Waste Management Division Director.

- II.L.1.e. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the Permit that the Regional Administrator determines are not affected by the dispute.

II.M. RCRA AND CERCLA REQUIREMENTS

The main purpose of RCRA corrective action and CERCLA is to ensure that the environmental impacts associated with past and present releases of hazardous constituents, pollutants or contaminants at or from the facility, including such releases and threats of release at or from SWMUs at the facility, are investigated and appropriate response action is taken, as necessary to protect the public health, welfare and the environment. EPA's position is that these two corrective action program can defer cleanup activities to the other program with expectation that no further cleanup will be required under the deferring program. Therefore, review of all planning reports and resulting documents, required or submitted under conditions II.D (CS), II.E(RFI),II.F(IM) or II.G (remedy approval), is being deferred to CERCLA. Compliance with the CERCLA cleanup process and requirements will completely satisfy the requirements under conditions II.D, II.E, II.F and II.G.

PART III - LAND DISPOSAL RESTRICTIONS

III.A. GENERAL RESTRICTIONS

- III.A.1. 40 CFR §268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR §268. Where the Permittee has applied for an extension, waiver or variance under 40 CFR §268, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

III.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

- III.B.1. A restricted waste identified in 40 CFR §268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR §268 Subparts C and/or D are met.
- III.B.2. The storage of hazardous wastes restricted from land disposal under 40 CFR §268 is prohibited unless the requirements of 40 CFR §268 Subpart E are met.

PART IV - ORGANIC AIR EMISSIONS REQUIREMENTS

IV.A. GENERAL INTRODUCTION

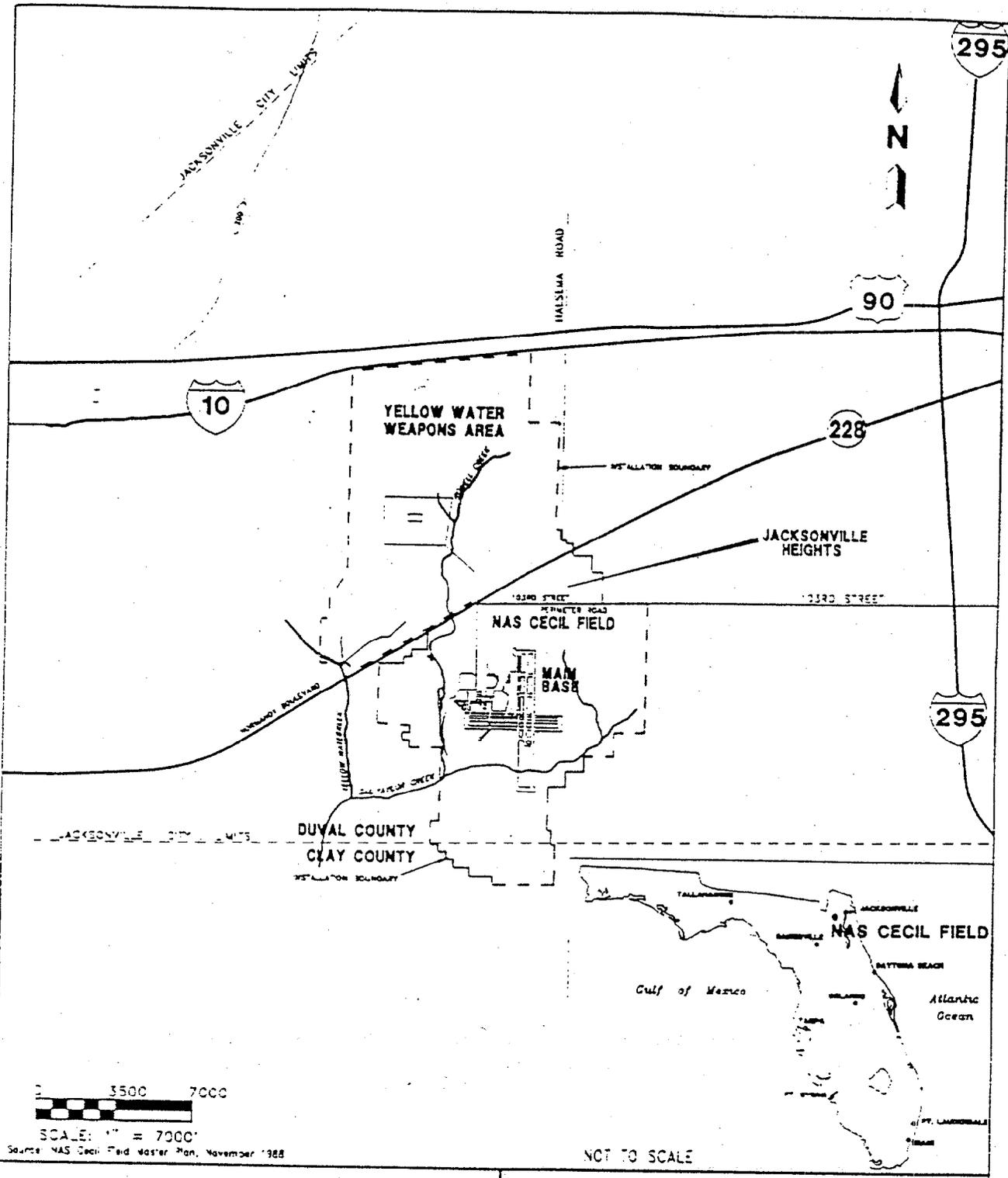
On December 6, 1994, EPA published the final rule for Phase II Organic Air Emissions Standards (40 CFR Parts 264 and 265, Subpart CC) for hazardous waste treatment, storage, and disposal facilities, including certain hazardous waste generators accumulating waste on-site in RCRA permit-exempt (90-day) tanks and containers. In general, under these standards air emissions controls must be used for tanks, surface impoundments, containers and miscellaneous units which contact hazardous waste containing an average organic concentration greater than 500 ppmw at the point of origination determined by the procedures outlined in 40 CFR § 264.1083(a), except as specifically exempted under 40 CFR § 264.1080 and § 264.1082.

IV.B. ORGANIC AIR EMISSION STANDARDS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to 40 CFR Part 264, Subpart CC, or modifying an existing process, waste handling or tank or container such that the unit(s) will become subject to 40 CFR Part 264 Subpart CC, the Permittee shall apply for a permit modification under § 270.42, and provide specific Part B application information required under 40 CFR §§ 270.14-17 and § 270.27, as applicable, with the modification request.

APPENDIX A

**Summary of Solid Waste Management Units
and Areas of Concern**



GENERAL LOCATION MAP



**BRAC ENVIRONMENTAL
BASELINE SURVEY**

**NAS CECIL FIELD
JACKSONVILLE, FLORIDA**

A.1. Total List of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Located at NAS Cecil Field, Jacksonville, Florida			
Original SWMU designation	New SWMU designation	Site Name	Status
A	1	Site 1 - Old landfill OU 1	Record of Decision, date: 10/02/95 Long-Term monitoring
B	2	Site 2 - recent landfill OU 1	Record of Decision, date: 10/02/95 Long-Term monitoring
C	3	Site 3 - Oil/sludge disposal pit OU 8	Record of Decision date: 9/30/98 Air Sparging w/Natural Attenuation
D	4	Site 4-Grease Pits	Technical Memorandum for NFA completed, date: 3/24/98
E	5	Site 5 - Oil disposal area, NW OU 2	Record of Decisions, dates: 09/30/94; 06/24/96; RA in progress ¹
	6	PSC 6- Lake Fretwell Rubble Disposal Area	Removal Action completed
F	7	Site 7 - Old fire fighting training area OU 3	ROD: 2/1999 Long Term Monitoring Source Soil Removal Completed.
G	8	Site 8 - Boresite range/hazardous waste storage area/fire fighting training area. OU 3	ROD: 8/25/99 Monitored Natural Attenuation
	9	Site 9-Recent Grease Pits	Technical Memorandum for NFA completed, date: 8/31/98
	10	Site 10 - Construction/Rubble Piles OU 4	Record of Decision dated: Sept. 1997
H	11	Site 11 - Golf course pesticide disposal area OU 6	IROD Date: 09/14/94 IRA complete; Record of Decision date: 9/30/98 Soil excavation completed and LTM
	12	Site 12-Public Works Rubble Disposal Area	Technical Memorandum for NFA completed, date: 10/1/98

I	13	Site 13- Day Tank 1 Fuel Spill (Aka Facility 293)	Remedial Action Plan approved, date: 3/3/98 ¹
J	14	Site 14-Blue 5 Ordnance Disposal Area	Record of Decision date: 9/30/98. No Further Action
K	15	Site 15 - Blue 10 Ordnance Disposal Area (aka OU5)	RI/baseline risk assessment completed/ feasibility study being amended
L	16	Site 16 - AIMD Seepage Pit OU 7	Record of Decisions, dates: 03/31/94; 09/16/96; 4/19/99 RA in progress ¹
M	17	Site 17 - Oil sludge disposal pit, SW	IRA complete; Record of Decision, date: 09/30/94; 06/24/96 MNA in progress
N	18	Site 18-Ammunition Disposal Area	Tech. Memo. Approved 11/30/98. No Further Action
	19	Site 19-Rowell Creek Rubble Disposal Area	Technical memorandum approved 12/10/98 ² No Further Action
	20	PSC 20 - Hazardous Waste Storage Facility (includes facility 610)	Subpart B facility
	21	Golf Course Maintenance Area (Building 238); (aka PSC 21); Facility 371: storage shed; Facility 874: public toilet; Facility 397: golf course storage Facility; and Facility 398: golf course storage Facility	SAR 2/99; Further evaluation needed; pesticides & arsenic in soil/gw ²
	22	Golf Course Fairway 7 Disposal Area, AOI 22	SAR required ²
	23	Aviation Ordnance Site; AOI 23	SAR: 10/30/98 ²
	24	Pistol Range Site (including parcel 508); AOI 24	²
	25	Former transformer storage area at bldg 101 and 100 (near bldg.81); includes facilities 247, 80-OW2, and 80-OW4. AKA AOI 25 or PSC 25 (associated with SWMU 26)	² SAR: 6/98

26	AOI 26: Facility 81, DDT Storage Area (associated with SWMU 25)	² SAR: 6/98
27	AOI 27: Facility 81, Hazmat shed including Facility 201	² SAR 6/98
28	AOI 28: North Temporary Collection Point	Removal: 11/98 SAR amended 3/12/99 ²
29	AOI 29: Facility 313, Temporary Collection Point	SAR: 1/20/99 ²
30	AOI 30: Floor Wash Disposal Area in grassy area between Bldg.313 and Hangar 825.	SAR: 3/30/99 ²
31	PSC 31: South Temporary Collection Point	SAR required; Removal needed ²
32	Hazardous materials storage area, PSC 32, (aka Facilities 325 & 335)	SAR:6/96 ²
33	AOI 33: DRMO storage area (includes Facility 179)	Removal: 11/3/98 SAR amended 3/30/99 ²
34	AOI 34: Rowell Creek Ordnance Disposal Area	²
35	AOI 35 - PCBs along perimeter road.	SAR completed: 7/98
36	Site 36 (aka OU9) - Control Tower Plume	Remedial Investigation and Feasibility Study in progress
37	Site 37 (aka OU9) Hangar 13/14 DCE Plume	Remedial Investigation and Feasibility Study in progress
38	PSC 38; PCB's on east west runway just north of runway 9RT taxi-way	Needs further delineation ²
39	PSC 39; All flightline (MB18) outfalls (sediment and surface water)	Needs further delineation ²
40	Facility 682 (A4): abandoned wastewater treatment plant (PSC 40)	SAR: 1/95 further evaluation needed. ²
41	PSC 41; Arsenic hot spot in former YWWA Mobile Target Area;	Removal Completed
42	PSC 42; Steam Plant in YWWA Public Works Area	Removal Action Memorandum approved ²
43	Facility 617: BDU/AWSEP Operations; includes Facility 632 and Facility 705: storage Facility (aka PSC 43)	Final SAR required; Removal needed ²

44	PSC 44: DRMO Ditch	Investigation Required.
45	Facility 11: steam generating plant (PSC 45)	SAR required ²
46	Facility 72: Crash fire station; and Facility 177: Arresting gear Facility (aka PSC 46)	SAR: 3/99 PAH's and TRPH in soils ²
47	Facility 308LN: line shack; and Facility 838LN: line shack (PSC 47)	Final SAR required; Removal required ²
48	North Fuel Farm Waste Oil Tank 285-ST	
49	Skeet Range (aka PSC 49 or Facility 804)	Further evaluation required. ²
50	Facility 98: storage Facility; Aka PSC 50	SAR required ²
51	Facility 200: waste oil tank and oil/water separator	
52	Facility 314: flightline ordinance Facility (aka PSC 52)	Final SAR: 6/18/99 needs further evaluation ²
53	Facility 241: air compressor Facility; Aka PSC 53	SAR: 3/99 ²
54	Facility 290: Transmitter Facility; includes Tank 290A; (PSC 54)	SAR: 5/99 ²
55	Facility 805: recycling PSC 55	SAR: 6/18/99; needs further evaluation ²
56	PSC 56: Hangar 815; wash rack	SAR: 1/29/99
57	Facility 858, OW-858-OW	Further evaluation required ¹
58	Facility 817: motor generator Facility	Final SAR required Removal needed ²
59	F-18 Crash Site - Whitehouse	NFA; 8/26/98 ¹
60	Facility 647: Environmental Dept. storage Facility	SAR 2/3/99 Removal completed
61	Facility 616: standby generator Facility	Final SAR: 6/25/99; removal completed 1/00
62	facility 1847: Fire Pump House	SAR: 6/96 Tanks are clean
63	Tank 80-C	NFA ¹
64	Tank 80-OW3 and 80-OW5	
65	Facility 255: admin. Office	SAR: 6/18/99
66	Oil/Water Separator 818 OW	
67	Oil/Water Separator 1821 OW	¹ No Further Action

68	Tank 81	Site Assessment required ¹
69	Facility 249: transformer assoc. with Facility 216	SAR required ² Removal needed
70	Facility 216: Fire pump/air compressor for hangar 67	removal 9/28/99
71	Facility 224LS: lift station	Final SAR: 6/18/99; Removal needed ²
72	Facility 334/ Tank 334-O/W	Site Assessment required; part of JETC ¹
73	Facility 900	
74	South Fuel Farm	Remedial Action Plan approved, date: 2/4/97 ¹
75	Facility 880: RATCC	SAR: 6/96 Removal needed ²
76	Facility 6UNF: flammable storage	Final SAR: 2/3/99
77	Facility 9: main fire station	SAR 5/99
78	Facility 950, Self Help Facility	Site Assessment Report: 12/1/98 ¹
79	Facility 1846, Tanks 1846 and 1846-OW	Site Assessment Report: 12/1/98 ¹
80	Tank 271-OW; and Tank 271-OWSE	
81	F-18 Crash Site - Ocala	MOP approved 4/1/97, Monitored Natural Attenuation ¹
82	Tank 325-OW	
83	Facility 3073: Exchange at yellow water	SAR: 10/13/98
84	Facility 1823, Tank 1823; and 1823 oil/water separator	Site Assessment Report required ¹
85	Day Tank 2	RAP approved ¹
86	Facility 810: water treatment facilities Facility	SAR: 8/21/98
87	Facility 237/ Tank 136	Site Assessment required ¹ ; AST by NFF
88	Facility 825LS: lift station	SAR: 12/21/98
89	Facility 832: flight simulator training Facility	SAR: 8/21/98
90	Facility 929: Self help facility	SAR: 8/21/98
91	Facility 558: standby generator facility	SAR: 3/30/99 Removal: 10/28/98

92	Facility 559: Men's golf assoc. storage facility	SAR:8/21/98
93	Facility 595: Guided missile facility	SAR: 9/3/98
94	Tank G872LS	Site Assessment required ¹
95	Facility 288: Emergency management training facility.	SAR: 9/98-NFA
96	Facility 288A: storage/standby generator facility	SAR: 9/98-NFA
97	Facility 312LS: lift station	SAR: 1/11/99
98	Facility 15: wastewater treatment control facility	SAR: 10/30/98
99	Facility 40: hazardous flammable storehouse	SAR: 9/8/98
100	Facility 47: Air Terminal Facility	SAR: 1/12/99
101	Facility 65: ready ammunition belting plant	SAR: 10/30/98
102	Facility 83: lighting vault	SAR: 3/30/99; Removal: 11/10/98
103	Facility 94: BEQ	SAR: 3/30/99; Removal:11/10/98
104	Facility 140: 1 st LT.'s Admin. Office	SAR: 10/30/98
105	Facility 535: Loading/unloading ramp	SAR: 3/30/99; removal: 10/28/98
106	Facility 200: Hobby Shop	SAR: 4/22/99
107	Facility 233: aircraft wash rack	SAR: 9/8/98
108	Tank 825-OW	
109	Transportation & Fuel Management Compound (facilities 80C, 180, and 80); includes Tanks 132, 133, 134, 135.	SAR 6/98 ² Tanks are NFA under RCRA ¹
110	Facility 329: parachute loft	SAR: 6/96; amended 3/12/99 Removal: 10/98
111	Hangar 1820	SAR: 6/96; SAR amended 3/12/99 Removal: 11/98
112	Facility 1: Public work center	SAR: 10/16/98
113	S3 Crash Site North of North Fuel Farm	NFA: 1/26/96 ¹
114	Site A-5: former small arms range	SAR: 6/96
115	Facility 179: Hazardous/flammable materials warehouse	SAR: 3/30/99 Removal:11/3/98

116	T-45 Crash Site	NFA: 2/27/97 ¹
117	Tank 860-OW	
118	Facility 864LS	SAR: 6/98
119	Facility 504	Sampling & Analysis Report (SAR): 6/98
120	Facility 853	SAR:6/98
121	Facility 1820LS	SAR: 6/98
122	Facility 823LS	SAR: 6/98
123	Facility18LS	SAR: 6/98
124	Facility 4	SAR: 6/98
125	Facility 624	SAR: 11/97
126	Facility 7: flammable & hazardous material storage	SAR: 9/97
127	Facility 91: mess hall	SAR: 11/97
128	Facility 193: standby generator for runway lights	SAR: 7/97
129	Facility 289: receiver facility	SAR: 11/97
130	Facility 312: corrosion control hangar	SAR: 6/96
131	Facility 324: engine maintenance shack	SAR: 7/97
132	Facility 364: criminal investigations/physical security storage	SAR: 11/97
133	Facility 500: security-detective division Facility	SAR: 11/97
134	Facility 502: ordnance administration/armory facility; and Tank 502	SAR: 11/97 Monitoring Only under State Petroleum Program
135	Facility 540: air search radar facility	SAR: 11/97
136	Facility 621LS: lift station	SAR: 11/97
137	Facility 625: Paint Booth	SAR: 11/97
138	Facility 626: weapons maintenance & repair shop	SAR: 11/97
139	Facility 637: tear gas chamber	SAR: 1/95
140	Facility 709: Former transformer pad	SAR: 7/97
141	Facility 823: Fuel OPs test facility; and 823 oil/water separator	SAR: 6/96 ¹ Soil removal 10/29/98

142	Facility 824/824A: avionics shop and aircraft ground support; 824-O oil/water separator; 824A oil/water separator	SAR: 6/96
143	Facility 1848: ground support issue & receipt	SAR: 11/97
144	Facility 848: well at GCA hardstand	SAR: 9/97
145	Facility 852: flammable materials warehouse	SAR: 6/97
146	859LS: lift station	SAR: 9/97
147	Facility 871: Hazardous/flammable storehouse	SAR: 6/96
148	Facility 898: BEQ	SAR: 7/97
149	Facility 927: BEQ	SAR: 11/97
150	Hangar 1845; and oil/water separator OW-1845-OW	SAR: 6/96

¹ This unit is regulated under Chapter 62-770, Florida Administrative Code
² Activities to be conducted under CERCLA/CERFA programs.

A.2. List of solid waste management units (SWMUs) and areas of concern (AOCs) where Remedy has been Selected			
Original SWMU designation	New SWMU designation	Site Name	Status
A	1	Site 1 - Old landfill OU 1	Record of Decision, date: 10/02/95 Long-Term monitoring
B	2	Site 2 - recent landfill OU 1	Record of Decision, date: 10/02/95 Long-Term monitoring
C	3	Site 3 - Oil/sludge disposal pit OU 8	Record of Decision date: 9/30/98 Air Sparging w/Natural Attenuation
E	5	Site 5 - Oil disposal area, NW OU 2	Record of Decisions, dates: 09/30/94; 06/24/96; RA in progress ¹
F	7	Site 7 - Old fire fighting training area OU 3	ROD: 2/1999 RA in Progress
G	8	Site 8 - Boresite range/hazardous waste storage area/fire fighting training area. OU 3	RI/BRA/FS completed. ¹ ROD: 8/25/99 RA in Progress
	10	Site 10 - Construction/Rubble Piles OU 4	Record of Decision dated: Sept. 1997
H	11	Site 11 - Golf course pesticide disposal area OU 6	IROD Date: 09/14/94 IRA complete; Record of Decision date: 9/30/98 Soil excavation and LTM
J	14	Site 14 - Blue 5 Ordnance Disposal Area	Record of Decision date: 9/30/98
L	16	Site 16 - AIMD Seepage Pit OU 7	Record of Decisions, dates: 03/31/94; 09/16/96; 4/19/99 RA in progress ¹
M	17	Site 17 - Oil sludge disposal pit, SW	IRA complete; Record of Decision, date: 09/30/94; 06/24/96 MNA in progress

All activities to be conducted under the CERCLA/CERFA programs

¹ Remedial Investigation/ Baseline Risk Assessment/ Feasibility Study completed under CERCLA

A.3 List of SWMUs which require a RCRA Facility Investigation or Remedial Investigation and/or a Feasibility Study or Corrective Measures Study (All activities to be conducted under the CERCLA/CERFA programs)

Original SWMU Designation	New SWMU Designation	Site Name	Status
K	15	Site 15 - Blue 10 Ordnance Disposal Area (aka OU5)	RI/baseline risk assessment completed/ feasibility study being amended
	21	Golf Course Maintenance Area (Building 238); (aka PSC 21); Facility 371: storage shed; Facility 874: public toilet; Facility 397: golf course storage Facility; and Facility 398: golf course storage Facility	SAR 2/99; Further evaluation needed; pesticides & arsenic in soil/gw ²
	25	Former transformer storage area at bldg 101 and 100 (near bldg.81); includes facilities 247, 80-OW2, and 80-OW4. AKA AOI 25 or PSC 25 (associated with SWMU 26)	² SAR: 6/98
	36	Site 36 (aka OU9) - Control Tower Plume	Remedial Investigation and Feasibility Study in progress
	37	Site 37 (aka OU9) Hangar 13/14 DCE Plume	Remedial Investigation and Feasibility Study in progress
	45	Facility 11: steam generating plant (PSC 45)	SAR required ²

² Activities to be conducted under CERCLA / CERFA programs

SAR: Sampling and Analysis Report, conducted under the CERCLA/CERFA programs

A.4. List of solid waste management units (SWMUs) and areas of concern (AOC) requiring Confirmatory Sampling.

Original SWMU designation	New SWMU designation	Site Name	Status
	20	PSC 20 - Hazardous Waste Storage Facility (includes facility 610)	Subpart B facility ²
	22	Golf Course Fairway 7 Disposal Area, AOI 22	SAR required ²
	26	AOI 26: Facility 81, DDT Storage Area (associated with SWMU 25)	² SAR: 6/98
	27	AOI 27: Facility 81, Hazmat shed including Facility 201	² SAR 6/98
	31	PSC 31: South Temporary Collection Point	SAR required; Removal needed ²
	32	Hazardous materials storage area, PSC 32, (aka Facilities 325 & 335)	SAR:6/96 ²
	38	PSC 38; PCB's on east west runway just north of runway 9RT taxi-way	Needs further delineation ²
	39	PSC 39; All flightline (MB18) outfalls (sediment and surface water)	Needs further delineation ²
	40	Facility 682 (A4): abandoned wastewater treatment plant (PSC 40)	SAR: 1/95 further evaluation needed. ²
	42	PSC 42; Steam Plant in YWWA Public Works Area	Further delineation needed. ²
	43	Facility 617: BDU/AWSEP Operations; includes Facility 632 and Facility 705: storage Facility (aka PSC 43)	Final SAR required; Removal needed ²
	44	PSC 44: DRMO Ditch	
	46	Facility 72: Crash fire station; and Facility 177: Arresting gear Facility (aka PSC 46)	SAR: 3/99 PAH's and TRPH in soils ^{2&1}
	49	Skeet Range (aka PSC 49 or Facility 804)	Further evaluation required. ²
	50	Facility 98: storage Facility; Aka PSC 50	SAR required ²
	52	Facility 314: flightline ordinance Facility (aka PSC 52)	Final SAR:6/18/99 needs further evaluation ²
	53	Facility 241: air compressor Facility; Aka PSC 53	SAR: 3/99 ²
	55	Facility 805: recycling PSC 55	SAR: 6/18/99; needs further evaluation ²

A.4. List of solid waste management units (SWMUs) and areas of concern (AOC) requiring Confirmatory Sampling.

	56	PSC 56: Hangar 815; wash rack	SAR:1/29/99 ²
	71	Facility 224LS: lift station	Final SAR: 6/18/99; Removal needed ²
	58	Facility 817: motor generator Facility	Final SAR required Removal needed ²

¹ This unit is regulated under Chapter 62-770, Florida Administrative Code

² Activities to be conducted under CERCLA / CERFA programs

SAR: Sampling and Analysis Report, conducted under the CERCLA/CERFA programs

A.5. List of solid waste management units (SWMUs) and Areas of Concern (AOCs) that require no further action.

Original SWMU Designation	New SWMU Designation	Site Name and Description	Status
D	4	Site 4-Grease Pits	Technical memorandum for NFA completed, date: 3/24/98 ²
	6	PSC 6- Lake Fretwell Rubble Disposal Area	Further sampling needed to delineate contamination ²
	9	Site 9-Recent Grease Pits	Technical memorandum for NFA completed, date: 8/31/98 ²
	12	Site 12-Public Works Rubble Disposal Area	Technical memorandum for NFA completed, date: 10/1/98 ²
I	13	Site 13- Day Tank 1 Fuel Spill (Aka Facility 293)	Remedial Action Plan approved, date: 3/3/98 ¹
J	14	Site 14-Blue 5 Ordnance Disposal Area	Record of Decision date: 9/30/98 ²
N	18	Site 18-Ammunition Disposal Area	Tech. Memo. Approved 11/30/98 ²
	19	Site 19-Rowell Creek Rubble Disposal Area	Technical memorandum approved 12/10/98 ²
	23	Aviation Ordnance Site; AOI 23	SAR: 10/30/98 ²
	24	Pistol Range Site (including parcel 508); AOI 24	²
	28	AOI 28: North Temporary Collection Point	Removal: 11/98 SAR amended 3/12/99 ²
	29	AOI 29: Facility 313, Temporary Collection Point	SAR: 1/20/99 ²
	30	AOI 30: Floor Wash Disposal Area in grassy area between Bldg.313 and Hangar 825.	SAR: 3/30/99 ²
	33	AOI 33: DRMO storage area (includes Facility 179)	Removal: 11/3/98 SAR amended 3/30/99 ²
	34	AOI 34: Rowell Creek Ordnance Disposal Area	²
	35	AOI 35 - PCBs along perimeter road.	SAR completed: 7/98 ²
	41	PSC 41; Arsenic hot spot in former YWWA Mobile Target Area;	Removal Completed

A.5. List of solid waste management units (SWMUs) and Areas of Concern (AOCs) that require no further action.			
	47	Facility 308LN: line shack; and Facility 838LN: line shack (PSC 47)	Final SAR required; Removal required ²
	48	North Fuel Farm Waste Oil Tank 285-ST	²
	54	Facility 290: Transmitter Facility; includes Tank 290A; (PSC 54)	SAR: 5/99 ²
	57	Facility 858, OW-858-OW	Further evaluation required ¹ & ²
	59	F-18 Crash Site - Whitehouse	NFA; 8/26/98 ¹
	60	Facility 647: Environmental Dept. storage Facility	SAR 2/3/99 Removal completed ²
	61	Facility 616: standby generator Facility	Final SAR: 6/25/99; removal completed 1/00 ²
	62	Facility 1847: fire pump house.	SAR: 6/96 ¹ & ² Tanks are clean
	63	Tank 80-C	NFA ¹
	64	Tank 80-OW3 and 80-OW5	¹
	65	Facility 255: admin. Office	SAR: 6/18/99 ²
	66	Oil/Water Separator 818 OW	¹
	67	Oil/Water Separator 1821 OW	¹
	68	Tank 81	Site Assessment required ¹
	69	Facility 249: transformer assoc. with 216	SAR required ² Removal needed
	70	Facility 216: Fire pump/air compressor for hangar 67	removal 9/28/99 ²
	72	Facility 334/ Tank 334-O/W	Site Assessment required; part of JETC ¹
	73	Facility 900	NFA
	74	South Fuel Farm	Remedial Action Plan approved, date: 2/4/97 ¹
	75	Facility 880: RATCC	SAR: 6/96 Removal completed 9/27/99 ²
	76	Facility 6UNF: flammable storage	Final SAR: 2/3/99 ²
	77	Facility 9: main fire station	SAR 5/99 ²
	78	Facility 950, Self Help Facility	Site Assessment Report: 12/1/98 ¹
	79	Facility 1846, Tanks 1846 and 1846OW	Site Assessment Report: 12/1/98 ¹
	80	Tank 271-OW; and Tank 271-OWSE	¹

A.5. List of solid waste management units (SWMUs) and Areas of Concern (AOCs) that require no further action.			
81	F-18 Crash Site - Ocala	MOP approved 4/1/97, Monitored Natural Attenuation ¹	
82	Tank 325-OW		
83	Facility 3073: Exchange at yellow water	SAR: 10/13/98 ²	
84	Facility 1823, Tank 1823; and 1823 oil/water separator	Site Assessment Report required ¹	
85	Day Tank 2	RAP approved ¹	
86	Facility 810: water treatment facilities Facility	SAR: 8/21/98 ²	
87	Facility 237/ Tank 136	Site Assessment required ¹ ; AST by NFF	
88	Facility 825LS: lift station	SAR: 12/21/98 ²	
89	Facility 832: flight simulator training Facility	SAR: 8/21/98 ²	
90	Facility 929: Self help Facility	SAR: 8/21/98 ²	
91	Facility 558: standby generator Facility	SAR: 3/30/99 ² Removal: 10/28/98	
92	Facility 559: Men's golf assoc. storage Facility	SAR: 8/21/98 ²	
93	Facility 595: Guided missile facility	SAR: 9/3/98 ²	
94	Tank G872LS	Site Assessment required ¹	
95	Facility 288: Emergency management training Facility.	SAR: 9/98-NFA ²	
96	Facility 288A: storage/standby generator Facility.	SAR: 9/98-NFA ²	
97	Facility 312LS: lift station	SAR: 1/11/99 ²	
98	Facility 15: wastewater treatment control Facility	SAR: 10/30/98 ²	
99	Facility 40: hazardous flammable storehouse	SAR: 9/8/98 ²	
100	Facility 47: Air Terminal Facility	SAR: 1/12/99 ²	
101	Facility 65: ready ammunition belting plant	SAR: 10/30/98 ²	
102	Facility 83: lighting vault	SAR: 3/30/99; Removal: 11/10/98 ²	
103	Facility 94: BEQ	SAR: 3/30/99; ² Removal: 11/10/98	
104	Facility 140: 1 st LT.'s Admin. Office	SAR: 10/30/98 ²	
105	Facility 535: Loading/unloading ramp	SAR: 3/30/99; removal: 10/28/98 ²	

A.5. List of solid waste management units (SWMUs) and Areas of Concern (AOCs) that require no further action.			
	106	Facility 200: Hobby Shop; and tank 200-oil/water separator	SAR: 4/22/99 ²
	107	Facility 233: aircraft wash rack	SAR: 9/8/98 ²
	108	Tank 825-OW	
	109	Transportation & Fuel Management Compound (facilities 80C, 180, and 80); includes Tanks 132, 133, 134, 135.	SAR 6/98 ² Tanks are NFA under RCRA ¹
	110	Facility 329: parachute loft	SAR: 6/96; amended 3/12/99 ² Removal: 10/98
	111	Hangar 1820	SAR: 6/96; SAR amended 3/12/99 ² Removal: 11/98
	112	Facility 1: Public work center	SAR: 10/16/98 ²
	113	S3 Crash Site North of North Fuel Farm	NFA: 1/26/96 ¹ SAR: 6/96
	114	Site A-5: former small arms range	
	115	Facility 179: Hazardous/flammable materials warehouse	SAR: 3/30/99 Removal: 11/3/98 ²
	116	T-45 Crash Site	NFA: 2/27/97 ¹
	117	Tank 860-OW	
	118	Facility 864LS	SAR: 6/98
	119	Facility 504	Sampling & Analysis Report (SAR): 6/98 ²
	120	Facility 853	SAR: 6/98 ²
	121	Facility 1820LS	SAR: 6/98 ²
	122	Facility 823LS	SAR: 6/98 ²
	123	Facility 18LS	SAR: 6/98 ²
	124	Facility 4	SAR: 6/98 ²
	125	Facility 624	SAR: 11/97 ²
	126	Facility 7: flammable & hazardous material storage	SAR: 9/97 ²
	127	Facility 91: mess hall	SAR: 11/97 ²
	128	Facility 193: standby generator for runway lights	SAR: 7/97 ²
	129	Facility 289: receiver Facility	SAR: 11/97 ²

A.5. List of solid waste management units (SWMUs) and Areas of Concern (AOCs) that require no further action.			
	130	Facility 312: corrosion control hangar	SAR: 6/96 ²
	131	Facility 324: engine maintenance shack	SAR: 7/97 ²
	132	Facility 364: criminal investigations/physical security storage	SAR: 11/97 ²
	133	Facility 500: security-detective division Facility	SAR: 11/97 ²
	134	Facility 502: ordnance administration/armory Facility; and Tank 502	SAR: 11/97 ¹ Monitoring Only under State Petroleum Program
	135	Facility 540: air search radar Facility	SAR: 11/97 ²
	136	Facility 621LS: lift station	SAR: 11/97 ²
	137	Facility 625: Paint Booth	SAR: 11/97 ²
	138	Facility 626: weapons maintenance & repair shop	SAR: 11/97 ²
	139	Facility 637: tear gas chamber	SAR: 1/95 ²
	140	Facility 709: Former transformer pad	SAR: 7/97 ²
	141	Facility 823: Fuel OPs Test Facility; and 823 oil/water separator	SAR: 6/96 ¹ Soil removal 10/29/98
	142	Facility 824/824A: avionics shop and aircraft ground support; 824-O oil/water separator; 824A oil/water separator	SAR: 6/96 ^{1&2}
	143	Facility 1848: ground support issue & receipt	SAR: 11/97 ²
	144	Facility 848: well at GCA hardstand	SAR: 9/97 ²
	145	Facility 852: flammable materials warehouse	SAR: 6/97 ²
	146	859LS: lift station	SAR: 9/97 ²
	147	Facility 871: Hazardous/flammable storehouse	SAR: 6/96 ²
	148	Facility 898: BEQ	SAR: 7/97 ²
	149	Facility 927: BEQ	SAR: 11/97 ²
	150	Hangar 1845; and oil/water separator OW-1845-OW	SAR: 6/96 ^{1&2}

¹ This unit is regulated under Chapter 62-770, Florida Administrative Code

² Activities to be conducted under CERCLA / CERFA programs

SAR: Sampling and Analysis Report conducted under the CERCLA/CERFA programs

APPENDIX B

**RCRA Facility Investigation (RFI)
Work Plan Outline**

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) OUTLINE

The purpose of the RFI portion of the RCRA corrective action process is to evaluate the nature and extent of releases of hazardous wastes and/or hazardous constituents and to gather necessary data to support the Corrective Measures Study (CMS) and/or Interim Measures. Planning for the investigation is best accomplished through a logical progression of tasks:

1. gather information on the source of the release(s) to the environment (Source Characterization),
2. gather information on the physical aspects of the environment which will affect the migration and fate of the release and identification of exposure pathways for both humans and non-human members of the environment (Environmental Setting),
3. use Source Characterization and Environmental Setting to develop a conceptual model of the release which will be used to plan and conduct a program to define the nature, rate and extent of the release (Sampling and Analysis Plan).

An RFI Work Plan and RFI Report are generally required elements of the RCRA corrective action process. The requirements for a full, detailed RFI are listed in this Appendix. EPA recognizes that each facility is unique. Therefore, the scope and requirements of the RFI shall be focused to fit the complexity of the site-specific situation. The work plan requirements listed in this Appendix in no way limit the site-specific opportunities for a Permittee. For example, the RFI may be implemented in phases. Relevant information contained in previously developed documents, such as a RCRA Part B Permit application, may be referenced as appropriate, but must be summarized in either the RFI Work Plan or the RFI Report. In addition, EPA understands that Risk Assessments are becoming more widely utilized to place characterization information into context and to aid in determining remedial solutions. If a Risk Assessment is expected to be performed in the future, note that Region 4 has developed a series of Risk Bulletins to provide Permittees and their contractors with the general format and process Region 4 expects a Risk Assessment to follow.

In some cases, it may be possible to implement the RFI concurrent with the CMS (also see Appendix C). This approach can save time and money because the earlier in the corrective action process potential remedies can be identified, the more effectively information gathering can be focused. The Agency anticipates that a concurrent RFI/CMS approach may be appropriate in the following types of situations, among others: facilities where removal remedies have been proposed by the owner/operator, facilities with straightforward remedial solutions or where presumptive remedies can be applied, facilities where few remedial options are available, and facilities where the remedy is phased. The Agency will determine on a case-by-case basis if a concurrent RFI/CMS is appropriate. Because of the unique data collection requirements necessary for a remedial solution which includes natural attenuation of contaminants in groundwater, if natural attenuation is expected to be part of the remedial solution, then the Sampling and Analysis Plan should be crafted to include monitoring of specific water quality parameters unique to natural attenuation (e.g., nitrites/nitrates, ferrous iron, sulfides, dissolved oxygen, methane, hydrogen, etc.).

I. RFI WORK PLAN REQUIREMENTS - ELEMENTS OF THE RFI WORK PLAN

The RFI Work Plan shall include, at a minimum, the following elements:

A. Introduction - Summary of any relevant existing assessment data

The Permittee shall describe the purpose or objective of the RFI Work Plan and provide a summary of any existing environmental data which is relevant to the investigation. The summary should provide the following items, at a minimum:

1. land ownership history,
2. facility operating dates,
3. facility's product(s),
4. raw materials used in facility operations, wastes generated,
5. nature and extent of any known contamination,
6. summary of an ongoing Interim Measures and past assessments,
7. summary of Permit objective and how this objective will be satisfied.

B. Environmental Setting

The Permittee shall provide information on the environmental setting at the facility. The Permittee shall characterize the Environmental Setting as it relates to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units (SWMUs) and/or Areas of Concern (AOCs). Data gaps pertinent to characterization of releases shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. The Environmental Setting shall cover the following items, at a minimum:

1. Hydrogeology

The Permittee shall provide a summary of the hydrogeologic conditions at the facility. This discussion shall include, but not be limited to, the following information:

- a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:
 - i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
 - ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, metamorphic foliation, etc.);
 - iii) Depositional history;
 - iv) Regional and facility specific ground-water flow patterns (porous media, fracture media, karst media); and
 - v) Identification and characterization of areas and amounts of recharge and discharge (springs in karst terrain, base level streams and rivers).
- b. An analysis of any topographic features that might influence the ground-water flow system (e.g., sinkholes and sinking streams in karst terrains).
- c. Based on any existing field data, tests (e.g., pump tests, tracer tests), and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (I. e., the aquifers and any intervening saturated and unsaturated units), including:
 - i) Hydraulic conductivity and porosity (total and effective), groundwater flow velocity, groundwater basin discharge;
 - ii) Lithology, grain size, sorting, degree of cementation;
 - iii) An interpretation of hydraulic interconnections between saturated zones (i.e., aquifers) and surface waters; and
 - iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on data obtained from groundwater monitoring wells and piezometers installed upgradient, water wells and/or springs downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

- i) Water-level contour and/or potentiometric maps, including seasonal variations;
- ii) Hydrologic cross sections showing vertical gradients;
- iii) The flow system, including the vertical and horizontal components of flow; and
- iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences and for karst terrain, stormflow.

e. A description of man-made influences that may affect the hydrology of the site, identifying:

- i) Local water-supply and production wells with an approximate schedule of pumping; and
- ii) Man-made hydraulic structures (pipelines, french drains, ditches, roofs, runways, parking lots, etc.).

2. Soils

The Permittee shall provide an explanation of the soil and rock units above the water table in the vicinity of contaminant release(s). This summary may include, but not be limited to, the following types of information as appropriate:

- i) Surface soil distribution;
- ii) Soil profile, including ASTM classification of soils;
- iii) Transects of soil stratigraphy;
- iv) Hydraulic conductivity (saturated and unsaturated);
- v) Relative permeability;
- vi) Bulk density;
- vii) Porosity;
- viii) Soil sorption capacity;
- ix) Cation exchange capacity (CEC);
- x) Soil organic content;
- xi) Soil pH;
- xii) Particle size distribution;
- xiii) Depth of water table;
- xiv) Moisture content;
- xv) Effect of stratification on unsaturated flow;
- xvi) Infiltration;
- xvii) Evapotranspiration;
- xviii) Storage capacity;
- xix) Vertical flow rate; and
- xx) Mineral content.

3. Surface Water and Sediment

The Permittee shall provide a description of the surface water bodies in the vicinity of the facility. This summary may include, but not be limited to, the following activities and information:

- a. Description of the temporal and permanent surface water bodies including:
 - i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
 - ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
 - iii) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.
 - iv) Drainage patterns; and
 - v) Evapotranspiration.
- b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.
- c. Description of sediment characteristics including:
 - i) Deposition area;
 - ii) Thickness profile; and
 - iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

- a. A description of the following parameters:
 - i) Annual and monthly rainfall averages;
 - ii) Monthly temperature averages and extremes;
 - iii) Wind speed and direction;
 - iv) Relative humidity/dew point;
 - v) Atmospheric pressure;
 - vi) Evaporation data;
 - vii) Development of inversions; and
 - viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricanes)
- b. A description of topographic and man-made features which affect air flow and emission patterns, including:
 - i) Ridges, hills or mountain areas;
 - ii) Canyons or valleys;
 - iii) Surface water bodies (e.g., rivers, lakes, bays, etc.); and
 - iv) Buildings.

C. Source Characterization

For those sources from which releases of hazardous constituents have been detected, the Permittee shall provide analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e. g., facility security, and engineering barriers). Data gaps on source characterization shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. This summary shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics:

- a. Location of unit/disposal area;
- b. Type of unit/disposal area;
- c. Design features;
- d. Operating practices (past and present)
- e. Period of operation;
- f. Age of unit/disposal area;
- g. General physical conditions; and
- h. Method used to close the unit/disposal area.

2. Waste Characteristics:

- a. Type of wastes placed in the unit;
 - i) Hazardous classification (e. g., flammable, reactive, corrosive, oxidizing or reducing agent);
 - ii) Quantity; and
 - iii) Chemical composition.
- b. Physical and chemical characteristics such as:
 - i) Physical form (solid, liquid, gas);
 - ii) Physical description (e.g., powder, oily sludge);
 - iii) Temperature;
 - iv) pH;
 - v) General chemical class (e.g., acid, base, solvent);
 - vi) Molecular weight;
 - vii) Density;
 - viii) Boiling point;
 - ix) Viscosity;
 - x) Solubility in water;
 - xi) Cohesiveness of the waste; and
 - xii) Vapor pressure.
- c. Migration and dispersal characteristics of the waste such as:
 - i) Sorption capability;
 - ii) Biodegradability, bioconcentration, and biotransformation;
 - iii) Photodegradation rates;
 - iv) Hydrolysis rates; and
 - v) Chemical transformations.

D. Potential Receptors

The Permittee shall provide data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Data gaps pertinent to receptor analysis shall be identified and provisions made in Section E to obtain the relevant information to fill the data gap. The following characteristics shall be identified at a minimum:

1. Current local uses and planned future uses of groundwater:
 - a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial);
 - b. Location of groundwater users, to include withdrawal and discharge wells and springs, within one mile of the impacted area.

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:
 - a. Domestic and municipal (e.g., potable and lawn/gardening watering);
 - b. Recreational (e.g., swimming, fishing);
 - c. Agricultural;
 - d. Industrial; and
 - e. Environmental (e.g., fish and wildlife propagation).
3. Human use of or access to the facility and adjacent lands, including but not limited to:
 - a. Recreation;
 - b. Hunting;
 - c. Residential;
 - d. Commercial; and
 - e. Relationship between population locations and prevailing wind direction.
4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.
5. A general description of the ecology within the area adjacent to the facility.
6. A general demographic profile of the people who use have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.
7. A description of any known or documented endangered or threatened species near the facility.

E. Sampling and Analysis Plan(s) for Characterization of Releases of Hazardous Waste/Hazardous Constituents

The Permittee shall prepare a plan to document all monitoring procedures necessary to characterize the extent, fate and transport of releases (i.e., identify sample locations, sample procedures and sample analysis to be performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented). The sampling strategy and procedures shall be in accordance with EPA Region 4 Environmental Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP) (most recent version). Any deviations from

this reference must be requested by the applicant and approved by EPA. If a Risk Assessment is expected to be performed once release characterization is complete or nearly complete, Data Quality Objectives (DQO) for a Human Health Risk Assessment requires a Data Quality Objective of Level 3 or greater.

The Sampling and Analysis Plan must specifically discuss the following unless the SOP procedures are specifically referenced.

1. Sampling Strategy

- a. Selecting appropriate sampling locations, depths, etc.;
- b. Obtaining all necessary ancillary data;
- c. Determining conditions under which sampling should be conducted;
- d. Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, subsurface gas);
- e. Determining which parameters are to be measured and where;
- f. Selecting the frequency of sampling and length of sampling period;
- g. Selecting the types of samples (e.g., composite vs. grab) and number of samples to be collected.

2. Sampling Procedures

- a. Documenting field sampling operations and procedures, including:
 - i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);
 - ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
 - iii) Documentation of specific sample preservation method;
 - iv) Calibration of field instruments;
 - v) Submission of appropriate blanks (e.g., field, equipment, trip, etc.);
 - vi) Potential interferences present at the facility;
 - vii) Construction materials and techniques, associated with monitoring wells and piezometers;
 - viii) Field equipment listing and sampling containers;
 - ix) Sampling order; and
 - x) Decontamination procedures.
- b. Selecting appropriate sample containers;
- c. Sampling preservation; and
- d. Chain-of-custody, including:
 - i) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
 - ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.
 - iii) Chain-of-custody seals for sample containers and shipping coolers.

3. Sample Analysis

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods" (most recent version) or an alternate approved method. The sample analysis section of the Sampling and Analysis Plan shall specify the following:

- a. Chain-of-custody procedures, including:
 - i) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
 - ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
 - iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersment for analysis.
- b. Sample storage (e.g., maximum holding times for constituents);
- c. Sample preparation methods;
- d. Analytical Procedures, including:
 - i) Scope and application of the procedure;
 - ii) Sample matrix;
 - iii) Potential interferences;
 - iv) Precision and accuracy of the methodology; and
 - v) Method Detection Limits; and
 - vi) Practical Quantitative Limits
- e. Calibration procedures and frequency;
- f. Data reduction, validation and reporting;
- g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
 - i) Method blank(s);
 - ii) Laboratory control sample(s);
 - iii) Calibration check sample(s);
 - iv) Replicate sample(s);
 - v) Matrix-spiked sample(s);
 - vi) "Blind" quality control sample(s);
 - vii) Control charts;
 - viii) Surrogate samples;
 - ix) Zero and span gases; and
 - x) Reagent quality control checks.

- h. External quality control checks by EPA, including:
 - i) Spikes and blanks at sampling events for which EPA or its technical representative provides oversight; and
 - ii) The equivalent of a CLP data package for samples split with EPA or for which EPA specifically requests the package.
- i. Preventive maintenance procedures and schedules;
- j. Corrective action (for laboratory problems); and
- k. Turnaround time.

F. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

- a. Unique sample or field measurement code;
- b. Sampling or field measurement location and sample or measurement type;
- c. Sampling or field measurement raw data;
- d. Laboratory analysis ID number;
- e. Property or component measures; and
- f. Result of analysis (e.g. concentration, data qualifiers).

2. Tabular Displays

The following data shall be presented in tabular displays:

- a. Unsorted (raw) data;
- b. Results for each medium, or for each constituent monitored;
- c. Data reduction for statistical analysis, as appropriate;
- d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
- e. Summary data

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

- a. Display sampling location and sampling grid;
- b. Indicate boundaries of sampling area, and area where more data are required;
- c. Display geographical extent of contamination, both horizontally and vertically;
- d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and
- e. Indicate features affecting inter-media transport and show potential receptors.

G. Project Management Plan - Schedule of Implementation

Permittee shall prepare a Project Management Plan which will cover qualifications of personnel categories and the management control structure for the project. The Permittee shall also provide a schedule for completing the planned RFI activities. The schedule shall be as specific as possible (i.e., it should indicate the number of days/weeks/months required for each major work plan task).

II. RFI REPORT REQUIREMENTS - ELEMENTS OF THE RFI REPORT

The RFI Report shall include, at a minimum, the following elements:

A. Introduction

The Permittee shall describe the purpose of the RFI Work Plan and provide a summary description of the project.

B. Environmental Setting

The Permittee shall describe the Environmental Setting in and around the facility. The RFI Work Plan should contain some, if not all, of the information on the Environmental Setting. Any information collected during work plan implementation which clarifies or improves understanding of the Environmental Setting should be provided in this section.

C. Source Characterization

The Permittee shall summarize the sources of contamination and nature of releases identified at the facility. The RCRA Facility Assessment and the RFI Work Plan should contain some, if not all, of the information on Source Characterization. Any information collected during work plan implementation or obtained from the sources (e.g., voluntarily or from other Environmental Programs) which directly addresses Source Characterization should be provided in this section.

D. Sampling and Analysis Results

The Permittee shall present data results obtained pursuant to the RFI Work Plan. The Permittee shall identify any work plan proposals which were not completed and explain why such actions were not finished. The Permittee shall also present its analysis/interpretation of how the sampling data meet the RFI objective and how the sampling data fits or modifies the contaminant conceptual model. For all analytical data, the Permittee shall discuss the results of data quality/data review.

E. Data Quality Assurance/Data Quality Data Review

The Permittee shall perform a Quality Assurance/Quality Control data review on all data present in the RFI. The Quality Assurance/Quality Control data review shall be in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA-540/R94-013) and the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA-540/R94-012). The data review shall address the following, at minimum:

- a. Holding times;
- b. Blanks;
- c. Laboratory Control Samples;
- d. Field Duplicates;
- e. Surrogate Recoveries;
- f. Matrix Spike/Matrix Spike Duplicates
- g. Data Assessment - Data Usability.

F. Conclusions

The Permittee shall summarize the major conclusions reached after analysis of the environmental setting, source characterization, sampling and analysis results and data quality. Any data gaps, needed to complete characterization of the scope and extent of the releases from SWMUs and/or AOCs or to refine further the contaminant conceptual model, shall be identified and recommendations made in the Recommendations Section of the report.

G. Recommendations

The Permittee shall provide its recommendations on what, if any, further action is needed to complete the characterization of release(s) from SWMUs and/or AOCs.

H. Work Plan for Additional Investigations

If further investigations are determined to be needed to complete the objective of the RFI, then the Permittee shall provide a work plan to complete characterization of the release(s).

APPENDIX C

**Corrective Measures Study (CMS)
Outline**

APPENDIX C

CORRECTIVE MEASURE STUDY (CMS) OUTLINE

The purpose of the CMS portion of the RCRA corrective action process is to identify and evaluate potential remedial alternatives for the releases of hazardous constituents that have been identified at the facility through the RFI or other investigations to need further evaluation. The scope and requirements of the CMS are balanced with the expeditious initiation of remedies and rapid restoration of contaminated media. The scope and requirements of the CMS should be focused to fit the complexity of the site-specific situation. It is anticipated that Permittee's with sites with complex environmental problems may need to evaluate a number of technologies and corrective measure alternatives. For other facilities, however, the evaluation of a single corrective measure alternative may be adequate. Therefore, a streamlined or focused approach to the CMS may be initiated. Information gathered during any stabilizations or interim measures will be used to augment the CMS and in cases where corrective action goals are met, may be a substitute for the final CMS.

Regardless of whether a streamlined/focused or a detailed CMS is required, a CMS Work Plan and CMS Report are generally required elements. The requirements for a full, detailed CMS are listed below. The Agency has the flexibility not to require sections of the plan and/or report, where site-specific situations indicate that all requirements are not necessary. Additionally, the Agency may require additional studies besides these discussed in order to support the CMS.

I. Corrective Measures Study (CMS) Work Plan

A. Elements of the CMS Work Plan

The Corrective Measures Study (CMS) Work Plan shall include at a minimum the following elements:

1. A brief site-specific description of the overall purpose of the CMS;
2. A brief description of the corrective measure objectives, including proposed target media cleanup standards (e.g., promulgated federal and state standards) and preliminary points of compliance or a description of how a risk assessment will be performed (e.g., guidance documents);
3. A brief description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied;
4. A brief description of the general approach to investigating and evaluating potential corrective measures;
5. A detailed description of any proposed pilot, laboratory and/or bench scale studies;
6. A proposed outline for the CMS Report including a description of how information will be presented;
7. A brief description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, project schedules, budget and personnel. Include a description of qualifications for personnel directing or performing the work;
8. A project schedule that specifies all significant steps in the process and when key documents (e.g., CMS Progress Reports, draft CMS Report) are to be submitted to the Agency;
9. A detailed Public Involvement Plan.

II. Corrective Measures Study (CMS) Report

The detail of a CMS may vary based upon the complexity of the site, on-going Interim Measures, etc. However, the CMS Report may include the following elements:

A. Introduction/Purpose

The Permittee shall describe the purpose of the CMS Report and provide a summary description of the project.

B. Description of Current Situation

The Permittee shall submit a summary and an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measures alternative(s). The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

C. Establishment of Proposed Media Specific Cleanup Standards

The Permittee shall describe the proposed media cleanup standards and point of compliance. The standards must be either background, promulgated federal and state standards or risk-derived standards. If media clean-up standards are not proposed, then the Agency will unilaterally propose setting media clean-up standards to either background, promulgated federal and state standards or the most conservative risk-derived standards.

D. Identification, Screening and Development of Corrective Measure Technologies

1. Identification: List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives. Include a table that summarizes the available technologies.

The Permittee should consider innovative treatment technologies, especially in situations where there are a limited number of applicable corrective measure technologies.

2. Screening: The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

- a. Site Characteristics: Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

- b. **Waste Characteristics:** Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).
 - c. **Technology Limitations:** During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.
3. **Corrective Measure Development:** The Permittee shall assemble the technologies that pass the screening step into specific alternatives that have the potential to meet the corrective action objectives for each media. Options for addressing less complex sites could be relatively straight-forward and may only require evaluation of a single or limited number of alternatives. Each alternative may consist of an individual technology or a combination used in sequence (i.e., treatment train). Different alternatives may be considered for separate areas of the facility, as appropriate. List and briefly describe each corrective measure alternative.

E. Evaluation of a Final Corrective Measure Alternative

For each remedy which warrants a more detailed evaluation (i.e., those that passed through the screening step), including those situations when only one remedy is being proposed, the Permittee shall provide detailed documentation of how the potential remedy will comply with each of the standards listed below. These standards reflect the major technical components of remedies including cleanup of releases, source control and management of wastes that are generated by remedial activities. The specific standards are as follows:

1. Protect human health and the environment.
2. Attain media cleanup standards set by EPA.
3. Control the source of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment.
4. Comply with applicable standards for management of wastes.
5. Other factors.

In evaluating the selected alternative or alternatives, the Permittee shall prepare and submit information that documents that the specific remedy will meet the standards listed above. The following guidance should be used in completing this evaluation.

1. **Protect Human Health and the Environment**

Corrective action remedies must be protective of human health and the environment. Remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes. Therefore, the Permittee shall provide a discussion of any short term remedies necessary to meet this standard, as well as discuss how the corrective measures alternative(s) meet this standard.

2. Attain Media Cleanup Standards

Remedies will be required to attain media cleanup standards. As part of the necessary information for satisfying this requirement, the Permittee shall address whether the potential remedy will achieve the remediation objectives. An estimate of the time frame necessary to achieve the goals shall be included. Contingent remedies may be proposed if there is doubt if the initial remedy will be successful (e.g., contingent remedies to innovative technologies).

3. Control of Sources of Releases

The Permittee shall address the issue of whether source control measures are necessary, and if so, the type of actions that would be appropriate. Any source control measure proposed should include a discussion on how well the method is anticipated to work given the particular situation at the facility and the known track record of the specific technology.

4. Comply With any Applicable Standards for Management of Wastes

The Permittee shall include a discussion of how the specific waste management activities will be conducted in compliance with all applicable state and federal regulations (e.g., closure requirements, LDRs)

5. Other Factors

There are five general factors that will be considered as appropriate by EPA in selecting/approving a remedy that meets the four standards listed above. These five decision factors include:

- a. Long-term reliability and effectiveness;
- b. Reduction in the toxicity, mobility or volume of wastes;
- c. Short-term effectiveness;
- d. Implementability; and
- e. Cost.

Examples of the type of information to include are provided below:

- a. Long-term reliability and effectiveness: The Permittee may consider whether the technology, or combination of technologies, have been used effectively under analogous site conditions, whether failure of any one technology in the alternative would have any immediate impact on receptors, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. In addition, each corrective measure alternative should be evaluated in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the level of effectiveness can be maintained.
- b. Reduction in the toxicity, mobility or volume of wastes: As a general goal, remedies will be preferred that employ techniques that are capable of eliminating or substantially reducing the potential for the wastes in SWMUs and/or contaminated media at the facility to cause future environmental releases. Estimates of how the corrective measure alternative will reduce toxicity, mobility and or volume of the waste is required and may be accomplished through a comparison of initial site conditions to expected post-corrective measures conditions.

- c. Short-term effectiveness: The Permittee shall evaluate each corrective measure alternative for short-term effectiveness. Possible factors to consider are fire, explosion, exposure to hazardous constituents and potential threats associated with the treatment, excavation, transportation and re-disposal or containment of the waste material.
- d. Implementability: Information to consider when assessing implementability include:
 - i. The administrative activities needed to implement the corrective measure alternative (e.g. Permits, rights of way, etc.) and the length of time these activities will take;
 - ii. The constructibility, time for implementation, and time for beneficial results;
 - iii. The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and
 - iv. The availability of prospective technologies for each corrective measure alternative.
- e. Cost: The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. The capital costs shall include, but are not limited to, costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, Permitting, health and safety measures, etc. The operation and maintenance costs shall include labor, training, sampling and analysis, maintenance materials, utilities, waste disposal and/or treatment, etc. Costs shall be calculated as the net present value of the capital and operation and maintenance costs.

F. Justification and Recommendation of the Corrective Measure or Measures

The Permittee shall justify and recommend in the CMS Report a corrective measure alternative for consideration by the Agency. Such a recommendation should include a description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above. In addition, this recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Regional Administrator will select the corrective measure alternative or alternatives to be implemented based on the results presented in the CMS Report.

APPENDIX D

Schedule of Compliance

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs <i>Condition II.B.1. and Condition II.B.2.</i>	Within fifteen (15) calendar days of discovery
SWMU Assessment Report <i>Condition II.B.3.</i>	Within ninety (90) calendar days of notification*
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs <i>Condition II.C.1.</i>	Within fifteen (15) calendar days of discovery
Confirmatory Sampling Work Plan for SWMUs or AOCs identified in Appendix A.3 <i>Condition II.D.1</i>	Within forty-five (45) calendar days after effective date of Permit if there is no approved SMP. If there is an approved SMP then the schedule in it may be followed (if not exceeding 90 days)*
Confirmatory Sampling Work Plan for SWMUs identified under Condition II.B.4. or AOCs identified under Condition II.B.1. <i>Condition II.D.2.</i>	Within forty-five (45) calendar days of notification by the Regional Administrator (RA)*
Confirmatory Sampling Report <i>Condition II.D.5.</i>	In accordance with the approved CS Work Plan*
RFI Work Plan for SWMU(s) and AOC(s) Identified under Condition II.B.4., Condition II.C.2., or Condition II.D.6. <i>Condition II.E.1.b.</i>	Within ninety (90) calendar days after receipt of notification by Regional Administrator (RA) which SWMUs or AOCs require an RFI*
Draft RFI Report <i>Condition II.E.3.a.</i>	In accordance with the approved RFI Work Plan*
Final RFI Report <i>Condition II.E.3.c.</i>	Within thirty (30) calendar days after receipt of RA's final comments on Draft RFI Report*

Schedule of Compliance	Due Date
RFI Progress Reports <i>Condition II.E.3.d.</i>	Quarterly, beginning ninety (90) calendar days from the start date specified by the RA * **
Interim Measures Work Plan <i>Condition II.F.1.a.</i>	Within thirty (30) calendar days of notification by RA*
Interim Measures Progress Reports <i>Condition II.F.3.a.</i>	In accordance with the approved Interim Measures Work Plan *** or semi-annually for Permittee initiated IM*
Interim Measures Report <i>Condition II.F.3.b.</i>	Within ninety (90) calendar days of completion*
CMS Work Plan <i>Condition II.G.1.a.</i>	Within ninety (90) calendar days of notification by RA that a CMS is required*
Implementation of CMS Work Plan <i>Condition II.G.2.</i>	Within fifteen (15) calendar days after receipt of RA approval of Plan*
Draft CMS Report <i>Condition II.G.3.a.</i>	In accordance with the schedule in the approved CMS Work Plan*
Final CMS Report <i>Condition II.G.3.a.</i>	Within thirty (30) calendar days of RA's final comments on Draft CMS Report*
Noncompliance/Imminent Hazard Report <i>Condition I.D.14.</i>	Oral within 24 hours and written within fifteen (15) calendar days of becoming aware of the hazardous circumstances*

Schedule of Compliance

Due Date

The above reports must be signed and certified in accordance with 40 CFR §270.11.

* Schedule of Compliance for Site Management Plan may alternatively be used, with the Regional Administrator's consent (as per Condition II.I.4).

** This applies to Work Plan execution that requires more than one hundred eighty (180) calendar days

*** This applies to Work Plan execution that requires more than one year.

APPENDIX E

Action Levels

APPENDIX E

ACTION LEVELS

I. Definition

Action levels are conservative health-based concentrations of hazardous constituents determined to be indicators for the protection of human health or the environment. Action levels shall be set for all hazardous constituents, a subset of hazardous wastes, identified in the RFI Report(s) or for those hazardous constituents which the Regional Administrator has reason to believe may have been released from a solid waste management unit (SWMU) or Area of Concern (AOC) at the facility. Should the concentration of a hazardous constituent(s) in an aquifer, surface water, soils, or air exceed its action level for any environmental medium, the Regional Administrator may require the Permittee to conduct a Corrective Measure Study (CMS) to meet the requirements of Permit Condition II.G., Appendix C, and 40 CFR §264.101. If the Regional Administrator determines that a constituent(s) released from a SWMU or AOC in quantities below its respective action level(s) may pose a threat to human health or the environment, given site-specific exposure conditions, cumulative effects, ecological concerns, etc., then the Regional Administrator has the authority to require a CMS to meet the requirements of Permit Condition II.G., Appendix C, and 40 CFR §264.101.

Action levels shall be concentration levels which satisfy the following criteria:

- A.
 - 1. Is derived in a manner consistent with EPA guidelines for assessing human and environmental health risks from hazardous constituents; and
 - 2. Is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act (TSCA) Good Laboratory Practice Standards, or equivalent; and
 - 3. For human health action levels to address carcinogens, represents a concentration associated with an excess upper bound lifetime cancer risk of 1×10^{-6} for carcinogens due to continuous constant lifetime exposure; and
 - 4. For human health action levels to address systemic toxicants, represents a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime.
- B. For constituent(s) detected in groundwater, air, surface water, or soils, for which a concentration level that meets the criteria specified in section I.A.1 through I.A.4 of this appendix is not available or possible, the action level for the constituent(s) shall be the background concentration of the constituent(s).

II. Groundwater

- A. Action levels for constituents in groundwater shall be concentrations specified as:
 - 1. MCLs; or
 - 2. For constituents for which MCLs have not been promulgated, a concentration which satisfies the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

- B. In deriving human health action levels for constituents for which MCLs have not been promulgated, the recommended equations/assumptions shall be that followed by Region 3 in its Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

III. Surface Water

- A. Action levels for constituents in surface water shall be concentrations specified as:

1. Water Quality Standards established pursuant to the Clean Water Act by the State in which the facility is located, where such standards are expressed as numeric values; or
2. Numeric interpretations of State narrative water quality standards where water quality standards expressed as numeric values have not been established by the State; or
3. MCLs for constituents in surface water designated by the State for drinking water supply, where numeric values or numeric interpretations, described in paragraphs 1 and 2, are not available; or
4. For constituents in surface waters designated by the State for drinking water supply for which numeric values, numeric interpretations, or MCLs are not available, a concentration which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated assuming exposure through consumption of the water contaminated with the constituent; or
5. For constituents in surface waters designated for use or uses other than drinking water supply and for which numeric values or numeric interpretations have not been established, a concentration established by the EPA Regional Administrator which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

- B. In deriving human health action levels for constituents in surface water, the recommended equations/assumptions shall be that followed by Region 3 in its Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

IV. Air

- A. Action levels for constituents in air shall be defined as concentrations which meet the criteria specified in section I.A.1 through I.A.4. The action levels for air shall be measured or estimated at the facility boundary, or another location closer to the unit if necessary to protect human health and the environment.

- B. In deriving human health action levels for constituents in air, the RfC should be utilized as the action level, where available. The RfC includes exposure assumptions, and no calculations are necessary to calculate an action level. If a RfC is not available, the recommended methodology/assumptions shall be that followed in the Region 3 Quarterly Risk-Based Concentration Tables. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

V. Soils

- A. Action levels for constituents in soils shall be concentrations which meet the criteria specified in section I.A.1 through I.A.4 of this appendix.
- B. The calculation of human health action levels for soil includes several specific exposure routes which must be evaluated individually: 1) ingestion, 2) inhalation and 3) leachability to groundwater. In deriving action levels to address ingestion, inhalation and leaching, the methodology/assumptions found in the most recent Soil Screening Level Guidance should be reviewed for appropriate equations and assumptions. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

VI. Sediment

- A. Action levels for constituents in sediment shall be based on whether human health or ecological health is the major concern. If ecological concerns are deemed to predominate, then action levels for constituents in sediment shall be concentrations based on the latest sediment screening values as calculated by Region 4. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves that right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

If an ecological sediment screening value for a constituent of concern has not been generated by Region 4 and cannot be generated using the criteria in sections I.A.1 and I.A.2, then the ecological action level for sediment shall be background. If human health is the prevailing concern, then the human health action level for sediment shall address all applicable exposures.

APPENDIX F

Corrective Action Guidance Toolbox

***R4 CA TOOLBOX: 22 Sources of Guidance
for RCRA HSWA Corrective Action***

August 1997
Comments are EPA Region 4 Interpretations

The guidance documents referenced herein are intended to assist the Permittee(s) in complying with the terms of this Permit. Inclusion of the guidance documents in this Permit does not change the legal status of the guidance documents. The policies set out in these guidance documents are not final agency action, but are intended solely as guidance. They are not intended, nor can they be relied upon, to create any right, benefit or trust responsibility, enforceable by any party, in litigation with the United States.

1. ***Proposed Subpart S.*** (Vol. 55, No. 145, Friday, July 27, 1990). This remains the most official guidance for RCRA Corrective Action, in general, besides the statute and 40 CFR 264.101. The ***Advanced Notice of Public Rulemaking (ANPRM)*** for Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule, (FR 19432, May 1, 1996) introduces EPA's latest strategy for finalizing Subpart S regulations. The ANPRM discusses, "what works well in the corrective action process", and gives the latest proposals on RCRA HSWA flexibility and how corrective action may work in the future. For quick reference, see Section III. CA Implementation (p. 19440) and Section IV. CA Program Priorities (p.19455).
2. ***Final RCRA Corrective Action Plan.*** May 1994 (EPA 520-R-94-004). This "final" document is the basis for Appendices B (RFI) and C (CMS) of the model HSWA Permit. It is primarily an outline of approaches with less focus on technical or specific guidance. New developments in the corrective action process are discussed, such as: streamlining, phased investigations, interim measures to achieve stabilization, CAMUs/TUs, QAPP/DQOs and public involvement plans.
3. ***Interim Final RFI Guidance.*** May 1989 (EPA 530/SW-89-031). This guidance is still the basis for a lot of the fundamental concepts for investigations in RCRA. The Proposed Subpart S, however, updates many of the "concepts" for approaching an investigation. See also the ANPRM noted in #1 above.
4. ***"Extent of Contamination And Scope Of Investigations".*** May 1996. This Region 4 memo attempts to answer the question - When is the investigation complete for RFIs and Confirmatory Sampling?
5. ***"Risk Assessments Within the HSWA Program".*** August 1996 Final. This Region 4 memo attempts to explain how the "risk assessment" concept fits into the RCRA correction action process.
6. ***RCRA Permit Appeal Orders and Remands.*** HQ is currently organizing a complete compendium of these. For now, the Region has several binders full of the decisions from 1989 to the Present issued by the EPA Board of Appeals, and the EPA Administrator (these are the older decisions). Though occasionally cumbersome, these decisions remain good sources for corrective action guidance.
7. ***EPA Soil Screening Guidance.*** User's Guide- April 1996 (EPA/540/R-96/018) & Fact Sheet- June 1996 (Pub. 9355.4-14FSA). Originally intended for Superfund use, this tool can standardize and accelerate the evaluation and cleanup of contaminated soils by developing risk-based numbers for screening out specific constituents at specific SWMUs. It considers constituents leaching to ground water and is essentially the "action level" concept applied to Superfund "NPL sites with future residential land-use scenarios". The SSL process includes developing a conceptual site model and a S&P plan for surface soils. The current model HSWA Permit references this for soil action levels.

8. **Risk-based Concentration Table.** April 1996 (updated semi-annually). This Region 3 guidance is also a practical application of the RCRA "action level" concept. One approach to using this and the Draft Soil Screening Guidance is to reference the Proposed Subpart S as guidance and inform Permittee(s) that these lists might provide a practical way to satisfy Permit requirements in accordance with the guidance. This table is updated quarterly. See also #5 above and #10 below for specifics on the recommended use of this table.
9. **Corrective Action Management Units and Temporary Units; Corrective Action Provisions; Final Rule,** February 16, 1993. These are concepts initially introduced in the Proposed Subpart S to help facilities effectively perform corrective action given the restrictions of the Land Disposal Regulations. Lawsuits have slowed the implementation of the CAMU Rule, and the **HWIR Contaminated Media Proposed Rule** (Vol. 61, No. 83, April 29, 1996) proposes to withdraw the CAMU regulations. The purpose of the HWIR Contaminated Media Rule is to, "...develop more flexible management standards for media and wastes generated in the course of site cleanups."
10. **Supplemental Guidance to RAGS, Region 4 Bulletins on Human Health Risk Assessment and Ecological Risk Assessment,** November 1995. This guidance is intended mostly for Superfund use as RCRA risk assessments are not specifically required by any formal program guidance or regulation. It outlines Region 4 Superfund's approach to risk assessment and is a good risk managers tool. RCRA's approach to risk assessments has never been formalized in EPA HQ guidance. However #5 above does recommend that HSWA risk assessments should follow Superfund risk guidance, including this guidance (#10).
11. **Land Use in the CERCLA Remedy Selection Process.** 05/25/95 (OSWER Directive No. 9355.7-04). This HQ memo stresses that for Superfund, future land use decisions should be more realistic so that clean up numbers are not too stringent and thus possibly technically impractical. The directive states that, "remedial action objectives developed during the RFI/FS should reflect the reasonably anticipated future land use." It lists 19 sources and types of information that might help in determining the "reasonably anticipated future land use." This means that, where appropriate, scenarios other than residential should be considered for Superfund. The memo also implies that RCRA should do the same. The concept is similar to that described in the Subpart S discussion on conditional remedies. A copy is archived at G:\USER\SHARED\STREAM.LIN\LANDUSE.DIR.
12. **Guidance on RCRA Corrective Action Decision Documents: The Statement of Bases Final Decision and Response to Comments.** February 1991 (EPA/540/G-91/011). This is the latest for making the final corrective action decisions when modifying Permits. See also #1 above.
13. **Corrective Action Conference Calls.** Scanning the latest couple of months summaries can help you find the latest "trend" for any thing that doesn't have final guidance. It can also lead to an HQ contact. Agendas and summaries can be found at G:\USER\SHARED\AAA-CAR.
14. **Media Clean Up Standards/Conditional Remedy Paper.** 02/29/96. This regional guidance clarifies how to set media clean up standards when selecting a conditional remedy.
15. **Management of Contaminated Media.** Guidance Number TSC-92-02. 12/28/92. This regional memo discusses how to manage waste from an investigation and how to determine if it is classified as hazardous or solid waste.
16. **Technical Impracticability of Groundwater Remediation.** OSWER Directive 9234.2-025. 10/04/94. This guidance clarifies how EPA will determine whether ground water restoration is technically impractical and what alternative measure or actions must be undertaken to ensure the final remedy is protective of human health and the environment. This Technical Impracticability decision can be part of the RFI, remedial action, or evaluation of remedy performance.

17. **Presumptive Remedies.** EPA has developed or is developing presumptive remedy guidelines to streamline RFI site investigations and speed up the selection of cleanup actions and help document a conditional remedy decision. Preferred technologies, sampling strategies, preliminary remediation goals/risk-based concentrations limits and historical patterns of remedy selection are discussed. Presumptive remedies are expected to be used at all appropriate sites. Examples are as follows:

- a. Fact Sheet: Policy and Procedures (Directive 9/93);
- b. Wood Treaters- soil, sediments and sludges (Directive 12/95; User's Guide 7/96);
- c. Municipal Landfills (Directive 9/93);
- d. PCB Contaminated Sites (final);
- e. Manufactured Gas Plants/Coal Gasification (draft 1/94);
- f. Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites (OSWER Directive 9283.1-12, final 10/96);
- g. VOC Contaminated Soil- Site Characterization and Technology Selection (OSWER Directive 9355.0-48FS, 9/93);
- h. Grain Fumigation Sites- Site Characterization and Remedy Selection for Contaminated Groundwater (draft 6/94);
- i. Metals Sites- soil and sediment (draft 8/96);
- j. CERCLA Landfill Caps RI/FS Data Collection Guide (Directive 8/95).

18. **New Final and Proposed Rules.** Look for these on G:/USER/SHARED/RULES.

19. **Ecological Risk Assessment Guidance for Superfund: Process for Designing And Conducting Ecological Risk Assessments.** Review Draft 09/26/94. USEPA Environmental Response Team, Edison, NJ. An 8-Step process for ecological risk assessment. Based on recent regional training, this is the guidance the experienced risk assessors recommend.

20. **RCRA Permit Policy Compendium.** Originally compiled in late 1995, this is a reference for the Regions and States of the HQ Permitting policies and procedures. The most direct way to access this is to search by a keyword on the computer. There's a hard copy of the compendium in the Region; and in Windows click on Agency Lan Services, then Information Services, then RCRA Policy Compendium.

21. **Natural Attenuation (NA).** Miscellaneous guidance, protocols and regional approaches have been developed supporting natural attenuation. NA has been demonstrated at groundwater sites contaminated with BTEX and chlorinated aliphatic hydrocarbons. Thus, NA is being recognized as a "potentially viable corrective action alternative in certain site situations." NA decisions are never viewed as no action or do nothing alternatives. Typically, source removal or containment and stabilization are required. Also, the facility should present a comprehensive long-term monitoring program and contingency plans to demonstrate their commitment to proving the effectiveness of natural attenuation as a remedial option.

- a. Draft Region 4 Approach to NA of Chlorinated Solvents (draft 3/96)
- b. Use of Monitored NA at Superfund, RCRA Corrective Action and UST Sites (OSWER Directive 9200.4-17, draft 1/97).

22. EPA Rules of Thumb: Remedy Selection Process; Management Review Triggers; Remedy Selection Summary Sheet.

These drafts (11/96) are products of the Superfund Reform Effort are receiving RCRA review and feedback. They correspond to three major policy areas in the remedy selection/interim measures process: assessment and management of risk; treatment of principal threat versus low-level threat wastes; and appropriate groundwater response actions. The purpose of this initiative is to promote consistent, reasonable and cost-effective decisions.

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