

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Stewardship Permit

Pursuant to Chapters 439 and 446k of the Connecticut General Statutes, a permit is issued to:

Permittee:

United States Army
Stratford Army Engine Plant
550 Main Street, Stratford, CT 06615

Facility Identification:

EPA ID No. CTD001181502
Permit Number: DEP/HWM/CS-134-003

To perform site-wide environmental investigation and cleanup ("closure", "post-closure care" and "corrective action measures") at the former hazardous waste storage, treatment and disposal facility in accordance with Connecticut General Statutes ("CGS") Sections 22a-6, 22a-449(c) and 22a-454, and Section 22a-449(c)-110 of the Regulations of Connecticut State Agencies ("RCSA") as specified in the conditions set forth in this permit.

This permit regulates and authorizes the Permittee to perform closure, post-closure care and corrective action measures at the facility. The permit does not authorize operation of a hazardous waste management facility in the sense of treating, storing, or disposing of hazardous wastes generated on-site.

All terms in this permit are defined in the permit or if not defined in the permit are as defined in Section 22a-449(c)-100 of the RCSA or in Title 40 of the Code of Federal Regulations ("CFR") Parts 260, 261, 262, 264, 268, 270, 273 or 279.

This permit is based on the information described in the Resource Conservation and Recovery Act ("RCRA") Part A filed by the applicant on November 19, 1980 and the Stewardship application filed on September 3, 2008. The Permittee must keep records of all data used to complete the permit application and any supplemental information submitted for the effective term of this permit. The permit application and RCRA Part A filing are incorporated by reference as part of the permit. Any false statements or inaccuracies contained in the information submitted by the Permittee may result in the suspension, revocation or modification of this permit and civil or criminal enforcement action.

The Permittee shall comply with all terms and conditions contained in the following sections of the permit: Section I (Standard Facility Conditions) pages 1 through 11; Section II (Authorized Activities) pages 12 through 29; Section III (Compliance Schedule) pages 30 through 32; Appendices B-1, B-2 and B-3; and the information contained in the Permittee's permit application, except where the application is superseded by the more stringent conditions contained herein. Any violation of any provision of this permit may subject the Permittee to enforcement action pursuant to the CGS including but not limited to Sections 22a-6a and 22a-131.

This permit is transferrable upon the Commissioner's written authorization, provided the Permittee and potential transferee have complied with the requirements set forth in CGS Section 22a-6o.

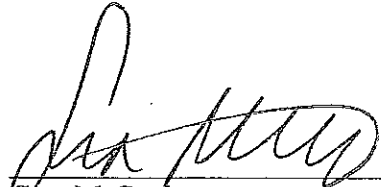
This permit may be revoked, suspended, modified, transferred, or reissued, in order to comply with applicable law. The Commissioner may also modify this permit when it is deemed necessary to do so.

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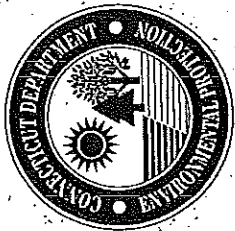
The Permittee shall submit a revised permit application to the Commissioner at least one hundred and eighty (180) calendar days before making any changes to any of the permitted areas or activities. Any application shall be approved in writing by the Commissioner prior to the Permittee implementing such change. The Permittee shall submit an application for a renewal of this permit to the Commissioner at least one hundred eighty (180) calendar days prior to its expiration date.

This permit shall become effective on October 2, 2008 and shall expire ten (10) years from this date or on October 2, 2018.

10/2/08
Date



Gina McCarthy
Commissioner
Department of Environmental Protection



CERTIFICATE OF STEWARDSHIP

The Commissioner of Environmental Protection has made a final administrative decision to issue a Stewardship Permit to the **United States Army** for the Stratford Army Engine Plant,

EPA ID No: CTD001181502, located at 550 Main Street, Stratford, Connecticut.

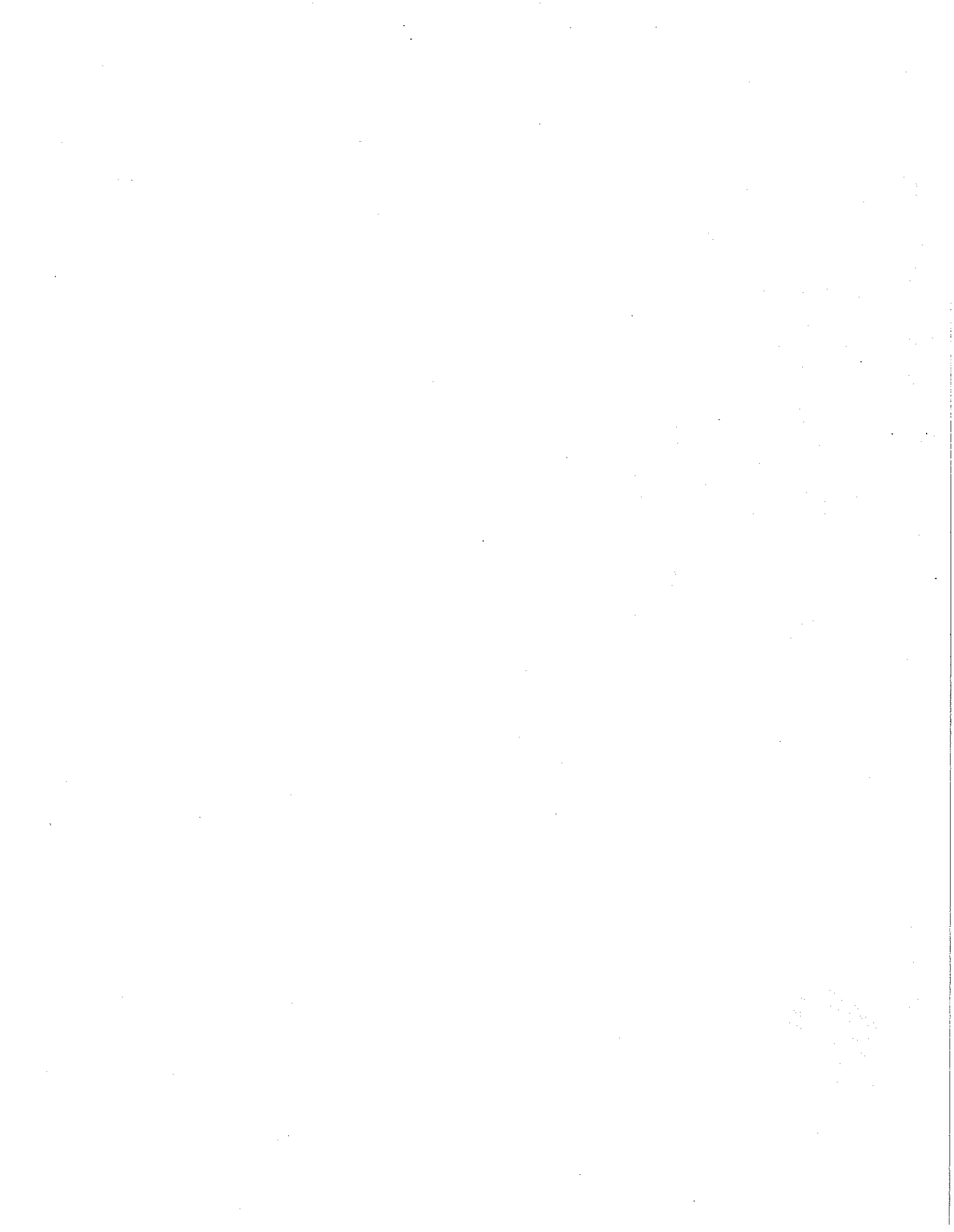
This permit is for the initiation and continuation of facility closure and corrective action activities, meaning environmental investigation and remediation, at the facility and may be transferred upon the written authorization of the Commissioner.

Opportunity for public comment has been provided in accordance with state and federal requirements.

This action is based on the obligation to initiate and complete environmental clean-up work required by state laws and regulations, including RCRA Corrective Action and Closure, and requires compliance with Connecticut's Hazardous Waste Management Regulations and Remediation Standard Regulations, as well as state and federal guidance.

Oct 2, 2008

Gina McCarthy
Commissioner



SECTION I

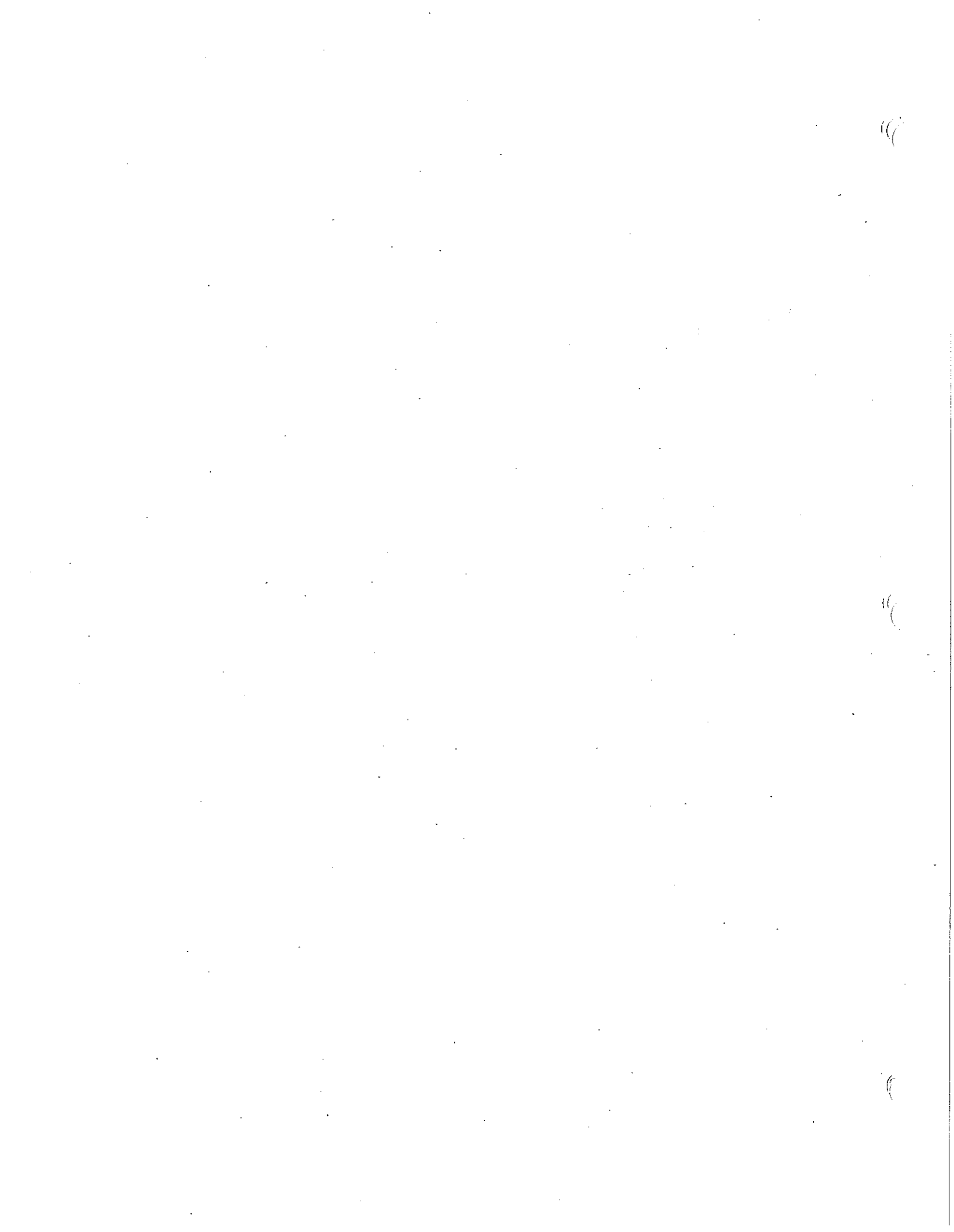
Stewardship Permit
Standard Facility Conditions

Stratford Army Engine Plant
EPA ID No. CTD001181502
Permit No. DEP/HWM/CS-134-003



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**STEWARDSHIP PERMIT
SECTION I
STANDARD FACILITY CONDITIONS**

A. EFFECT OF PERMIT

Except as is provided in the Regulations of Connecticut State Agencies (RCSA) Section 22a-449(c)-110(a)(2) and except for any federally enforceable requirement(s), compliance with this permit during its term constitutes compliance, for purposes of enforcement, with Connecticut General Statutes (CGS) Section 22a-449(c). This permit may be modified, revoked and reissued, or terminated during its term as set forth in RCSA Section 22a-449(c)-110(a)(1), which incorporates by reference Title 40 of the Code of Federal Regulations (40 CFR) Parts 270.41, 270.42 and 270.43.

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

Term (Duration) - The effective date of this permit is the date on which the permit is signed by the Commissioner. This permit is in effect for a term of ten (10) years and may be renewed at the end of the term, in accordance with the requirements described in Condition No. I.E.2., "Duty to Reapply."

In accordance with 40 CFR 270.73(a), upon issuance of this permit the Permittee's Interim Status granted under RCRA is hereby terminated. In addition, upon the Commissioner's determination that the Permittee has satisfied the requirements of this permit, a Certificate of Completion shall be issued to the Permittee.

B. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

C. CONFIDENTIAL INFORMATION

The Permittee may claim that any information required to be submitted by this permit contains or constitutes confidential information in accordance with CGS Section 1-210(b).

D. IMMINENT HAZARD ACTIONS

Notwithstanding any provision of this permit, enforcement actions may be brought pursuant to Section 7003 of the Resource Conservation and Recovery Act (RCRA), CGS Section 22a-6, or any other applicable law.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply with all conditions of this permit except that the Permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an Emergency Permit that explicitly authorizes any such noncompliance. Noncompliance by the Permittee with the terms of this permit, except under the terms of an Emergency Permit, shall constitute a violation of this permit and any applicable laws or regulations and is grounds for enforcement action, for permit termination, revocation and reissuance or for denial of a permit renewal. Emergency Permit as used herein shall mean Emergency Permit as identified in RCSA Section 22a-449(c)-110(a)(1) incorporating 40 CFR 270.61.

Unless superseded by a more stringent provision in this permit, the Permittee shall comply with all of the applicable requirements of RCSA Sections 22a-133k-1 et. seq. ("Remediation Standard Regulations" or "RSRs"), as amended, and 22a-449(c)-100 et. seq., including any portion of 40 CFR 260 through 279 incorporated by reference therein.

A violation of this permit for purposes of state and federal law constitutes a violation of a RCRA permit.

2. Duty to Reapply. This permit shall expire within ten (10) years of the effective date of this permit. If the Permittee wishes to continue engaging in an activity regulated by this permit after the expiration date of this permit, the Permittee shall apply for renewal of this permit in accordance with RCSA Sections 22a-3a-5 and 22a-449(c)-104(a) incorporating 40 CFR 264.101 and any other applicable law.
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.
4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce any activity authorized by this permit in order to maintain compliance with the conditions of this permit, unless otherwise required to do so by another state or federal authority.
5. Duty to Mitigate. In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent its noncompliance from having significant adverse impacts on human health or the environment. No action taken by the Permittee pursuant to this section of this permit shall affect or limit the Commissioner's authority under any other statute or regulation.
6. Permit Actions. This permit may be modified, revoked and reissued, or terminated as provided for in 40 CFR 270.41, 270.42 or 270.43, and in

accordance with all applicable law, including but not limited to, CGS Sections 22a-6g and 6h and RCSA Sections 22a-3a-5 and 22a-449(c)-110. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any condition of this permit.

7. Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege to the Permittee.
8. Duty to Provide Information. The Permittee shall furnish to the Commissioner, within a reasonable time, any information which the Commissioner 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 Commissioner, upon request, copies of records required to be kept by this permit.
9. Operation and Maintenance of Remedial Systems. The Permittee shall at all times properly operate and maintain all facilities and remedial 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, at a minimum, 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, auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.
10. Inspection and Entry. The Permittee shall allow the Commissioner, 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 Site 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 shall be kept under the conditions of this permit;
 - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, 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 substance or parameters at any location.

11. Security. Pursuant to RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.14, the Permittee shall prevent the unknowing entry, and minimize the possibility for unauthorized entry, of persons or livestock onto the active portion of the Facility. The Permittee shall secure the Facility to the extent necessary to protect human health.

12. Preparedness, Prevention, Contingency Plan and Emergency Procedures.
 - (a) The Permittee shall comply with the requirements of RCSA Section 22a-449(c)-104(a)(1) incorporating 40 CFR 264 Subpart C "Preparedness and Prevention" and 40 CFR 264 Subpart D "Contingency Plan and Emergency Procedures" until the termination of this permit.

 - (b) The Permittee shall ensure that each entity under contract to provide emergency response services at the Facility has a permit, issued by the Commissioner pursuant to CGS Section 22a-454, authorizing such entity to provide emergency response services. The Permittee shall maintain a copy of such permit in the operating record for its Facility. The Permittee shall ensure that any action(s) taken by an entity (including such entity's officers, employees, agents and subcontractors) providing emergency response services at its Facility conforms to the requirements of this permit.

 - (c) The Permittee shall ensure that each entity under contract with the Permittee to provide emergency response services visits the Site annually so that such entity is familiar with the Permittee's Site and can respond to an emergency. The Permittee shall maintain in the operating record for its Facility a certification, in accordance with the requirements of RCSA Section 22a-449(c)-110 incorporating 40 CFR 270.11, attested to by each emergency response entity under contract with the Permittee to provide emergency response services, stating that such entity has complied with the requirements specified in this paragraph.

13. Monitoring and Records.
 - (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

 - (b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, the certification required by RCSA Section 22a-449(c)-104 incorporating 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 (3) years from the date of the sample, measurement, certification, report or application. This period may be extended by request of the Commissioner at any time. The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface

elevations, for the active life of the Facility, and for disposal facilities for the post-closure care period as well.

- (c) Records for monitoring information shall include:
 - (i) The date, exact place and time of sampling or measurements;
 - (ii) The individual(s) who performed the sampling or measurements;
 - (iii) The date(s) analyses were performed;
 - (iv) The individual(s) who performed the analyses;
 - (v) The analytical techniques or methods used; and
 - (vi) The results of such analyses.

- 14. Operating Record. The Permittee shall maintain, in writing, the following information in the Facility's operating record until termination of this permit:
 - (a) Summary reports and details of all incidents that require implementing the Contingency Plan pursuant to 40 CFR 264 Subpart D;
 - (b) Records and results of inspections as required by this permit, except this data need only be kept for three (3) years from the date of any such inspection;
 - (c) Monitoring, testing or analytical data, and corrective action where required by 40 CFR 264 Subpart F or any regulatory section noted in 40 CFR 264.73(b)(6);
 - (d) All closure, post-closure and corrective action cost estimates under RCRA Section 22a-449(c)-104 and 40 CFR 264.142 and 40 CFR 264 Subpart H; and
 - (e) Any other information required by this permit or by any applicable law to be maintained in the Facility Operating Record.

- 15. Signatory Requirements. The Permittee's application and all reports or information submitted to the Commissioner by the Permittee pursuant to this permit shall be signed by the person specified in and contain the certification prescribed in RCRA Section 22a-449(c)-110 incorporating 40 CFR 270.11.

- 16. Transfers. This permit is not transferable to any person without the advanced written authorization of the Commissioner, who may request whatever information the Commissioner deems necessary regarding the potential transferee. Before any such transfer, the Permittee and any proposed transferee shall fully comply with the requirements of CGS Section 22a-60. The Commissioner may require modification or revocation and reissuance of this permit to change the name of the Permittee and as an incident to any such transfer, incorporate such other requirements, as the Commissioner deems necessary.

In advance of transferring ownership or operation of its Facility prior to the termination of this permit, the Permittee shall notify the prospective new owner or

operator in writing of the requirements of this permit, 40 CFR 264 through 270, and of the RCSA Section 22a-449(c)100 et. al. The Permittee shall provide such prospective new owner or operator with a copy of this permit.

The Permittee's failure to notify the new Permittee of the requirements of this permit in no way relieves the new Permittee of his obligations to comply with all applicable requirements.

If the transfer of the property takes place and the Permittee retains the permit, an access agreement between the Permittee and the prospective new owners of the Facility shall be approved by the Commissioner prior to the sale of the facility/site. The agreement shall include the anticipated times, locations and frequency of access needed in order for the Permittee to complete closure, post-closure care and corrective action activities and conduct inspection, operation and management activities for all remedial systems. A copy of the Operations and Management Plan, referenced in Condition No. I.E.9. of this permit, shall be provided to the prospective new owner prior to transfer of the property.

17. Reporting Requirements.

- (a) Anticipated Non-Compliance. The Permittee shall give as much advance written notice as possible to the Commissioner of any planned changes in the Facility or activity, which may result in non-compliance with any requirement of this permit.
- (b) Compliance Schedules. Except where otherwise provided for in this permit, reports of compliance and non-compliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule (Section III) of this permit, shall be submitted no later than fourteen (14) calendar days following each schedule date, to the extent such reports are required herein.
- (c) Twenty-four Hour Reporting.
- (i) The Permittee or designee shall orally report to the Commissioner any remediation or waste related activity at its Facility, irrespective of whether such activity is in compliance with the requirements of this permit, which does or may pose an imminent and substantial endangerment to human health or the environment, immediately but not later than twenty-four (24) hours from the time the Permittee becomes aware or should be aware of the circumstances causing such endangerment.

The report to the Commissioner shall include:

- (A) Name, address, and telephone number of the Permittee;
(B) Name, address, and telephone number of the Facility;
(C) Date, time and type of incident;
(D) Description of the occurrence and its cause;

- (E) Name and quantity of waste(s) or constituents thereof involved;
 - (F) The extent of injuries, if any;
 - (G) An assessment of actual or potential hazards to human health and the environment;
 - (H) Estimated quantity and disposition of recovered waste that resulted from the incident;
 - (I) All information concerning the release of any waste or constituents thereof that may cause an endangerment to public drinking water supplies; and
 - (J) All information concerning a release or discharge of waste or constituents thereof or of a fire or explosion from the Facility, which could threaten human health or the environment
- (ii) A written submission shall also be provided within five (5) calendar days of the time the Permittee becomes aware of the circumstances described in subdivision (i) above. The written submission shall contain a description of the endangerment and its cause; the period of endangerment including exact dates and times, if the endangerment has been abated, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the endangerment. The Permittee shall maintain in the operating record of its Facility a copy of all such written reports. The Commissioner may waive the five (5) day written notice requirement in favor of a written report within fifteen (15) days of the incident requiring reporting.
- (iii) Nothing in this section shall effect or relieve the Permittee of its obligations under CGS Sections 22a-6u or 22a-450.
- (d) Other Noncompliance. The Permittee shall report all instances of noncompliance with this permit not otherwise required to be reported by this permit to the Commissioner along with any other required monitoring report, no later than thirty (30) days of the date the Permittee is aware, or reasonably should have been aware of any such noncompliance. Any such report shall contain, at a minimum, the information listed in Condition No. I.E.17.(c)(i) of this permit.
- (e) Other Information. When the Permittee becomes aware that it failed to submit any relevant facts or information in a permit application, or submitted incorrect information in a permit application, report or other document provided to the Commissioner regarding this permit, it shall submit such relevant facts or correct information to the Commissioner within thirty (30) calendar days of becoming aware of such facts or information.

18. Computation of Time.

- (a) Except as is expressly provided for in this permit, the computation of time periods set forth in this permit shall be as follows:
- (i) Any time period scheduled to begin on the occurrence of an act or event shall begin on the day after the act or event.
 - (ii) Any time period scheduled to begin before the occurrence of an act or event shall be computed so that the period ends on the day before the act or event.
 - (iii) If the final day of any time period falls on a Saturday, Sunday or a federally or state recognized legal holiday, the time period shall be extended to the next working day.
- (b) Submission of Reports. Where this permit requires the submission of a written report, a notification or other information or documentation to the Commissioner, the report or notification shall be deemed submitted on the date such report, notification or other information is received by the Department of Environmental Protection ("DEP").

19. Availability, Retention and Disposition of Records. The Permittee shall ensure that all records required under RCSA Sections 22a-449(c)-100 to 119, RCSA Section 22a-133k et. seq. (RSRs) or this permit, including all plans, are furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of DEP or Environmental Protection Agency ("EPA").

The retention period for all records required under RCSA Sections 22a-449(c)-100 to 119 and this permit is extended automatically during the course of any unresolved enforcement action regarding the Facility or as requested by the Commissioner or Regional Administrator of EPA.

20. Additional Requirements. Requirements not included in this permit, which become effective by statute or regulation, and not made specifically inapplicable to facilities with a permit, shall apply to the Permittee's Facility. In the event of any conflict between this permit and any such requirement, the Permittee shall comply with the more stringent requirement. If the Permittee does not fully comply with the more stringent requirement, DEP may enforce either requirement.

21. Federal and State Laws. Nothing in this permit shall be construed to prohibit any federal, state or political subdivision thereof from imposing any requirements to the extent authorized by law which are more stringent than those imposed by this permit.

In addition, nothing in the permit shall relieve the Permittee of its obligation to comply with any other applicable federal, state, or local statute, regulation or ordinance.

22. Modification of the Compliance Schedule.
- (a) The Commissioner may modify the Compliance Schedule, Section III, of this permit at any time, if it is deemed necessary.
 - (b) Modifications that are initiated and finalized by the Commissioner shall be in accordance with the requirements of RCSA Section 22a-449(c)-110 incorporating 40 CFR 270 and all applicable provisions. At any time, the Permittee may request to modify the Compliance Schedule of this permit in accordance with the requirements of 40 CFR 270.
 - (c) The Commissioner may grant extensions of submittal due dates based on the Permittee's demonstration that sufficient justification for the extension exists. Extensions to due dates, which this permit explicitly defines as being due by a certain time or during a certain time interval, may be granted by the Commissioner if sufficient justification for the extension is demonstrated by the Permittee. Extensions to permit established schedules must follow the procedures in Condition No. I.E.22.(b).

F. DEFINITIONS

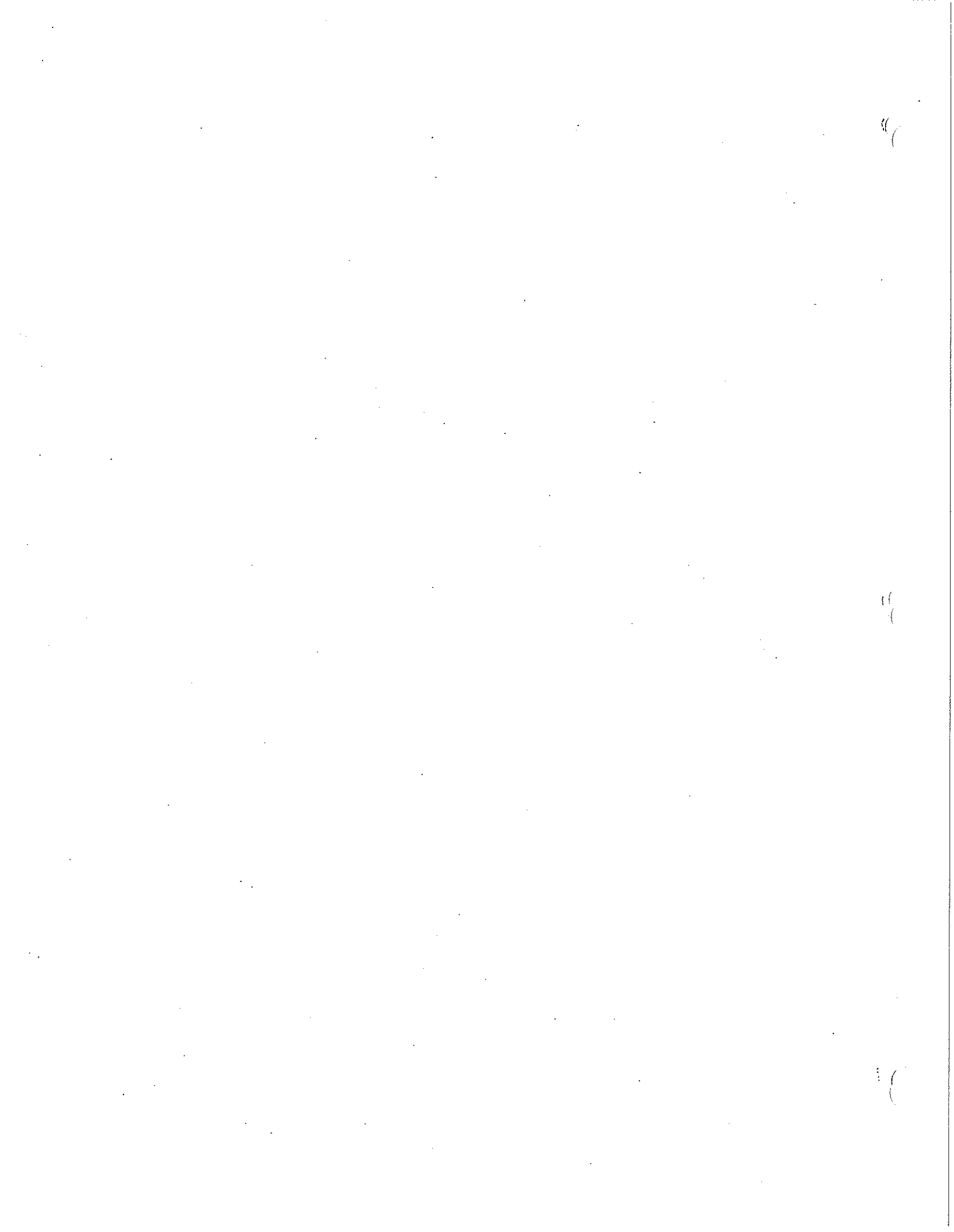
Any term not otherwise defined herein shall be defined as that term is defined in RCSA 22a-449(c)-100 thru 119 incorporated 40 CFR 264 through 279.

1. "CFR" means the Code of Federal Regulations in effect on the date that this permit is issued.
2. "Commissioner" means the Commissioner of Environmental Protection as defined in the CGS Section 22a-2 or the Commissioner's designee.
3. "Facility" shall mean, pursuant to 40 CFR 260.10 all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing or disposing of hazardous waste and all contiguous property under control of the owner or operator. For the purposes of the permit, shall also mean the 76.70-acre parcel of land located at 550 Main Street in Stratford, CT and subject to the requirements of this permit.
4. "Final Closure" means the completion of the closure of all Hazardous Waste Management Units at the Permittee's Facility in accordance with the requirements of this permit.
5. "Hazardous Waste" or "Hazardous Wastes" shall mean hazardous waste as identified or listed as hazardous waste pursuant to 42 U.S.C. Section 6901 et. seq. and RCSA Section 22a-449(c)-101.

6. "Hazardous Waste Management Units", unless specifically limited by this permit or unless the context unequivocally indicates otherwise (e.g., that reference is being made to only one and not all areas), shall mean the following units identified in Table II-1 of this permit: 1) AOC 2 – Hazardous Waste Accumulation Tanks; 2) AOCs 12 and 53 Hazardous Waste Container Accumulation Areas; 3) AOC-13 Container Storage Area; 4) AOC-14 Container Storage Areas A and B; 5) AOC-15 Sludge Roll-off Area; and 6) NPDES Wastewater Treatment Plant.
7. "Main Parcel" means the 51.54 acres of the Site east of Main Street and north of Sniffen Lane, comprising the largest part of the Site, and containing most of the major buildings.
8. "NPDES Wastewater Treatment Plant" shall include the chemical wastewater treatment plant, collection and distribution lines, flow equalization tank, and the following areas of concern identified in Table II-1 of this permit: AOC-8 Collection Lines, AOC-9 Cyanide Destruction Facility, AOC-10 Building 18 Chemical Wastewater Treatment Plant, AOC-19 Chemical Wastewater Treatment Plant Solids Handling Area; and AOC-25 Outfall 008.
9. "Period of Active Remediation" shall mean the period prior to completion of activity conducted pursuant to Section II.B. of this permit, with the exception of that period when the only remaining activity is post-remedial monitoring or monitored natural attenuation.
10. "Permittee" shall mean the person responsible for the overall operation of the facility who has been issued a license by the Commissioner. As used herein "person" is defined in Section 22a-423, Chapter 446k, of the CGS and "license" is defined in Section 4-166, Chapter 54 of the CGS.
11. "Post-Closure Period" means thirty (30) years from the date of certification of closure of a regulated unit. This period may be extended or shortened by the Commissioner in accordance with 40 CFR 264.117(a)(2).
12. "Site" means the same or geographically contiguous property which may be divided by public and private right-of-way, provided the entrance and exit between the properties is at a cross-road intersection, and access is by crossing opposed to going along, the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way that he controls and to which the public does not have access, is also considered part of the site property.

For the purposes of this permit, there are three separate sites: "Main Parcel", "West Parcel", and "South Parcel" that comprise the facility. Herein after the term "site" shall refer to all three separate sites. The terms "facility" and "site" may be used interchangeably in this permit.

13. "South Parcel" means the 21.60 acres of the Site that is south of Sniffen Lane and east of Main Street, including, along with other elements, Building B6, the South Parking Lot, the industrial wastewater treatment facility, and the closed RCRA Land Disposal Units (lagoons).
14. "West Parcel" means the 3.56 acres of the Site that is west of Main Street, comprised of a parking lot.



SECTION II

Stewardship Permit
Authorized Activities

Stratford Army Engine Plant
EPA ID No. CTD001181502
Permit No. DEP/HWM/CS-134-003

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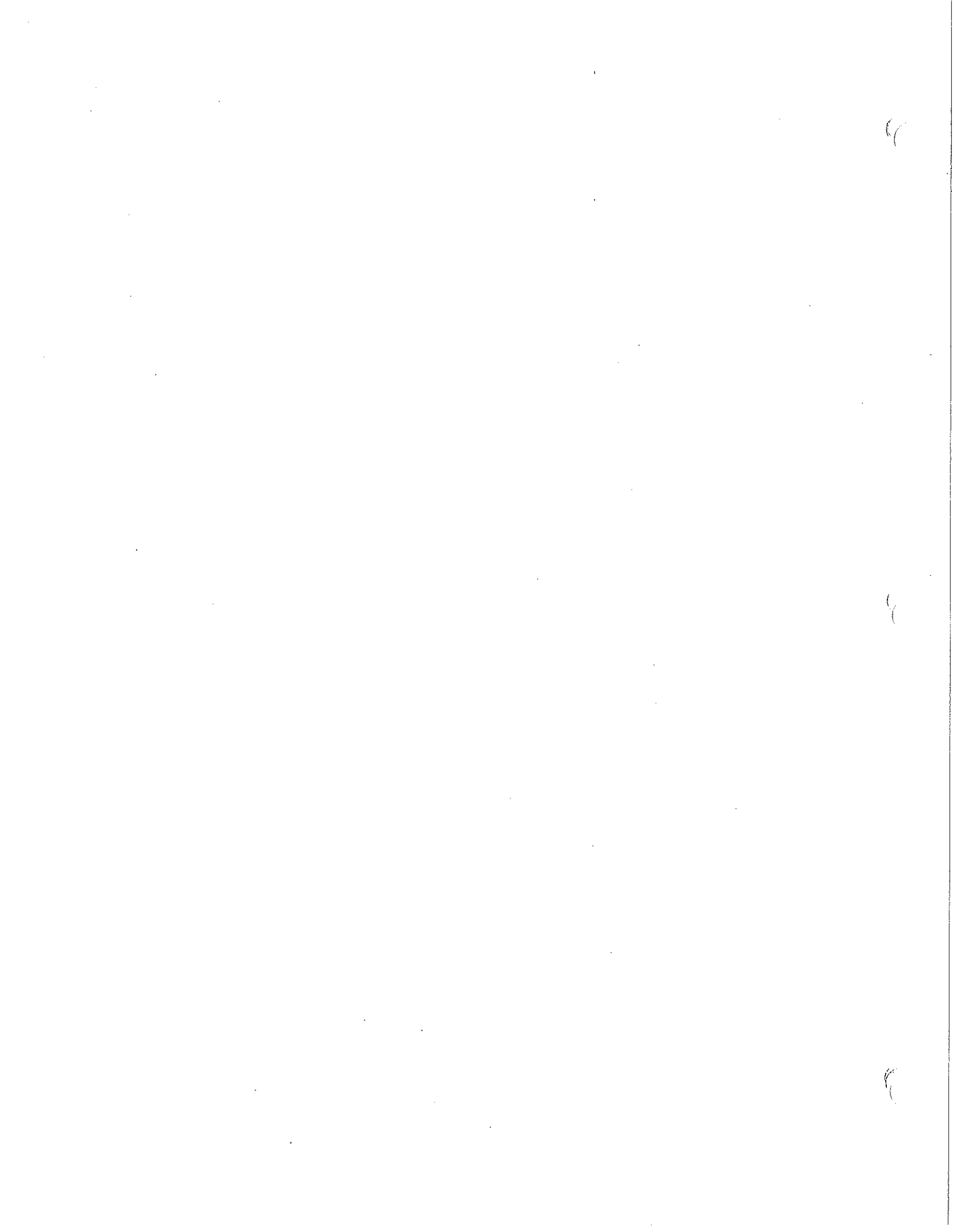
II-1 Areas of Concern

Appendices

B-1 U.S. EPA Environmental Indicator, Migration of Contaminated Groundwater Under Control Worksheet
 B-2 Post-Closure Plan (Textron Lycoming dated 12-17-1991)
 B-3 Remedial Criteria

Figures

Site Plan



SECTION II AUTHORIZED ACTIVITIES

A. RCRA CLOSURE AND POST-CLOSURE REQUIREMENTS.

1. Closure Requirements.

- (a) The Permittee shall prepare and submit a Closure Plan in accordance with the requirements of RCRA Section 22a-449(c)-104(a)(1) incorporating 40 CFR 264 Subpart G for the Commissioner's review and written approval. The Closure Plan shall:
 - (i) Be developed in accordance with the standards set forth in the DEP's *Draft RCRA Closure Plan Guidance – Container Storage Areas and Tank Systems and Treatment, Storage and Disposal Facilities (December 28, 2005)*;
 - (ii) Describe the specific materials stored and activities performed for each Hazardous Waste Management Unit;
 - (iii) Describe the procedures to be used for the removal of any remaining waste(s), the decontamination of the Hazardous Waste Management Units, and the removal of any contaminated structures and equipment;
 - (iv) Include a proposed schedule for all major closure milestones such as removal of waste, implementation of decontamination and verification measures and the submission of a final report;
 - (v) Describe the measures to be taken to verify that closure has been completed in accordance with the Closure Plan; and
 - (vi) Include a description of how the proposed closure activities will interrelate with site-wide corrective action activities.
- (b) The Permittee shall close the Hazardous Waste Management Units in accordance with the Closure Plan submitted and approved pursuant to Condition No. II.A.1.(a) of this permit (herein after, the "approved Closure Plan").
- (c) Copy of Closure Plan. The Permittee shall ensure that a copy of the approved Closure Plan is kept at the Facility or at an alternate location acceptable to the Commissioner until Final Closure has been completed and certified in accordance with the requirements of this permit.
- (d) Notification of Closure. The Permittee shall notify the Commissioner in writing at least ninety (90) calendar days prior to the date it expects to begin Final Closure of the Hazardous Waste Management Units.
- (e) Schedule for Closure. The Permittee shall complete Final Closure activities, as applicable, in accordance with the approved Closure Plan. The Commissioner may approve a longer period for closure if the Permittee demonstrates to the Commissioner's satisfaction that the

activities required to comply with the approved Closure Plan will of necessity take longer than twenty-four (24) months to complete and that the Permittee has taken and will continue to take all steps needed to prevent threats to human health and the environment and will comply with any additional conditions deemed necessary by the Commissioner arising from the Final Closure.

- (f) Closure Cost Estimate. The Permittee shall prepare and maintain at the Facility or at an alternate location acceptable to the Commissioner a written estimate of the cost of closing the Hazardous Waste Management Units. The Permittee shall ensure that this written estimate is prepared in accordance with the methodology specified in RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.142(a).
- (g) Completion of Closure. Within sixty (60) calendar days of the completion of Final Closure, the Permittee shall submit to the Commissioner by registered mail, a certification signed by both the Permittee and by an independent registered professional engineer stating that the Hazardous Waste Management Units, as applicable, have been closed in accordance with the approved Closure Plan. Documentation supporting the independent, registered professional engineer's certification shall be furnished to the Commissioner upon request.
- (h) Liability Coverage. The Permittee shall establish and continuously maintain liability coverage for sudden accidental occurrences at the Facility in the amounts and in the manner specified in RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.147(a). The Permittee shall ensure that the wording of the liability coverage secured for the purposes of compliance with this section of the permit is identical to the wording specified in 40 CFR 264.151, except that all references to the "Regional Administrator of EPA" shall be changed to the "Commissioner of DEP." The Permittee shall maintain such liability coverage in effect until the Commissioner notifies the Permittee in writing that maintaining such coverage is no longer required, as is provided for in Condition No. II.A.1.(i) of this permit.
- (i) Release of Liability Coverage. Within sixty (60) calendar days after receiving certifications, submitted pursuant to Condition No. II.A.1.(g), from the Permittee and an independent registered professional engineer that Final Closure has been completed in accordance with the approved Closure Plan, the Commissioner will notify the Permittee in writing that it is no longer required to maintain liability coverage for the Facility, unless the Commissioner has reason to believe that Final Closure has not been performed and/or completed in accordance with the approved Closure Plan. The Commissioner shall provide the Permittee with a detailed written statement of any such reason to believe that closure has not been

performed and/or completed in accordance with the approved Closure Plan.

2. Post-Closure Requirements

- (a) Post-Closure Care Plan. The Permittee shall perform post-closure care of the land disposal units as specified in an Post-Closure Plan, included in Textron Lycoming's Post-Closure Permit Application received December 17, 1991 (included in Appendix B-2 of this permit) until it is superseded by the approval of a revised Post-Closure Plan submitted pursuant to Condition No. II.A.2.(b) of this permit (herein after, the "approved Post-Closure Plan").
- (b) Revised Post-Closure Care Plan. The Permittee shall prepare and submit for the Commissioner's review and written approval a revised post-closure care plan for the closed land disposal units developed in accordance with the requirements set forth in 40 CFR 264 Subparts F, G and K. In the event that it is determined that the closure of any other Hazardous Waste Management Unit requires the designation as a land disposal unit, the Permittee shall incorporate the post-closure care for such units in the revised post-closure plan. The revised post-closure care plan shall include:
- (i) A description and frequency of the planned maintenance and inspection activities that will be performed to ensure: (A) the integrity of the cap/final cover and/or other containment systems; and (B) the function of the monitoring equipment;
 - (ii) A compliance monitoring program developed in accordance with the requirements of RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.99, and an evaluation of the existing monitoring data to determine if compliance is achievable;
- If it is determined that compliance can not be achieved the Permittee shall include a description of how corrective action, required pursuant to 40 CFR 264.100, will be interrelated into site-wide corrective activities.
- (iii) The name, address and phone number of the Facility contact person during the Post-Closure Care Period;
 - (iv) A schedule for the reporting requirements, including but not limited to, groundwater monitoring reports, scheduled and unscheduled inspection and maintenance reports, and corrective action reports resulting from inspection and maintenance activities; and

- (v) A detailed estimate of the cost of performing post-closure care of the land disposal units developed in accordance with the 40 CFR 265 Subpart H.
- (c) Modifications of Post-Closure Plan. The Permittee shall submit a written notification or request for a permit modification to authorize a change in the approved Post-Closure Plan in accordance with the applicable requirements of 40 CFR 124 and 40 CFR 270. The written notification or request must include a copy of the amended post-closure plan for the Commissioner's review and written approval.
- (d) Copy of Post-Closure Plan. The Permittee shall ensure that a copy of the approved Post-Closure Plan is kept at the Facility or at an alternate location acceptable to the Commissioner, until the Post-Closure Care Period has been completed and certified in accordance with the requirements of this permit.
- (e) Completion of Post-Closure Plan. Within sixty (60) calendar days of the completion of post-closure care, the Permittee shall submit to the Commissioner by registered mail, a certification signed by both the Permittee and by an independent registered professional engineer stating that the post-closure care period for the land disposal units, was performed in accordance with the specifications in the approved Post-Closure Plan. Documentation supporting the independent, registered professional engineer's certification shall be furnished to the Commissioner upon request.

B. RCRA CORRECTIVE ACTION REQUIREMENTS

1. Performance of Corrective Action. The Permittee shall perform corrective action in accordance with the requirements of this permit, the Remedial Action Plan(s) ("RAPs") submitted and approved pursuant to Condition Nos. II.B.2.(f), II/B.2.(g) and II.B.7. of this permit, and any other plan(s) submitted and approved pursuant to this permit.

The Permittee shall ensure that further investigations for each SWMU and AOC are completed within two (2) years from the date of initiation of such investigation; and that remediation is initiated within three (3) years from the date of initiation of investigation of any SWMU or AOC and completed within ten (10) years of issuance of this permit or in accordance with an alternative schedule approved in writing by the Commissioner.

The Federal Governments' obligations under this permit shall be subject to the availability of appropriated funds. Nothing in this permit shall be interpreted to require obligations or payments by the Federal Government in violation of the Anti-Deficiency Act (31. U.S.C. §1341).

The conditions of this section apply to:

- (a) The Solid Waste Management Units ("SWMUs") and Areas of Concern ("AOCs") as identified in Table II-1;
- (b) Any additional SWMUs and AOCs discovered during the course of corrective action, characterization, groundwater monitoring, field investigations, environmental audits, or other means; and

(As used in this permit, the terms "discover," "discovery," or "discovered" refer to the date on which the Permittee either: (i) visually observes evidence of a new SWMU or AOC, (ii) visually observes evidence of a previously unidentified release of hazardous constituents to the environment, (iii) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment, or (iv) receives information which suggests the presence of a previously undocumented release of hazardous waste or hazardous waste constituents to the environment.)

- (c) Contamination that has migrated or may migrate beyond the Facility boundary, whereas necessary to protect human health and the environment.

The Permittee shall implement corrective actions beyond the Facility boundary where necessary to protect human health and the environment

consistent with RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.101(c), unless the Permittee demonstrates, to the satisfaction of the Commissioner, that despite the Permittee's best efforts, as determined by the Commissioner, 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 will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required.

2. Schedule/Scope of Work. The Permittee shall submit schedule(s)/scope(s) of work for the investigation and remediation of releases of hazardous waste and hazardous substances at or from the Facility such that the remediation will achieve compliance with RCSA Section 22a-133k-1 et seq. (Remediation Standard Regulations). Such schedule(s) and scope(s) of work shall be submitted pursuant to Condition No. III.C.6. of this permit and shall include, at a minimum, a schedule for development and implementation of the following plans and/or reports:

- (a) For each SWMU and AOC listed in Table II-1:
- (i) Identification of Data Gaps. The Permittee shall submit a report, for the Commissioner's review and written approval, with the rationale used for determining whether (1) no further investigation is required, or (2) additional investigation is necessary to fill any significant data gaps. If additional investigation is needed, the Permittee shall submit a plan for the implementation of such investigations and a report summarizing the findings.
 - (ii) Evaluation of Compliance with the RSRs. The Permittee shall submit a summary of the: 1) rationale used to determine that no remediation is needed; and 2) identification of all areas identified as exceeding any remedial criteria and the additional characterization data needed to complete the remedial design in order to achieve compliance with RSRs for polluted soil and groundwater.
 - (iii) Schedule for Remediation. The Permittee shall submit for the Commissioner's review and written approval a description and schedule for the development of one or more RAPs that collectively address all areas of contamination that exceed the RSR criteria.

Such description and schedule may propose activity be conducted in phases associated with the redevelopment of the Site, or focus on a particular environmental medium, reasonably deferring filling the data gap to the remedial design stage where appropriate.

- (b) Quality Assurance Project Plan. The Permittee shall prepare and submit for the Commissioner's review and written approval a revised Quality Assurance Project Plan ("QAPP"), prepared in accordance with the document titled: Quality Assurance Guidance for Conducting Brownfields Site Assessments, US Environmental Protection Agency OSWER Directive No. 9230.0-83P, and incorporating Connecticut's Reasonable Confidence Protocols. The Permittee shall ensure that the data is of sufficient quality to make decisions regarding the investigation and remediation of the Site.
- (c) Preconstruction Survey. The Permittee shall conduct a pre-renovation/pre-demolition survey of the Site, before building conditions deteriorate, which includes, but is not limited to, the measures to be: 1) taken to identify building components such as switches, fluorescent lamps and ballasts and asbestos that require special handling; and 2) used to identify areas of the structures that require decontamination if they are to be reused, or special handling if they are to be demolished. A summary of the finding of the survey shall be submitted for the Commissioner's review.
- (d) Site Control Plan. The Permittee shall describe the plans for controlling access to any remaining contaminated area(s) of the Site until remediation activities in these areas have been completed.
- (e) For the groundwater migrating off the Site to the tidal flats and other nearby surface waters, the Permittee: 1) shall develop for the Commissioner's review and written approval ecologically based and human health based remedial criteria; and 2) shall develop, in accordance with the requirements of Condition No. II.B.7. of this permit, for the Commissioner's review and written approval, and shall subsequently implement, a RAP to ensure that groundwater migrating from the Site will achieve such criteria within a reasonable timeframe.
- Any RAP containing monitored natural attenuation as the selected remedy for groundwater migrating off the Site shall include: 1) an evaluation of the need for source mitigation to achieve remedial criteria; 2) a monitoring and data evaluation plan designed to evaluate the remedy performance; and 3) a contingency remedy conceptual approach in the event that monitored natural attenuation does not perform as anticipated and a schedule for implementation.
- (f) For the sediments within the tidal flats and 008 outfall area the Permittee: 1) shall develop for the Commissioner's review and written approval ecologically based and human health based remedial criteria; and 2) shall develop, in accordance with the requirements of Condition No. II.B.7. of this permit, for the Commissioner's review and written approval, and shall subsequently implement, a RAP to achieve such criteria for such sediment.

3. Notification and Assessment Requirements for Newly Identified SWMUs and AOCs.

The Permittee shall notify the Commissioner in writing, within fifteen (15) calendar days of discovery, of any new suspected or confirmed AOCs or SMWUs as discovered under Condition No. II.B.1.(b). Such notification shall include, at a minimum, the following information:

- (a) Location of the unit(s) on a topographic map of appropriate scale (such as required under 40 CFR 270.14(b)(19));
- (b) Designation of the type and function of unit(s);
- (c) General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings);
- (d) The date that the unit(s) was operated;
- (e) Specifications 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; and
- (f) All available information (groundwater data, soil, soil gas, sediment, air, and/or surface water data) pertaining to any release of hazardous waste or hazardous constituents from such unit(s).

4. Notification Requirements for Newly Discovered Releases From SWMUs and AOCs.

- (a) The Permittee shall notify the Commissioner in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of characterization, groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery.

Such newly discovered release(s) may be from SWMUs or AOCs identified in Condition No. II.B.1.(b) or SWMUs or AOCs previously identified for which it had been determined that further investigation was not required.

- (b) If the Commissioner determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations within sixty (60) calendar days of notification by the Commissioner.

5. Interim Measures (IM)

(a) Work Plan

- (i) Upon notification by the Commissioner, the Permittee shall prepare and submit an Interim Measures ("IM") Work Plan for any SWMU or AOC that the Commissioner determines is necessary in order to minimize or prevent the further migration of contaminants, thereby limiting current and future potential for 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 sixty (60) calendar days of such notification and shall include the elements listed in Condition No. II.B.5.(a)(iii). Such interim measures may be conducted concurrently with investigations required by this permit.

- (ii) The Permittee may initiate IM at a SWMU or AOC by submitting the appropriate notification pursuant to this permit. The Commissioner will process Permittee initiated IM by either conditionally approving the IM or imposing an IM Work Plan per Condition II.B.5.(a)(i). Permittee initiated IM shall be considered conditionally approved unless the Commissioner specifically imposes an IM Work Plan within thirty (30) calendar days of receipt of notification of the Permittee initiated IM. The scope and success of Permittee initiated IM conditionally approved shall be subject to subsequent in-depth review; the Commissioner will either comment on or approve the Permittee initiated IM. Permittee initiated IM must follow the progress and final reporting requirements in Condition No. II.B.5.(c).
- (iii) The IM Work Plan 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 measure's objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

(b) IM Implementation

- (i) The Permittee shall implement the IM under Condition No. II.B.5.(a)(i) in accordance with the approved IM Work Plan.
- (ii) The Permittee shall give notice to the Commissioner as soon as possible of any planned changes, reductions or additions to the IM Work Plan imposed under Condition No. II.B.5.(a)(i) or initiated by the Permittee under Condition No. II.B.5.(a)(ii).

(c) IM Reports

(i) If the time required for completion of interim measures imposed under Condition No. II.B.5.(a)(i) or implemented under Condition No. II.B.5.(a)(ii) is greater than one year, the Permittee shall provide the Commissioner with progress reports at intervals specified in the approved Work Plan or semi-annually for Permittee initiated interim measures. The Progress Reports shall contain the following information at a minimum:

- (A) A description of the portion of the interim measures completed;
- (B) Summaries of the findings;
- (C) Summaries of any deviations from the IM Work Plan during the reporting period;
- (D) Summaries of any problems or potential problems encountered during the reporting period; and
- (E) Projected work for the next reporting period.

(ii) The Permittee shall prepare and submit to the Commissioner, within ninety (90) calendar days of completion of interim measures conducted under Condition No. II.B.5. an IM Report. Such report shall contain, at a minimum, the following information:

- (A) A description of the interim measures implemented;
- (B) Summaries of results;
- (C) Summaries of all problems encountered;
- (D) Summaries of accomplishments and/or effectiveness of interim measures; and
- (E) Copies of all relevant laboratory/monitoring data etc. in accordance with this permit.

6. Environmental Indicators. The Permittee shall complete the U.S. EPA Environmental Indicator, Migration of Contaminated Groundwater Under Control Worksheet (Appendix B-1) on an annual basis beginning no later than one (1) year after the issuance of this permit and continuing until the indicator (i.e., the migration of contaminated groundwater from the Site is being controlled through engineered or natural process) is achieved. When the indicator is achieved, the Permittee will complete and submit the Documentation of Environmental Indicator Determination to the DEP.

7. Remedial Action Plan ("RAP"). The Permittee shall prepare and submit for the Commissioner's review and written approval one or more RAP(s), developed in accordance with Condition No. II.B.2. of this permit and RCSA Sections 22a-449(c)-104(a)(1) and 22a-133k-1 et.seq. (Remediation Standard Regulations), incorporating 40 CFR 265 Subpart G, which details the steps to be taken to perform corrective action. The RAP(s) shall address one or more environmental media at the entire Site or area affected by or any portion thereof. The RAP(s) shall:

- (a) Describe the areas at which the remediation will take place, and identify the SWMUs and AOCs addressed and the environmental media being remediated;
- (b) Describe the remedial alternatives considered for performing the specified remediation, and the most expeditious schedule for performing each alternative;
- (c) If the Permittee plans to adaptively re-use the buildings on-site, describe the proposed adaptive reuse of the buildings. Such description shall include at a minimum: 1) the identification of the buildings to be reused; 2) a proposed schedule for renovation; and 3) the proposed details of how environmental concerns, including but not limited to, building decontamination, provisions to limit the volatile organic compounds occurring in or migrating into the interior of the buildings, and the methodology to be used to evaluate the implementation of the proposed environmental measures.

The Permittee may propose that any adaptive reuse of the Site be conducted in phases, provided the schedule includes the provision for an initial submittal of a generic scoping document describing in detail the methodologies to be used to meet the requirements of the above condition for each phase.

- (d) If the Permittee proposes any demolition on-site, describe the proposed demolition of any buildings or structures on-site. Such description shall include at a minimum: 1) the identification of such buildings and the proposed schedule for demolition; 2) the detailed measures to be taken to ensure waste minimization during demolition (including the handling of non-friable asbestos); 3) detailed measures to ensure the proper handling, segregation and disposal of contaminated building materials; 4) detailed measures to be taken to avoid impacts to human health or the environment as a result of demolition; and 5) the measures to be implemented to monitor the proposed demolition.

The Permittee may propose that the demolition of any buildings or structures be conducted in phases, provided the schedule includes provisions for an initial submittal of a generic scoping document describing in detail the methodologies to be used to meet the requirements of the above condition for each phase.

- (e) List all the permits and approvals required for each alternative, including but not limited to any permits required under CGS Sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430;
- (f) Propose a preferred alternative with supporting justification therefore; and

- (g) Propose a detailed implementation plan and schedule to perform the preferred remedial actions, including the generation and collection of any supplemental site information needed to support completion of remedial design. Such schedule shall include a schedule for applying for and obtaining all permits and approvals required for such remedial actions and describe the establishment of financial assurance for each proposed phase of remedial activity.
8. Implementation of Remedial Activities. The Permittee shall perform all remediation activities for soil, sediment, groundwater and surface water pollution in accordance with the approved RAP(s) and any schedules contained therein; and in accordance with RCSA Sections 22a-133k-1 through 3 (Remediation Standard Regulations).
9. Completion of Active Remediation.
- (a) The Permittee shall notify the Commissioner in writing at least ninety (90) calendar days prior to the date it expects to complete the active remedial activity(ies) at the Site or area affected by the Site or any portion thereof.
- (b) Within sixty (60) calendar days of the completion of the active remediation, the Permittee shall submit to the Commissioner via registered mail, a certification signed by the Permittee and by an independent, registered professional engineer stating that the active remediation phase(s) at the Site or areas affected by the Site or any portion thereof has been completed in accordance with the specifications of the approved RAP(s). Documentation supporting the certification shall be furnished upon the Commissioner's request.
10. Completion of Post-Remediation Monitoring
- (a) The Permittee shall notify the Commissioner in writing at least ninety (90) calendar days prior to the date it expects to complete post-remediation groundwater monitoring and monitored natural attenuation at the Site or area affected by the Site or any portion thereof.
- (b) Within sixty (60) calendar days of the completion of post-remedial groundwater monitoring and monitored natural attenuation at the Site or area affected by the Site or any portion thereof, the Permittee shall submit to the Commissioner via registered mail, a certification signed by both the Permittee and by an independent registered professional engineer stating that the post-remediation groundwater monitoring, as applicable, has been completed in accordance with the specifications in the approved RAP(s). Documentation supporting the certification shall be furnished upon the Commissioner's request.

- (c) Once the corrective action obligations for all media at the Site or area affected by the Site or any portion thereof, has been completed the Commissioner shall issue a Certificate of Completion.

11. Remedy Selection and Notification of Remedial Implementation.

- (a) The Permittee shall propose a remedy or evaluate one or more remedial alternatives. The Commissioner may require that specific remedial alternatives be evaluated. All remedial alternatives must meet the threshold and balancing criteria specified below.

Threshold Criteria:

- (i) Protect human health and the environment;
- (ii) Achieve media cleanup objectives using criteria in RCSA 22a-133k-1 et seq. (Remediation Standard Regulations); and
- (iii) Control sources of releases to reduce or eliminate further releases.

Balancing Criteria:

- (i) Long-term effectiveness;
- (ii) Toxicity, mobility and volume reduction;
- (iii) Short-term effectiveness;
- (iv) Implementability;
- (v) Cost;
- (vi) Community acceptance; and
- (vii) State acceptance.

The proposed remedy may include any IM implemented to date.

- (b) The Commissioner will select and approve the remedy to be implemented at the Facility. The Commissioner is not confined to these alternatives evaluated by the Permittee when selecting and approving a remedy for the Site or area affected by the Site or any portion thereof.

12. Public Participation. The Permittee shall develop and implement a Public Participation Plan. Such plan shall, at a minimum, include: 1) the provision of public notice prior to the start of or completion remediation work at the Site or area affected by the Site or any portion thereof that is consistent with Condition No. II.B.13. of this permit and the requirements of CGS Section 22a-134i; 2) a copy of such notice is submitted to the Commissioner ten (10) calendar days prior to the date of publication; and 3) within thirty (30) calendar days after the end of the public comment period submit to the Commissioner a written summary of all comments received and responses to each comment.

The Commissioner shall review the summary of the comments and the Permittee's response and shall either adopt the responses, adopt the responses with modifications, or reject the responses and prepare a response to each comment.

In the event of substantial changes in the remedial approach, the Commissioner may require an additional opportunity for public comment with respect to such changes.

13. Public Notice Requirements. At the Commissioner's direction and as stated in the Public Participation Plan, the Permittee shall provide public notice of proposed remediation and public notice of the Commissioner's tentative determination that remediation is complete. Each public notice must provide a forty-five (45) calendar day comment period.
- (a) Prior to the commencement of any remedial action, the public notice shall summarize the investigations undertaken, the results of the investigations, clearly identify the proposed remedial activities, provide a public location where relevant documents can be reviewed, and include an address and telephone number for a contact person. The Permittee shall:
 - (i) Publish the notice in a newspaper having substantial circulation in the municipality in which the Site or the affected area is located;
 - (ii) Broadcast the notice on a radio station during the high volume listening times on the same day the notice is published;
 - (iii) Provide a copy of the notice to the Director of Health of the municipality where the Site is located;
 - (iv) Provide a copy of the notice to the owner or operator of the Site (if the Permittee is not the Site owner or operator) and to all persons on the Facility mailing list maintained pursuant to 40 CFR 124.10(c)(1)(ix); and
 - (v) Erect and maintain a sign at least six (6) feet by four (4) feet for at least thirty (30) calendar days in a legible condition at the Facility, clearly visible from the public highway and including the words "ENVIRONMENTAL CLEAN-UP IN PROGRESS AT THIS SITE. FOR FURTHER INFORMATION CONTACT:", and a telephone number at which any interested person may obtain additional information about the remediation
 - (b) Prior to the Commissioner's final determination that remediation is complete, the Permittee shall:
 - (i) Publish the notice in a newspaper having substantial circulation in the municipality in which the Site or the affected area is located;
 - (ii) Broadcast the notice on a radio station during the high volume listening times on the same day the notice is published;

- (iii) Provide a copy of the notice to the owner or operator of the Facility (if the Permittee is not the Facility owner or operator) and to all persons on the Facility mailing list maintained pursuant to 40 CFR 124.10(c)(1)(ix); and
 - (iv) Include a summary of the basis for the Commissioner's determination and that the Commissioner will accept public comments on the tentative determination for at least forty-five (45) calendar days from the date of publication.
- (c) Upon the completion of the public comment period the Commissioner shall make a final determination. If the final determination is that remediation is complete then the Stewardship Permit will be terminated and a Certificate of Completion will be issued.

14. Miscellaneous.

- (a) Upon transfer of the Facility, the intended reuse of the Facility will be industrial/commercial use and an environmental land use restriction prohibiting residential use will be filed. In the event that the Permittee changes the intended reuse of the Facility to include residential use and no alternative Site-specific criterion is approved by the Commissioner, the Permittee shall use a lead remediation criterion level of 400 mg/kg for the residential direct exposure criterion as authorized by RCSA 22a-133k-2(i).
- (b) The Permittee shall achieve volatilization remediation criteria, for the applicable constituents of concern, as provided in the DEP's guidance document entitled "*Proposed Revisions – Connecticut's Remediation Standard Regulations Volatilization Criteria*", dated March 2003, included in Appendix B-3 of this permit, for evaluating the volatilization exposure pathway as it applies to indoor air, until superseded by the amended RSR's, or alternative criteria are proposed in a schedule/scope of work submitted pursuant to Condition No. II.B.7.(c) of this permit and approved in writing by the Commissioner.
- (c) For any substances reported at or emanating from the Site, for which no remediation criteria has been adopted, the Permittee shall, in accordance with RCSA Sections 22a-133k-1 through 3, submit for the Commissioner's review and written approval a proposal for additional remediation criteria pursuant to the schedule/scope of work as set forth in Condition No. II.B.2. of this permit.
- (d) The Permittee shall not operate the Facility in any manner that stores, treats, or disposes of hazardous wastes or in any way manages hazardous wastes other than hazardous wastes that may be generated during Facility maintenance, authorized closure and/or corrective action activities. Such

STRATFORD ARMY ENGINE PLANT
550 Main Street
Stratford, CT

EPA ID No. CTD001181502
Permit No. DEP/HWM/CS-134-003

waste shall be managed in accordance with all applicable regulations. The Permittee shall comply with all applicable requirements of RCSA Section 22a-449(c)-102 incorporating 40 CFR Part 262 "Standards Applicable to Generators of Hazardous Waste".

C. FINANCIAL RESPONSIBILITY

1. Pursuant to RCSA 22a-449(c)-104 incorporating 40 CFR 264.140, States and the Federal Government are exempt from all requirements of 40 CFR 264 Subpart H, including the requirement to submit cost estimates, liability coverage, and establish a financial assurance instrument. Section II.C of the permit and all other sections requiring financial assurance, liability coverage and cost estimates shall not apply to any entity of the State or Federal Government, including the Department of the Army.
2. The Permittee shall submit for the Commissioner's review and written approval a detailed RAP(s) containing detailed, written estimate(s) of the current cost to perform investigation and remediation of the Site or areas affected by the Site inclusive of closure of the Hazardous Waste Management Units and post-closure care of the land disposal units in accordance with the requirements of this permit. The Permittee shall ensure that such written estimates are prepared in accordance with the methodology specified in RCSA 22a-449(c)-104 incorporating 40 CFR 264.142(a) and 40 CFR 264.144(a), as applicable. Note a fifteen percent (15%) contingency shall be applied to the estimates for unforeseeable elements or events which may increase the cost of performing corrective action.

The cost estimate for those obligations identified in Condition No. II.B.2.(f) for the contamination of the tidal flats and other nearby surface waters shall be reflected as a zero figure. The Federal Government is responsible for the remediation of the tidal flats pursuant to the Invitation For Bid, which became effective on April 14, 2008.

3. Within sixty (60) calendar days of receiving the Commissioner's written approval of the cost estimate(s), the Permittee shall establish and continually maintain financial assurance using one or more of the instrument formats prescribed by the Commissioner's for investigation and remediation of the Site or areas affected by the Site inclusive of closure of the Hazardous Waste Management Units and post-closure care of the land disposal units. Such assurance may be established incrementally.

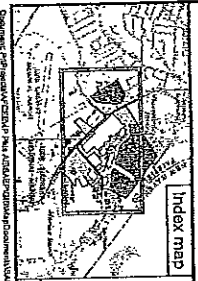
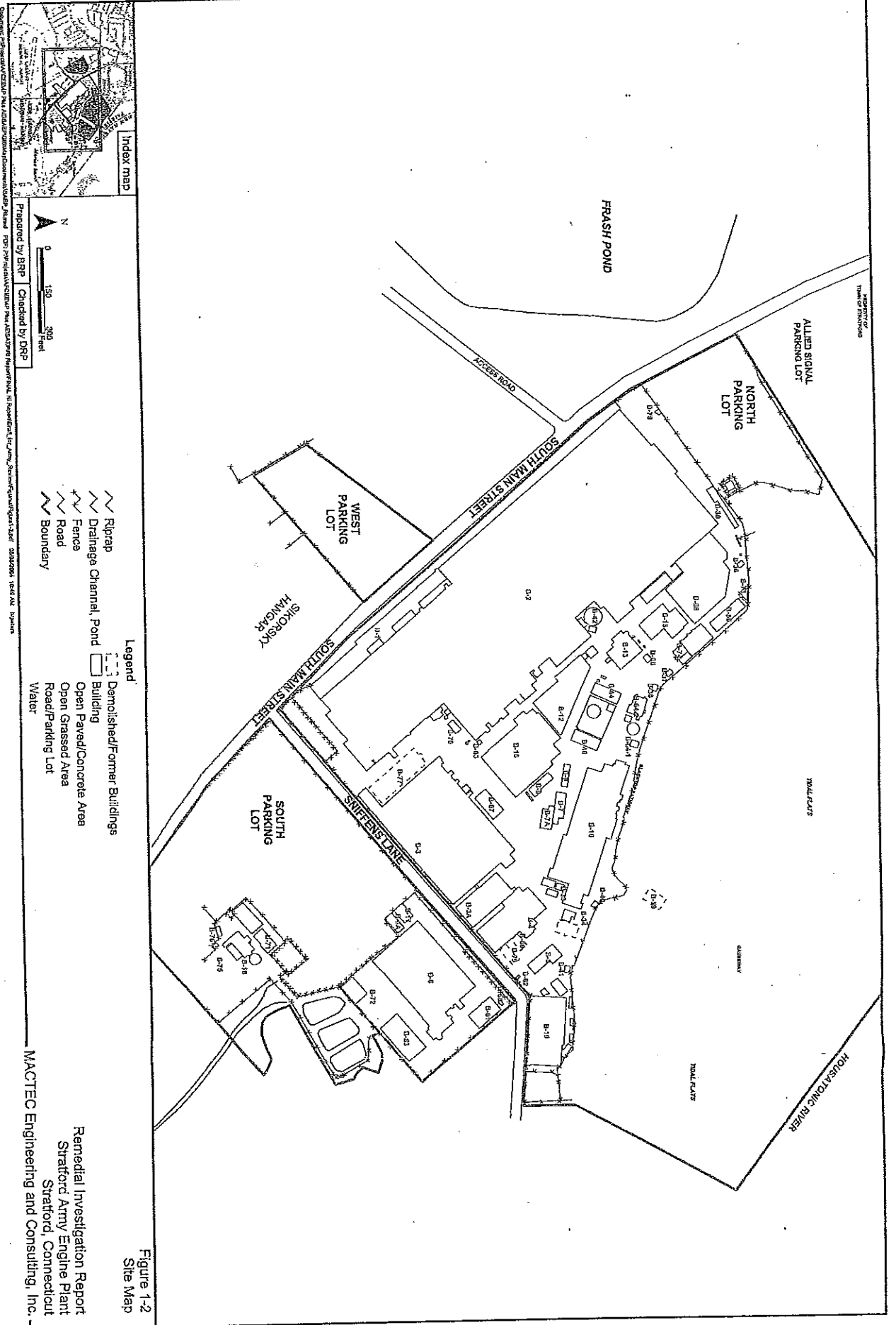
The Permittee shall ensure that the initial value of financial assurance established includes the cost(s) associated with completing the closure of the Hazardous Waste Management Units and post-closure care of the land disposal units.

The Permittee shall submit a plan for the Commissioner's review and written approval, for incrementally establishing financial assurance. In the event that no plan is submitted, the Permittee shall establish financial assurance such that 10% of the total cost of performing corrective action is initially established and an additional 10% is established annually (e.g. the 2nd year 20%, the 3rd year 30% is established etc...) thereafter such that a total of 100% of the financial assurance is established prior to the expiration of the permit.

4. The Permittee shall adjust amounts of financial assurance to reflect inflationary costs as required by RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.142, and any factors that bear on the cost of performing the work that remains to be completed under this permit. Adjustments shall be made each year, on the anniversary of the establishment of the mechanism(s) for financial assurance until the Commissioner releases the Permittee from the financial assurance requirements of this permit.

The latest adjusted cost estimate(s) shall be kept at the Facility and a signed original shall be submitted to the Commissioner within fourteen (14) calendar days of preparation.

5. Upon request by the Permittee, the Commissioner may approve periodic reductions in the amount of financial assurance commensurate with the completion of corrective action activities. Such request shall include a revised cost estimate and demonstration of completed work activities which equates to at least a fifteen percent (15%) reduction in the estimate costs.
6. The Permittee shall maintain such financial assurances in effect until the Commissioner notifies the Permittee in writing that it is no longer required to maintain such a mechanism for financial assurances as provided for in Condition No II.C.7. of this permit.
7. Within sixty (60) calendar days after receiving the certification, submitted pursuant to Condition Nos. II.A.1.(g) and II.A.2.(e), that Final Closure of the Hazardous Waste Management Units and post-closure care of the land disposal units has been completed in accordance with the approved Closure Plan and Post-Closure Plan, the Commissioner will notify the Permittee in writing that it is no longer required to maintain financial assurance for closure of the Hazardous Waste Management Units or post-closure care of the land disposal units, unless the Commissioner has reason to believe that Final Closure has not been performed and/or completed in accordance with the approved Closure Plan or Post-Closure Plan. The Commissioner shall provide the Permittee with a detailed written statement of any such reason(s) to believe that closure has not been performed and/or completed in accordance with the approved Closure Plan or Post-Closure Plan.
8. If the Permittee fails to perform any of the terms or conditions of this permit, the financial assurance shall be available to the Commissioner to perform such terms or conditions of this permit provided that, prior to drawing upon any mechanism(s) for financial assurance, the Commissioner shall notify Permittee, in writing, of the alleged failure to perform and provide Permittee with a reasonable period of not less than fifteen (15) calendar days in which to remedy the alleged non-performance.



Prepared by BRP | Checked by DRP

0 150 300 Feet

- Legend**
- Demolished/Former Buildings
 - ▭ Building
 - ▭ Open Paved/Concrete Area
 - ▭ Open Grassed Area
 - ▭ Road/Parking Lot
 - ▭ Water
 - ~ Riprap
 - ~ Drainage Channel, Pond
 - ~ Fence
 - ~ Road
 - ~ Boundary

Figure 1-2
Site Map

Remedial Investigation Report
Stratford Army Engine Plant
Stratford, Connecticut

MACTEC Engineering and Consulting, Inc.

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2

3

STRATFORD ARMY ENGINE PLANT, STRATFORD, CT -- AREAS OF CONCERN

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
<i>Hazardous Waste and Waste Oil Area</i>					
1 & 2	Oil House Tank Farm (13 ASTs)	1,1,1-TCA; TCE; PCE; Coolants; Lubricants; Varsol; Hydraulic oils; Spent jet fuel; Waste oils	Oil House Tank Farm constructed in early 1950s. Relocated 30-50 feet west of original location between 1980 and 1982. Waste oil accumulation tanks used from 1981 to 1996. Date of release unknown.	The Waste Oil and Hazardous Waste Accumulation Tanks and aboveground piping were removed in 1998. Chlorinated and fuel-related contaminants were detected in soil within the berm, indicating a release has occurred, likely due to spills or leaks from tanks and/or piping. Concentrations of arsenic and dichloromethane in soils exceed RSR criteria. Concentrations of chloroethane, cis-1,2-DCE, TCE, and vinyl chloride in groundwater exceed RSR criteria.	Remediation required for release. ⁴ Requires administrative RCRA closure for HW tanks. ⁵
3	Hazardous Waste and Waste Oil Transfer Systems Between Buildings 13 and 15	Waste fuel; Waste solvent/oil mixtures; Waste oil	Installed prior to 1970	The waste fuel and waste solvent and oil systems each consisted of a 500-gallon underground receiving tank. The waste oil transfer system consisted of two 400-gallon underground steel tanks. A release of fuels and chlorinated solvents to soil has occurred. Petroleum hydrocarbons were visually observed and detected in a soil boring immediately downgradient of the former USTs. Concentrations of BTEX, cVOCs, VOCs, TPH, PCBs, and inorganics in soils exceed RSR criteria. Concentrations of cVOCs and arsenic in groundwater exceed RSR criteria.	Remediation required for this location. ⁴
7	Oil/Alum Tank	Cutting Oils	1976 - 1997	The Oil/Alum tank was an aboveground, 10,000-gallon welded carbon steel tank mounted on a concrete pad. One soil boring was completed beneath the former tank location. Release originating from AOC not suspected based on soil data and thickness of concrete pad. Final RI Comment Response states that no further action is necessary.	Additional evaluation of historical soil under slab may be required. Location is on edge of another AOC; remedial confirmation design must consider the potential for pollution unassociated with the Oil/Alum Tank being present under slab. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
12 & 53	Container Accumulation and Drum Staging Area Between the Former Oil House Tank Farm and Building 37	Solvents; 1,1,1-TCA; Waste oil; Fuel	Use began prior to 1980. Date of release unknown.	A release of chlorinated and fuel-related VOCs to the underlying soils has occurred. Concentrations of cis-1,2-DCE and xylenes in soil exceed RSR criteria. It is unknown if this release occurred from handling and storage of drums after designation of the area as a container storage area, or prior to that time when the area contained storage tanks.	Remediation required for this location. ⁴ Requires administrative RCRA closure for HW area. ⁵
13	Original Container Storage Area	Hazardous waste	Used from 1980 to 1984	This area (north and northwest of Building 13) was used to accumulate 55-gallon drums of hazardous waste. Insufficient information to determine if release has occurred associated with this AOC. However, a release has occurred in this area from other activities. No samples focused on AOC; in vicinity concentrations of BTEX, cVOCs, VOCs, TPH, PCBs, and inorganics (lead) in soils exceed RSR Criteria.	Remediation required for this location. ⁴ Requires administrative RCRA closure. ⁵
16	Metal Chips Oily Sump (Northwest corner of Building 13)	Cutting oils; Metal chips	Concrete pit for metal chips was removed in 1993.	Sample SB09B11-1 was taken from within the area of the former metal chips bin, but not adjacent to the chip sump. Detected concentrations in samples from SB09B11-1 are not greater than RSR numerical criteria. Release not known or suspected from AOC.	Insufficient information to determine no release occurred from this AOC. ⁶ Data indicate historical pollution or polluted fill is present in area; additional evaluation may be needed. Also, abutting AOCs require remediation, and their remedial confirmation design must consider this pollution. ⁴
28	Building 15 and Associated Satellite Accumulation Areas	Solvents; Coolants; Hydraulics; Waste oils	Constructed in 1945. Additional storeroom used as primary chemical storage area constructed between 1960 and 1970.	Solvent and fuel-related contaminants were identified in soil, however the presence of the fill from former shoreline filling and an outfall once located beneath Building 15 complicates the determination of the source of the release. Concentrations of TCE and lead in soil exceed RSR criteria.	Remediation required for location. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
---	Former Chemical Storage and Scrap Metal Reclamation (B-13)	Raw chemicals; Magnesium-thorium; Oily metal chip storage; Titanium and aluminum chips	Constructed in 1944. Date of release unknown. Metal chips concrete sump removed in 1993. Titanium and aluminum chips collection system used from early 1990s to 1996.	Oil-water separator located in Building 13. Concentrations of PAHs and TPH in soil exceed RSR criteria. Concentrations of PCE and TCE in soil vapor exceed RES and I/C VC.	Remediation required for release. ⁴
---	Container Storage Pad and Collection Trench Northeast of Building 13	Solvents; Scrap metals; Oils	Drum storage began around 1943. Concrete pad and collection system built in 1993 and used for a two-year period.	Field observations interpreted to indicate no release from AOC. Concentrations of TCE, numerous PAHs, TPH, antimony, arsenic, beryllium, and lead in soil exceed RSR criteria. The source of the contaminants detected in soils is likely from historical usage of this area prior to 1993.	Remediation required for this location. ⁴
---	Magnesium-Thorium Scrap Yard Between Building 13 and Building 44	Thorium chips	Scrap yard used in the 1990s. Used historically for storage of drums and debris since 1943.	Sampling from a soil boring completed in the center of the AOC detected pollutants but no pollutants exceeded RSR criteria. Release associated with scrap yard not known or suspected. BTEX, VOC and PCB detections indicate pollution is present in area, believed to be associated with historical usage of area for drum and debris storage.	Data indicate historical pollution or polluted fill is present in area; additional evaluation needed. Remediation may be required if evaluation finds criteria exceeded. Also abutting AOCs require remediation, and their remedial confirmation design must consider this pollution. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
--	Open Storage Area Between Buildings 16 and 74	Solvents; 1,1,1-TCA; Propane; Oil and grease	Storage occurred from the early 1950s until the 1980s.	<p>The 1953 aerial photograph and a 1956 Fire Insurance Map depict three 1800-gallon propane ASTs at the future location of the OATP (Building 64-2). A 1970 aerial photograph depicts storage tanks adjacent to Building 37 and three small buildings located between Building 38 and the three 1800-gallon propane ASTs.</p> <p>Concentrations of BTEX, cVOCs, PAHs, TPH, PCBs, and inorganics in soils exceed RSR criteria. Concentrations of cVOCs and arsenic in groundwater exceed RSR criteria. Detected analytes in samples associated with this area may have resulted from these storage areas, ASTs historically located within this area, fill used in 1943 to extend the shoreline into the Housatonic, and/or as a result of activities associated with operation of the OATP.</p>	Remediation required for this location. ⁴
Chemical Waste Treatment System					
8	Chemical Waste Treatment Plant (CWTP) Collection System, Pump Station (Building 63), and Associated Piping	Cyanide; Cr(VI); Chlorinated and non-chlorinated solvents; MEK; Naphtha; 1,4-dioxane; Toluene; Metals; Sulfuric acid; Sodium metabisulfite	Operated from 1950s - 1990s	<p>Sampling results indicate releases have occurred; however, evidence suggests there are other potential sources in addition to the CWTP system. Fuel and oil storage in USTs and ASTs and the wide-spread use of solvents in cleaning procedures within Building 2 are likely contributing sources of contamination. Concentrations of antimony, arsenic, cadmium, copper, lead, and TPH in soils exceed RSR criteria. Concentrations of copper, zinc, cyanide, and cVOCs in groundwater exceed RSR criteria.</p>	<p>Insufficient information to determine release status of all lines included in this AOC.⁶</p> <p>Remedial design for site requires additional line-focused evaluations.⁴</p>
9	Chemical Waste Treatment System Cyanide Destruction Facility (Building 70)	Copper; Cadmium; Cyanide; Sodium hypochlorite; Sulfuric acid; Sodium hydroxide	Operated from 1986 to 1997	<p>Prior to CDF construction, this area contained an abandoned underground septic tank that reportedly received zinc chromate paint sludge and solvent from 1941 to 1949 (ESE, 1981).</p> <p>Cyanide was not detected in samples taken adjacent to the CDF and the upstream waste line, nor was copper or cadmium detected at elevated concentrations. Solvent and fuel-related contaminants detected in soil are likely the results of historical activities in this area, including fuel oil storage in USTs, painting and paint storage, waste paint storage and disposal, and open storage. The concentration of arsenic in soil exceeds RSR criteria at SB12B6-2.</p>	No release suspected from AOC activity. (see also AOC 22)

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
10	CWTP in Building 18	Metals; Solvents; Acids; Cyanide; Sulfuric acid; Sodium metabisulfite; Sodium hydroxide	The CWTP was constructed in 1958, and included the Chrome Reduction Unit and clarifier. In 1986 the equalization tanks were constructed, which replaced the equalization lagoon.	The CWTP in Building 18 includes the Chrome Reduction Unit and the Metals Removal Unit. The Chrome Reduction Unit consists of six 9,725-gallon tanks. The Metals Removal Unit consists of one 240,000-gallon and two 120,000-gallon equalization tanks, and a 60,000-gallon clarifier. The concentration of dichloromethane in soil exceeds RSR criteria at EBS43-1. Release is not known or suspected.	Insufficient information to determine no release occurred from this AOC. ⁶
11	CWTP Solids Handling Area in Building 71	Metal hydroxide sludge	Operation began in 1986.	This area consists of the Solids Handling Area, located in Building 71, which includes an 8,000-gallon FRP thickening tank and two 1-cubic yard filter presses. No contaminants were detected above RSR criteria in EBS11-1. Release is not known or suspected but confirming information needed.	Insufficient information to determine no release occurred from this AOC. ⁶
14	Container Storage Areas A and B (South of Building 18)	Paint; Waste acetone; Waste sodium hydroxide; Waste 1,1,1-TCA; Chromium-contaminated plating wastes; Sodium hydroxide; Waste jet fuel; Waste oil	Used from 1983 to 1986	Containerized liquid and solid wastes, typically in 55-gallon drums, were collected from locations at the facility and brought to these storage areas. Container Storage Areas A and B had a combined storage capacity of 2,750 gallons. No solvent or fuel-related contamination or cyanide was detected in soil samples collected from outside the perimeter of the storage area. PCBs not known to have been handled in this area were detected at less than 1 ppm in soil. No samples were collected from beneath the concrete pad. Release is not known or suspected but confirming information needed.	Insufficient information to determine no release occurred from this AOC. ⁶ Requires administrative RCRA closure. ⁵
15	Sludge Roll-off Container Area North of Building 71	Sludge	From 1986 until the facility ceased operation (date unknown)	No samples were taken from within this area, but the area was contained within a concrete berm and sludge material was stored in the roll-off for a period of less than 90 days.	No release suspected from AOC activity. Requires administrative RCRA closure. ⁵

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
18	Equalization Impoundment (Lagoon #1)	Cyanide; Cr(VI); Metal Hydroxide; Sodium hypochlorite; Sodium hydroxides	Operated from 1958 to 1986	<p>The Equalization Lagoon had an approximate capacity of 480,000 gallons. The lagoon has been closed under RCRA Subtitle C, and a post-closure groundwater monitoring program is being conducted.</p> <p>LNAPL has been detected in monitoring well LW-5S, and additional investigations are planned for delineation of the extent of the LNAPL.</p>	<p>RCRA closed LDF under interim status, requires continued post-closure care, updated post-closure plan to meet 40 CFR 264 subparts G&H, compliance monitoring and corrective action as needed in response to monitoring data.</p> <p>Engineered control-- requires evaluation of RSR compliance within context of DEP approved RCRA closure.</p> <p>Additional evaluation required for contamination detected in monitoring well LW-5S.</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
19	Sludge Drying Beds (Lagoons #2, #3, and #4)	Cyanide; Cr(VI); Metal Hydroxide; Sodium hypochlorite; Sodium hydroxides	Operated from 1958 to 1986	Lagoon #2 was 8 feet deep with an approximate 547,000-gallon capacity, lagoon #3 was 6.5 feet deep with an approximate 385,000-gallon capacity, and lagoon #4 was 8 feet deep with an approximate 754,000-gallon capacity. These beds have been closed under RCRA Subtitle C, and a post-closure groundwater monitoring program is being conducted.	RCRA closed LDF under interim status, requires continued post-closure care, updated post-closure plan to meet 40CFR264 subparts G&H, compliance monitoring and corrective action as needed in response to monitoring data. Further data may be necessary to compare contaminant concentrations in soil to RSR criteria. Engineered control-- requires evaluation of RSR compliance within context of DEP approved RCRA closure.
25	Outfall-008 (OF-008) and Drainage Ditch	Cyanide; Cr(VI); Metal Hydroxide; Sodium hypochlorite; Sodium hydroxides	The outfall was re-constructed in 1979.	Outfall-008 was used to discharge supernatant from the CWTP clarifier to the drainage channel immediately northeast of Building 18 and ultimately to the Housatonic River. Elevated concentrations of VOCs, PAHs, SVOCs, PCBs, and inorganics were identified in sediment impacted by discharges from OF-008. As there are no RSR criteria for sediment, no comparisons were performed.	Requires evaluation of sediment impacts and development of a remedial action plan for mitigation of these impacts to the extent necessary; additional information may be needed.
43	Former UST at Building 18	#2 Fuel Oil	1956 - 1989	A 1,000-gallon #2 Fuel Oil UST was located adjacent to Building 18. Fuel-related contaminants were not detected in SB20A1-1. No contaminants were detected above RSR criteria. No release known or suspected.	RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
<i>Manufacturing and Plating Areas</i>					
22	Waste Paint Tank Located Between Buildings 2 and 3	Paints (zinc chromate primer); Solvents	1941 - 1949	Paints and solvents were piped to a septic tank. Release from AOC is not suspected. No soil borings were collected at the suspected tank location.	Insufficient data to determine if there is or is not a release from this AOC ⁶ (See also AOC 9)
26	Building 2 historic septic systems			Release not known or suspected. Soil borings targeting located septic tanks detected contaminants at levels less than RSR criteria.	Insufficient information to determine release status of all septic systems included in this AOC. Remedial design for site may require additional septic system-focused evaluations. ⁴
37	Building 10 and Associated Satellite Accumulation Areas	Solvents	Constructed in 1929	Soil borings completed near sumps, drains, and trenches inside Building 10 do not indicate a release from this AOC, although some non-chlorinated-non-aromatic VOCs were detected in soil no contaminants associated with building uses exceed RSR criteria. Concentrations of cVOCs, chromium, and hexavalent chromium detected in groundwater exceed RSR criteria beneath Building 10; and are attributed to groundwater migrating from Building 2. The concentration of arsenic in soil at SB13G1-1 exceeds RSR criteria by several orders of magnitude (a detection of 3,550 mg/kg compared to the I/C DEC of 10.0 mg/kg).	Remediation required for this location. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
38	Building 2 Former USTs	Fuel oils; Gasoline; Oils	Oil USTs were abandoned in place in 1955. Septic tank was abandoned in place in 1969. Status of other tanks unknown. 2 fuel ASTs outside boiler room in 1940s	Former USTs at Building 2 include two 2,500-gallon oil USTs underneath Building and a 1,500-gallon sanitary UST 2. In addition, five other fuel storage tanks have been identified at Building 2: two 5,000-gallon fuel oil USTs; a 10,000-gallon and a 15,000-gallon fuel oil tank, and a 500-gallon gasoline tank. The status of these tanks is unknown. Samples from AOCs nearest the ASTs show no evidence of release. The exact location of some tanks is unknown. Furthermore, no sample locations were taken proximal to other identified fuel storage tanks at Building 2.	Additional evaluation required to determine no release occurred from this AOC. ⁶ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
49	Building 2 Manufacturing Areas	1,1,1-TCA; TCE; Alkaline cleaners; MEK; Acetone; Toluene; Sodium hydroxide; Chromic acid; Hydrofluoric acids	Constructed in 1929	A release has occurred. Concentrations of TPH, carbon tetrachloride, dichloromethane, TCE, PAHs, arsenic, vanadium, and cadmium in soil exceed RSR criteria. Concentrations of cVOCs in groundwater exceed RSR criteria.	Additional evaluation required. ⁶ Remediation required for release. ⁴
50	Building 2 Plating Area	Chlorinated solvents; Xylene; Toluene; Chromium; Nickel; Copper; Cadmium; Cyanide; TCE; MEK; Carbon Tetrachloride	Operations began in 1951	A release of plating solution occurred where Cr(VI) migrated to soils beneath the building floor. Chlorinated solvents used for degreasing and cleaning metal components were released in Building 2. A hexavalent chromium plume was identified in groundwater beneath the Chromium Plating Facility and extends beneath parts of Building 10 and Building 12. Concentrations of chromium and hexavalent chromium in soil exceed RSR criteria. Concentrations of TCE, cadmium, chromium, copper, cyanide, Cr(VI), and nickel in groundwater exceed RSR criteria.	Remediation required for release. ⁴
51	Building 3 Plating Area	Solvents; Degreasers; Chromium	Operated from 1951 to mid-1970s	A release has occurred. Elevated concentrations of cVOCs and Cr(VI) were identified in groundwater where chromium plating was conducted. Cr(VI) was detected beneath the southeastern portion of Building 3. Concentrations of cVOCs in groundwater exceed RSR criteria.	Additional evaluation required. ⁶ Remediation required for release. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
--	Former Gasoline USTs near Building 10	Gasoline	Approximately 1931 to 1943	Two 1,000-gallon gasoline USTs were identified on fire maps (AFM FIC, 1931). The current status of these tanks is unknown. No release is known or suspected. No detected concentrations in soil boring SB1311-1 are greater than RSR criteria.	Insufficient information to determine no release occurred from this AOC. RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
<i>Research and Development</i>					
31	Building 6 and Associated Satellite Accumulation Areas	Waste calibration fuel; Waste jet fuel; Waste oil	Constructed in 1944	Building 6 was used for engine testing, parts storage, painting, and as an experimental hangar. 55-gallon drums were used for storage within various satellite accumulation areas located throughout the building. A release has occurred from this AOC; Fuel constituents and other VOCs were detected in soil. Also, concentrations of arsenic in soil exceed RSR criteria at sample location SB24A1-1.	Additional evaluation of release needed to determine need for remediation due to release. Remediation required for arsenic at location. ⁴ Remediation required for release. ⁴
34	Building 3A and Associated Satellite Accumulation Areas	Waste solvents (1,1,1-TCA); Acid wastes; Waste jet fuel; Waste oil	Constructed in 1942	Building 3A was used for engineering and chemical laboratories, a machine shop, a heat treatment area, and office space. Activities conducted within Building 3A have released VOCs to underlying soil. In addition, waste solvents (1,1,1-TCA), waste jet fuel, waste oil, and acid wastes were stored in 55-gallon drums in satellite accumulation areas within the building, although there is no evidence of a release from these activities. Analytical results from soil samples collected beneath the building floor indicate fuel-related contamination. Concentrations of TPH in soil exceed RSR criteria. Results of the 2004 soil vapor survey identified that TCE and PCE concentrations were above soil vapor RES and I/C VC in Building 3A. In groundwater beneath Building 3A, concentrations of PCE exceed RES VC, and cVOC concentrations exceed both RES and I/C VC.	Remediation required for release. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
39	Building 4 Former Brine UST	Brine; Metals; Sludge	The ECM process was decommissioned in 1987, and the tank was removed in 1989.	A 20,000-gallon brine storage tank is located beneath the northernmost corner of Building 4, and used during the ECM process (cutting of parts by placing metals in a brine bath). No release is known or suspected associated with the brine tank. Although fuel and volatile constituents were detected, no concentrations of detected analytes in soil samples were greater than the RSR criteria.	Data indicate historical pollution or polluted fill is present in area; additional evaluation needed. Remediation may be required for location if evaluation finds criteria exceeded.
40	Building 6 Former USTs	Fuels; Oil; Diesel; Gasoline	Two 550-gallon tanks removed in 1989. Two 5,000-gallon tanks initially abandoned in place in 1979 and removed in 1998.	Four former USTs were used to store fuel and oil for operations conducted in Building 6. There were two 550-gallon fuel USTs, a 5,000-gallon fuel UST, and a 5,000-gallon oil UST. Other storage tanks were identified in the vicinity of Building 6. A 1986 fire map depicts two 250-gallon diesel oil tanks west of the central portion of Building 6, and a 250-gallon gasoline tank. A release has occurred, based on visual evidence: during removal of one 5,000-gallon tank in 1998, petroleum-contamination was visually identified in surrounding soil.	Additional evaluation required for release. ⁶ Remediation required for release if evaluation finds criteria exceeded. ⁴ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
55	Building 72 and Associated Petroleum Storage Tanks	Diesel; Jet fuel	1965 - 1998	Building 72 served as a pumping station for fuel storage tanks. The building serviced two 10,000 and four 20,000-gallon diesel and jet fuel ASTs. Two 20,000-gallon tanks were installed in approximately 1965; the other four tanks were installed in the early 1980s. A release has occurred from this AOC. Petroleum-contaminated soils were identified during closure of the adjacent sludge drying lagoons in 1986; the contaminated soils were not removed. Concentrations of PAHs in soil exceed RSR criteria.	Additional evaluation required for release. ⁶ Remediation required for release. ⁴ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
56	Research and Development Area in Northern Building 3, Building 3A, and Building 4	Metals; Solvents; Fuels; Oils	Constructed in 1930. A spill of cleaning solvents occurred north of Building 3A in April 1989.	According to the PAS, this area was a disposal and uncontrolled release area. A release has occurred. Fuel-related contaminants and nickel were detected in soil. Chlorinated solvent and fuel-related contaminants were detected in groundwater, and chlorinated solvents were detected in soil vapor. Concentrations of arsenic, nickel, and TPH in soil, cVOCs in groundwater, and TCE and PCE in soil vapor exceed RSR criteria.	Additional evaluation required for release. ⁶ Remediation required for release. ⁴
59	Building 4 Drum Storage Area	Machining oil; Engine oils	Storage began in 1981.	This area was used to store 55-gallon drums of machining oil and engine oils used in engine testing and development at the facility. Release not known or suspected. Concentrations of detected contaminants do not exceed RSR criteria in samples from SB27E2-1, located at an area of staining and a crack in the floor.	Insufficient information to determine there is no release from this AOC. Data indicate historical pollution or polluted fill is present in area; additional evaluation needed. Remediation may be required for location if evaluation finds criteria exceeded.
60 & 61	Building 6A Waste Oil Rags (Satellite Accumulation Area) and Building 6A Waste TPC and Oil (Satellite Accumulation Area)	Waste Oil; TPC (aliphatic hydrocarbon)	Building 6A was built in 1966. Storage in satellite accumulation areas began in 1991.	Waste oil rags and waste TPC and oil were stored in 55-gallon drums in satellite accumulation areas located throughout the building. Fuel and solvent-related contamination were detected in soil at Building 6A. Concentrations of cVOCs in soil exceed RSR criteria.	Additional evaluation required for release. ⁶ Remediation required for release. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
--	Building 53 and Associated Fuel Storage Areas	Fuels	Building 53 was constructed in 1961. Open storage occurred in this area since at least 1943.	A 1962 drawing depicts two fuel USTs beneath the southern end of Building 53. A plan from 1964 shows four temporary mobile tankers immediately south of Building 53. Following the construction of Building 6 in 1944 stains and/or tanks are identified in aerial photographs. No samples taken.	Insufficient data to determine if there is or is not a release ⁶ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
<i>Testing Areas</i>					
23	Building 19 Dry Well	Solvents; Waste fuels; Oils	Disposal to the dry well reportedly ceased in 1987; it is unknown when disposal to the dry well may have begun	The location or existence of the dry well could not be determined based on a review of records and a site inspection conducted in October 2003. No samples taken.	AOC requires resolution through holistic data evaluation using multiple lines of evidence.
30	Building 34 and Associated Satellite Accumulation Areas	Waste oil; Filters; Jet Fuel	Constructed in 1953	Building 34 served as the pumphouse for the Former Jet Fuel Tank Farm. Accumulation areas at Building 34 contained 55-gallon drums of waste oil, filters, and jet fuel. No samples taken.	Insufficient data to determine if there is or is not a release ⁶
32	Building 5 and Associated Satellite Accumulation Areas	Waste jet fuel	Constructed in 1954	Reportedly, waste jet fuel was stored within 55-gallon drums in satellite accumulation areas located throughout the building. A 1986 fire insurance map identifies a 600-gallon fuel oil tank located in Building 5A. Release not known or suspected. Soil boring SB27E9-1 analyte concentrations are less than RSR criteria, and do not include fuel constituent detections.	Data indicate historical pollution or polluted fill is present in area; additional evaluation needed. Remediation may be required for location if evaluation finds criteria exceeded. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
33	Building 19 and Associated <u>Satellite Accumulation Areas</u>	Filters	Unknown	The satellite accumulation areas at Building 19 contained 55-gallon drums of waste filters. The locations of the satellite accumulation areas are unknown and likely changed over time. Building 19 was used for jet engine testing and turbine engine research and development. Release has occurred but concentrations of analytes were less than RSR criteria.	Additional evaluation required for release. Remediation required for release if evaluation finds criteria exceeded. ⁴
35	Building 43 and Associated <u>Satellite Accumulation Areas</u>	Fuels; Filters	Constructed in the early 1940s	Building 43 was constructed in the early 1940s to serve as a pumping station for a fire suppression tank located adjacent to the building. Building 43 was modified in approximately 1986 to serve as the fuel pumping station for two 60,000 gallon ASTs that supplied the Building 19 jet engine testing and turbine research. Waste fuel and filters were stored in 55-gallon drums located in satellite accumulation areas in the building. No samples were collected from this AOC	Insufficient data to determine if there is or is not a release ⁶ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
44	Building 19 Former USTs	Fuels	Tanks removed in 1987	Four former fuel USTs, located in the vicinity of Building 19, were used in support of testing activities within the building. The USTs included two 550-gallon tanks, a 1,000-gallon tank, and a 2,000-gallon tank. Reportedly, all four USTs were removed in 1987. No samples were collected from this AOC	Insufficient data to determine if there is or is not a release ⁶ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
45	Jet Fuel Tank Farm Former USTs	Jet Fuel; Diesel; Waste Fuel; Varsol	In use from 1953 - 1989	<p>Eighteen former USTs were located at the Former Jet Fuel Tank near Building 34, including five 20,000-gallon jet fuel tanks, and one 20,000-gallon diesel tank, a 4,000-gallon waste fuel tank, a 5,000-gallon Varsol tank, a 1,000-gallon fuel tank, and nine 300-gallon fuel tanks.</p> <p>During tank removal, approximately 2,000 cubic yards of fuel-contaminated soil, containing levels of toluene and xylenes up to 5,500 ppm were excavated. Soil samples taken following excavation of contaminated soil indicates residual fuel and chlorinated solvent-related contamination. Concentrations of arsenic, benzene, and TPH in soil exceed RSR criteria. Concentrations of vinyl chloride in groundwater exceed RSR criteria.</p>	<p>Additional remediation required for release.⁴</p> <p>RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.</p>
48	Building 16 and Associated Satellite Accumulation Areas	Waste oil; Fuel; Filters; Oily rags	Unknown	<p>Building 16 was used for production and development of engines in test cells, and various satellite accumulation areas that previously stored waste oil, fuel, filters, and oily rags in 55-gallons drums.</p> <p>Fuel-related contamination was detected in soil north of the central portion of Building 16, along the Dike. Concentrations of TPH exceed RSR criteria.</p>	<p>Remediation required for this location.⁴</p>
57	Drum Storage Area East (North) of Building 19	1,1,1-TCA; PCE; Solvents	Unknown	<p>There is documentation of a release of chlorinated solvents and fuel related to drum storage. An additional spill of diesel fuel into this area from overfilling of the adjacent ASTs resulted in the ultimate removal of approximately 120 cubic yards of soil that was sent off-site for disposal.</p> <p>Results of soil and groundwater samples indicate residual fuel and chlorinated solvent contamination in soil and groundwater and PCBs and cyanide in soil at the drum storage area. Concentrations of 1,1,2-TCA in soil exceed RSR criteria. Concentrations of cVOCs and arsenic in groundwater exceed RSR criteria.</p>	<p>Additional remediation required for release.⁴</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
58	Scrap Metal Yard North of Building 16	Scrap metal; Oils; Greases	Unknown	This area was used to store scrap metal that was reportedly covered in oils and greases. Fuel-related contaminants and PCBs were detected in soil at concentrations of 5 mg/kg or less, and black, tar-like material was noted during soil sampling at one of the soil boring locations. Concentrations of PCBs in soil at SB17A3-4 exceed RSR criteria.	Remediation required for release. ⁴
62 & -	Building 7 Waste Oil Satellite Accumulation Area and Building 77A Drains	Paints; Solvents; Petroleum; Fuels; Waste oil	Constructed in 1943	The drains associated with Buildings 7/7A handled waste petroleum product. Fuel and solvent-related contaminants and cyanide were detected in soil near the buildings. Concentrations of antimony, arsenic, cadmium, lead, and cVOCs in soil exceed RSR criteria.	Remediation required for release. ⁴
63 & 64	Building 8 Flammable Storage Area (Paints and Solvents) and Building 8 Waste Paint Satellite Accumulation Area	Flammable paints; Solvents	Used from 1943 – 1990s	Release not known or suspected; building has concrete containment dike and no floor drains. Concentrations of detected analytes at a boring adjacent to this area are less than RSR criteria.	Release not suspected but data indicate historical pollution or polluted fill is present in area; additional evaluation needed. Also, abutting AOCs require remediation, and their remedial confirmation design must consider this pollution.

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
65-67	Building 19 ASTs North of Building	Diesel; JP-5	Installed in 1953 and removed in 1998. Release in 1990.	<p>Three ASTs, including a 2,000-gallon diesel fuel #2 tank, a 1,000-gallon diesel fuel #2 tank, and a 1,000-gallon JP-5 tank were located to the north of Building 19. The tanks were reportedly occasionally overfilled. In June 1990, one of the diesel tanks was accidentally overfilled and 150 gallons of fuel was spilled to the ground surface. Approximately 100 gallons of this was collected by facility personnel and the remaining 50 gallons was removed along with contaminated soils from an open excavation west of the concrete pad, in the area of the drum storage area (AOC 57). The excavated soils were stockpiled in the bermed tank area, sampled, and sent off-site for disposal.</p> <p>Analytical results from samples collected underlying and south of the concrete pad indicate that no contaminants exceed RSR criteria.</p>	<p>Additional evaluation of adequacy of historical remediation may be needed.</p> <p>RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.</p>
68 & 69	Building 19 ASTs Northwest of Building	Jet-A jet fuel; JP-4 jet fuel	Installed in 1986 and removed in 1998.	<p>Two 60,000-gallon jet fuel ASTs were located northwest of Building 19, on a concrete pad in a bermed area. Prior to installation of the fuel tanks, a 400,000 gallon fire suppression tank was located in the area.</p> <p>No release is known or suspected. Analytical results from boring BR-1 located approximately 10 feet northwest of these tanks did not detect fuel constituents.</p>	<p>RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.</p>
--	Building 9 Floor Drains	Oil; Grease; Hydraulic fluid	Constructed in 1943	<p>Batteries, oil, grease, and hydraulic fluid were stored in 55-gallon drums in Building 9. The floor drains lead to the OATP via pump station Building 64-1.</p> <p>Soil boring SB13E1-1 was completed adjacent to the storm drain line from Building 9. Concentrations of detected analytes at sample location SB13E1-1 are less than RSR criteria.</p>	<p>Insufficient data to determine if there is or is not a release⁶</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
--	ASTs Southeast of Building 16 [AKA Building 33 and associated ASTs]	Engine oil; Diesel	1953 - 1998	Four 3,000-gallon engine oil tanks were originally located in this area, likely since construction of Building 16 in 1953. These tanks were removed between 1980 and 1984, and replaced by two 40,000-gallon #2 Diesel ASTs. The diesel tanks were removed in 1998. No soil data beneath B-33.	Insufficient data to determine if there is or is not a release RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
<i>Stormwater and Wastewater Systems</i>					
4	Building 16 Floor Drains, Sumps, and Piping	Carbon Tetrachloride; TCE; 1,1,1-TCA; Mercury; Fuels	Used from 1953 until 1991	Documentation indicates that VOCs and fuels were released to the drainage system in Building 16. Detections of VOCs in soils collected along the drainage system and downgradient groundwater suggest that a release has occurred. Other potential contributing sources of VOCs and fuel include prior usage of this area in the 1940s for open storage of containers and documented releases from the Building 34 Jet Fuel Tank Farm. Concentrations of TPH and lead in soils at SB17A2-6 and PCBs at SB17A2-1 exceed RSR criteria. No concentrations of analytes detected in groundwater exceed RSR criteria. In soil vapor, TCE was detected slightly above RSR criteria in SG-99-32.	Insufficient information to determine release status of all lines included in this AOC. ⁶ Remediation required for release. ⁴
5	Stormwater Collection Lines			Determination of a release not possible due to the presence of other sources of contamination.	Remedial design for site may require additional line-focused evaluations.

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
6	OATP in Building 64-2	Copper; 1,1,1-TCA; Ammonia; Sodium hydroxide; Chromic acid; Zygo ; Oil and grease	The OATP was constructed in 1976. Releases were documented in 1978 and 1981.	<p>This area contains an oil skimmer in Building 64-2, the 200,000-gallon surge tank adjacent to B64-2 and the 10,000-gallon sodium hydroxide (NaOH)/Alum tank at B64-2. Accidental releases to the stormwater system have been documented. No samples have been collected.</p> <p>Following the construction of the waste transfer system and closure of the wastewater collection lines in the early- to mid-1980s, the OATP continued to receive wastewater in the form of supernatant pumped from waste oil tanks at the former Oil House Tank Farm. The continuous or intermittent presence of oil, copper, 1,1,1-TCA, and ammonia discharge to the OATP was noted in the early 1990s. No samples have been collected.</p>	<p>Insufficient information to evaluate releases from system into underlying soils/groundwater.</p> <p>Determination of a release from AOC may be problematic due to location on an area of fill.</p> <p>Active stormwater treatment facility.</p>
52	Facility Outfalls-001 through -006 and associated Intertidal Flats	Solvents; Paints ; Waste oils; Fuels	Constructed in 1953	<p>Solvent, PCBs, and fuel-related contaminants were detected in sediment samples located adjacent to the six facility outfalls associated with the stormwater system. As there are no RSR criteria for sediment, no comparisons were performed. It should be noted however, that these samples are located off the SAEP property within the tidal flats, in an area of the Housatonic River that likely has been contaminated as a result of the numerous industrial operations upstream. The current shoreline is a result of several expansions, most notably in 1943, which utilized both river sediments and fill from offsite.</p>	<p>Requires evaluation of sediment impacts and development of a remedial action plan for mitigation of these impacts to the extent necessary; additional information may be needed to develop R.A.P.</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
24	Discharge to the Housatonic River and associated Intertidal Flats at Outfall-007	Chromic acid; Cr(VI); Zyglo (metal penetrant dye)		<p>Treated stormwater from the OATP discharges through Outfall 007. Four chemical releases to the intertidal flats have been documented. These releases involved:</p> <ul style="list-style-type: none"> • In May 1978, a spill of 25 to 30 pounds of chromic acid was discharged into the OATP and into the river via OF-007 (W-C, 1991). • In August 1978, CTDEP was advised that a yellow plume of Cr(VI) was extending approximately 200 yards from OF-007 (CDM FPC, 1992). This release occurred during a period when it is suspected that effluent from the CWTP was routed to the OATP for discharge via OF-007. • Approximately 75 gallons of oil sludge from the OATP bypassed clogged skimmers and discharged from OF-007 in July 1979 (W-C, 1991). • In October 1981, approximately 20 gallons of "Zyglo," a fluorescent metal penetrant dye was spilled into a storm drain and discharged from OF-007 (W-C, 1991). <p>Sediment sample location OF-007 (SD) was taken at Outfall 007. Analytes detected in sediment included cVOCs, VOCs, PAHs, SVOCs, and PCBs. As there are no RSR criteria for sediment, no comparisons were performed.</p>	Requires evaluation of sediment impacts and development of a remedial action plan for mitigation of these impacts to the extent necessary; additional information may be needed to develop RAP.

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
<i>Miscellaneous AOCs</i>					
17	Soil Pile, South Parking Lot fill area	Fuels; Metals	1989 - 1990	<p>In September 1989, an estimated 3,000 cubic yards of contaminated soil, discovered during removal of USTs at the Jet Fuel Tank Farm were excavated and stockpiled at the South Parking Lot. Toluene and xylene were detected at levels up to 5,500 mg/kg in these soils. Additional samples collected just outside the area of removal identified soil containing TPH at concentrations up to 5,500 mg/kg.</p> <p>In 1990, Buildings 52 and 55 were demolished in order to construct Building 65. During excavation for the Building 65 foundation, contaminated soils contained petroleum hydrocarbons and inorganics including cadmium, chromium, lead and copper distributed throughout much of the Building 65 area (Textron 1991). An estimated 12,000 cubic yards of contaminated soil was excavated to the low-tide water level and added to the soil pile at the South Parking Lot.</p> <p>The soils were aerated on-site to reduce contaminant levels and then placed in the South Parking Lot. Concentrations of 1,1,2,2-TCA, PAHs, SVOCs, and cadmium exceed RSR criteria for samples from borings completed in the final placement location of this soil.</p>	Reuse of treated soil requires evaluation of RSR compliance within context of DEP approved placement.
20	Causeway			<p>Non time Critical Removal Action installed erosion resistant cover structure isolating soils from direct exposure.</p>	<p>Removal Action Completed</p> <p>Requires evaluation to validate as final remedy, an Environmental Land Use Restriction preventing disturbance, and appropriate O&M and Financial assurance</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
21	Building 65 Area; Previous Location of Buildings 52 and 55	Paint (zinc-chromate); Petroleum	Unknown	In 1990, Buildings 52 and 55 were demolished in order to construct Building 65. Buildings 52 and 55 had previously been used for production material warehousing. During excavation for the Building 65 foundation, contaminated soils were discovered that contained petroleum hydrocarbons and inorganics including cadmium, chromium, lead and copper distributed throughout much of the Building 65 area. This contamination was believed to partially be the result of disposal of zinc-chromate undercoat used in aircraft painting processes conducted in Building 2 in the 1940s, and/or from fill obtained from contaminated river sediments. An estimated 12,000 cubic yards of paint- and petroleum-contaminated soil was excavated to the low tide water level and placed in a soil pile in the South Parking Lot. Soil samples were collected outside the footprint of the excavated soils. The concentration of TPH in soil at SB06A2-2 exceeds RSR criteria.	Additional evaluation of AOC required. ⁶ Further remediation required for release if evaluation finds criteria exceeded.
27	Building 58 and Associated Satellite Accumulation Areas	Waste 1,1,1,1-TCA; Waste jet fuels	Constructed in 1967	Waste 1,1,1,1-TCA and waste jet fuels were stored in satellite accumulation areas located in the building. This area was also used for open storage in the 1950s and 1960s. It is not believed that activities within the building were associated with a release. Oil was reportedly observed in subsurface soil during pile driving for construction of the building. This area was used for open storage in the 1950s and 1960s. No samples were collected from this AOC.	Insufficient data to determine if there is or is not a release. Visual evidence reported of pollution in area, likely not associated with AOC, but requires further evaluation.
29	Building 48 and Associated Satellite Accumulation Areas	Paint cans	Constructed in 1961	Prior to construction of Building 48, aerial photographs indicated that this area was used for open storage. Paint cans and waste paint were stored in Building 48 in 55-gallon drums in satellite accumulation areas located in the building. Release determination not possible due to contamination in area. The concentration of dichloromethane in soil exceeds RSR criteria.	Remediation required for this location. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
36	Building 12 and Associated Satellite Accumulation Areas	Ammonia; Waste filters	Constructed in 1942	Waste filters were stored in accumulation areas located in this building. A 1943 fire insurance map depicts a machine oil storage area adjacent to the building. A 1956 map shows three 1,000 gallon anhydrous ammonia tanks in this area. No soil samples collected from this AOC.	Insufficient data to determine if there is or is not a release.
41	Building 9 Former USTs	Gasoline	Shown on maps as early as 1931. Four tanks removed in 1989 and two tanks removed in 1995.	Fire maps indicate gasoline USTs in the area southeast of Building 9 and north of Building 10. A total of six tanks were located in this area: two 2,500-gallon unleaded gasoline tanks, two 3,000-gallon gasoline tanks, and two 3,000-gallon unleaded gasoline tanks. A release has occurred but no analytical results exceed RSR criteria.	Additional evaluation of AOC required. ⁶ RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
42	Building 9 USTs				see AOC 41
46	Building 52 Former UST	Oil	Abandoned in place in 1969	A 1,000-gallon oil UST was located beneath Building 52 until it was sand filled and abandoned in 1969. One soil boring (SB08J1-1) adjacent to the UST found no concentrations of detected analytes greater than the RSR criteria.	RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.
47	Building 73 Radioactive Waste Storage Area			Following radiological surveys of the former storage areas, the NRC released the AOC for unrestricted use. No samples for other potential pollutants at area.	NRC License terminated 29 September 2000. No further action for radiation issues. Additional evaluation of location required for pollutants other than radiation. Remediation required if evaluation finds criteria exceeded. ⁴

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
54	Building 17	No 4. fuel oil	1952 - late 1980s	<p>A 10,000-gallon aboveground storage tank that contained No. 4 fuel oil was used to supply fuel to a boiler located in this building. Petroleum stained soils observed in area in 1988 but not removed</p> <p>Release not known or suspected from AOC; any release would flow over slab to floor drain. No concentrations of detected analytes in soil adjacent to floor drain are greater than the RSR numerical criteria.</p>	<p>Visual evidence of release reported at location may indicate historical pollution or polluted fill is present in area. Additional evaluation needed. Also, abutting AOCs require remediation, and their remedial confirmation design must consider this pollution.</p> <p>RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.</p>
70-72	ASTs near Building 44	Oil-alum; Methanol Fuel Oil #6	Unknown	<p>Three ASTs were located in this area: a 10,000-gallon oil-alum tank was transferred from its location near Building 13 in 1988; a 5,000-gallon methanol AST; and a 400,000-gallon Fuel Oil #6 AST.</p> <p>No soil samples collected from this AOC.</p>	<p>Insufficient data to determine if there is or is not a release.</p> <p>RSR compliance demonstration requires representative sampling; additional data, including TPH sampling, is needed.</p>
73	Fuel, Lubricating, and Hydraulic Oils near Building 69	Fuels; Lubricating oil; Hydraulic oil	1980 - 1991	<p>Fuels and lubricating and hydraulic oils were stored near former Building 69. Reportedly, less than 13,750 gallons (at any given time) of these fluids were stored in 55-gallon drums in this area</p> <p>No soil samples collected from this AOC.</p>	<p>Insufficient data to determine if there is or is not a release.</p>
74 & 75	PCB Transformers in Building 2 and Building 3	PCB		<p>Release not known or suspected, based on visual observations made during transformer removal. All PCB containing transformers were removed in 2005, after RI preparation.</p>	<p>Insufficient information; pending DEP receipt and review of transformer removal report of actions.</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
--	Former Pits or Lagoons - North Parking Lot	Fuels	1940s	<p>Aerial photography from 1943 indicates the presence of possible pits or small lagoons in the North Parking Lot. In 1944, Building 2 was expanded to the northwest, and during the expansion this area was likely filled. No disposal history for this area is available.</p> <p>Analytical results from samples collected in this area indicate fuel-related contaminants. Concentrations of arsenic and TPH in soil exceed RSR criteria.</p>	Remediation required for release. ⁴
--	Shed North of Building 12 Used to Store Cuttings	Metals cuttings; Machine oils	1990s	<p>A shed located to the northwest of Building 12 was used to store metal cuttings in the 1990s, in a dumpster within a covered bermed area. A former building was located in this area during the 1940s, and was used as a test house and as a mould shop. Machining oils were stored in an adjacent portion of Building 12. Aerial photography from 1970 and 1980 show open storage in this area.</p> <p>A release is not known or suspected from the cutting storage activity. No analytes were detected in soil at a sampled location in the shed.</p>	<p>Insufficient information to determine if a release occurred associated with historical area usage.</p> <p>Remediation required if evaluation finds criteria exceeded.⁴</p>
<i>Additional areas identified by DEP</i>					
--	PCB containing oil in vicinity of sump near Pump House 38			<p>PCBs were detected in waste oil in the sump at Building B-38. Following the identification of PCB containing oil the stormwater line leading to Building B-38 sump was lined to prevent infiltration. Investigation conducted after RI preparation documents PCBs remain in soil near the stormwater line.</p>	Remediation required for release. ⁴
--	Fill Areas			<p>Areas of fill are present on site, especially along former shoreline filled in 1940s. Baseline soil evaluation identified pollution present in soils and above screening criteria is commonly but not always associated with an AOC. Origin of this pollution (from AOCs or fill quality or general usage of area not associated with an AOC) may be indeterminate.</p>	<p>Remediation required for pollution in area, and may require additional samples depending on remedial approach.</p> <p>RSR DEC compliance evaluation required for fill soils not removed through consolidation of multiple AOCs and proximate fill soils above criteria.</p>

AOC # ¹	Description ²	Potential Pollutant(s) ²	Date of Storage, Release, or Disposal ²	Environmental Summary ²	AOC Status ³
--	Isolated Areas with detections of pollution			<p>Localized areas of shallow (possibly fill) soils are above the baseline criteria/deflection point but not apparently associated with an identified AOC, notably but not limited to the following, where RSR criteria are exceeded:</p> <p>PAHs in location between B2 and B65, in front of B2 along Main Street, south parking lot area (including near B71), and small parking lot near corner of Main St and Sniffins Lane.</p> <p>Cadmium in south parking lot.</p> <p>Several pollutants in the general vicinity of B7-9, and north of B42 extending towards the Hazardous Waste and Waste Oil Area.</p>	<p>Insufficient information to determine if localized detections above criteria reflect release from an unidentified AOC or are fill-related. Further evaluation needed to determine the degree and extent of the pollution above criteria.</p> <p>Remediation required where pollution is above criteria. Some areas are in or near AOCs to be remediated and may be⁴ concurrently mitigated.</p>
--	Site-wide Baseline Condition	Various cVOCs, BTEX, TPH, PAHs, metals		<p>Some site baseline concentrations are above naturally occurring levels, and some baseline screening criteria/deflection points exceed RSR criteria. These are attributed to general site usage/filling and/or assumed existence of numerous small isolated releases.</p> <p>TPH exceeds Residential DEC in shallow soils.</p> <p>Chlorinated VOCs and petroleum hydrocarbons may be present at levels above RSR criteria in groundwater and soil vapor underlying much of the Main Parcel.</p>	<p>Remediation/control (e.g. ELUR) required for statistical site-wide conditions above criteria.</p>

<p>Acronyms:</p> <p>1,1,1-TCA = 1,1,1-trichloroethane AOC = Area of Concern AST = Aboveground storage tank Bgs = Below ground surface BTEX = Benzene, toluene, ethylbenzene, and xylene CDF = Cyanide Destruction Facility cis-1,2-DCE = cis-1,2-dichloroethene Cr(VI) = Hexavalent chromium cVOCs = Chlorinated volatile organic compounds CWTP = Chemical Waste Treatment Plant DEC = Direct exposure criteria of RSR ECM = Electrochemical machining ELUR = Environmental Land Use Restriction IC = Industrial/commercial LDF = Land disposal facility per RCRA LNAPL = Light non-aqueous phase liquid mg/kg = Milligrams per kilogram NaOH = Sodium hydroxide NPDES = National Pollutant Discharge Elimination System NRC = Nuclear Regulatory Commission</p>	<p>O&M = Operations and Maintenance PlanOATP = Oil Abatement Treatment Plant OF = Outfall PAH = Polynuclear aromatic hydrocarbon PCB = Polychlorinated biphenyl PCE = Tetrachloroethene RAP = Remedial Action Plan RCRA = Resource Conservation and Recovery Act RSR = Remediation Standard Regulation SAEP = Stratford Army Engine Plant SVOC = Semi-volatile organic compound TCE = Trichloroethene TPH = Total petroleum hydrocarbons USEPA = United States Environmental Protection Agency UST = Underground storage tank VOC = Volatile organic compound VC = Volatilization Criteria</p>	<p>Notes:</p> <ol style="list-style-type: none"> 1. Not all AOCs have assigned numbers. AOC variously used to describe specifically the waste management practice and also the particular footprint at SAEP, irrespective of the waste handling. 2. Information derived from Final RI. 3. Status as determined by DEP 4. For remedial design additional site information may be needed, depending on the remedial approach selected. 5. Administrative closure under RCRA may require re-evaluation of containment integrity and potential release pathways through chip, wipe or core sampling. If pollution is present under containment, regardless of origin, location must be identified as an AOC and integrated into corrective action program. 6. See Army letter dated 30 January 2006, which identified additional evaluations to be implemented as part of remedial design. Note that with different remedial options data needs may vary and that DEP has thus deferred approval of specific data evaluations proposed in letter.
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SECTION III

Stewardship Permit
Compliance Schedule

Stratford Army Engine Plant
EPA ID No. CTD001181502
Permit No. DEP/HWM/CS-134-003

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SECTION III COMPLIANCE SCHEDULE

A. All conditions set forth in Section III.A. of this permit, shall be conducted within thirty (30) calendar days of the effective date of this permit or upon transfer of the permit whichever is later. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Retention of Consultant. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this permit and shall, by that date, notify the Commissioner in writing of the identity of such consultant(s), and the sections of this permit for which they have been retained. The Permittee shall similarly inform the Commissioner within ten (10) calendar days of retention of any additional or replacement consultants.

The primary consultant(s) retained to perform all investigation and remediation activities in response to this permit must be an independent, licensed environmental professional, and must provide professional services in accordance with RCSA Section 22a-133v-1 through 8 (the Licensed Environmental Professional Regulations). Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

B. All conditions set forth in Section III.B. of this permit, shall be conducted within sixty (60) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Security Plan. The Permittee shall submit a Security Plan, to meet the requirements of Condition No. II.B.2.(e) of this permit. A revised plan shall be submitted within sixty (60) days prior to implementation of significant changes in site conditions as a result of site redevelopment (occupancy of buildings, demolition of buildings, major change of access routes, etc.).
2. Submittal of Schedules. The Permittee shall submit for the Commissioner's review and written approval a schedule for:
 - (a) The submission of a Closure Plan for the Hazardous Waste Management Units, including an outline of a proposed closure approach and schedule in accordance with Condition No. II.A.1.(a) of this permit.
 - (b) The submission of a revised Post-Closure Plan for the RCRA Land Disposal Units, in accordance with Condition No. II .A.2.(b) of this permit.

3. Liability Coverage. The Permittee shall submit for the Commissioner's review the liability coverage required pursuant to Condition No. II.A.(1)(h) of this permit.
- C. All conditions set forth in Section III.C. of this permit, shall be conducted within one hundred twenty (120) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.
1. Preparedness/Contingency Plans. The Permittee shall submit the Preparedness, Prevention, Contingency and Emergency Plans and Procedures, to meet the requirements of Condition No. I.E.12. of this permit. A revised plan shall be submitted within sixty (60) calendar days of significant changes in Site conditions.
 2. O&M Plan. The Permittee shall submit a comprehensive Operations and Management Plan for all remedial systems of treatment and control, in accordance with Condition No. I.E.9. of this permit. A revised plan shall be submitted within sixty (60) calendar days of installation of any future remedial system of treatment and control.
 3. Public Participation Plan. The Permittee shall submit a Public Participation Plan for the Commissioner's review and written approval in accordance with the requirements of Condition No. II.B.12. of this permit.
 4. Cost Estimate for Closure. The Permittee shall submit for the Commissioner's review and written approval the cost estimate for performing closure of the Hazardous Waste Management Units in accordance with Condition No. II.C.2. of this permit.
 5. Cost Estimate for Post-Closure. The Permittee shall submit for the Commissioner's review and written approval the cost estimate for performing post-closure care of the land disposal units in accordance with Condition No. II.C.2. of this permit.
 6. Submittal of Schedules. The Permittee shall submit for the Commissioner's review and written approval a schedule for the submission of:
 - (a) The identification of data gaps in the site investigation and the evaluation of compliance with the RSRs in accordance with Condition No. II.B.2.(a) of this permit;
 - (b) A Quality Assurance Project plan (QAPP) in accordance with Condition No. II.B.2.(b) of this permit;
 - (c) The Preconstruction Survey in accordance with Condition No. II.B.2.(d) of this permit;

- (d) The RAP(s) for the Site in accordance with Condition No. II.B.7. and the associated cost estimate in accordance with Condition No. II.C.2. of this permit.
- D. All conditions set forth in Section III.D. of this permit, shall be conducted within one hundred and eighty (180) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.
1. The Permittee shall develop and submit for the Commissioner's review and written approval, ecologically based and human health remedial goals for groundwater migrating off the Site to the tidal flats and other nearby surface waters in accordance with Condition No. II.B.2.(f) of this permit.
 2. The Permittee shall develop and submit for the Commissioner's review and written approval, ecologically based and human health remedial goals for sediments within the tidal flats and 008 outfall area in accordance with Condition No. II.B.2.(g) of this permit.
- E. All conditions set forth in Section III.E. of this permit, shall be conducted within three hundred sixty five (365) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.
1. Progress Reports. The Permittee shall submit a progress report for the Commissioner's review describing the actions which the Permittee has taken to date to comply with the terms and conditions of this permit and annually thereafter until all actions required by this Permit have been completed to the Commissioner's satisfaction.

