STATE OF MISSISSIPPI
HAZARDOUS WASTE MANAGEMENT PERMIT

TO CONDUCT POST-CLOSURE ACTIVITIES OF A HAZARDOUS WASTE MANAGEMENT FACILITY IN ACCORDANCE WITH THE REGULATIONS GOVERNING HAZARDOUS WASTE MANAGEMENT

THIS CERTIFIES THAT

Cavenham Forest Industries LLC
EPA ID No. MSD057226961

is hereby authorized to conduct post-closure care for a closed surface impoundment

located at

9502 Creosote Road
Gulfport, Mississippi
Harrison County

This permit is issued under the authority of the Mississippi Solid Wastes Disposal Law, and particularly Section 17-17-27 thereof, and rules adopted and promulgated thereunder, all of which authorize the Department of Environmental Quality to enforce all applicable requirements, under the Mississippi Hazardous Waste Management Regulations, and associated conditions included therein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

_____

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit Issued: **Permit No.: HW057226961**

Expires:

Draft for Public Notice

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Attachments are taken directly from the application and have been reformatted to fit the permit.

MODULE 1 – GENERAL PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

Subject to Title 11 Miss. Admin. Code Pt. 3, Ch. 1 Mississippi Hazardous Waste Management Regulations (MHWMR) Rule 1.16 Part 270.4, compliance with this permit constitutes compliance, for purposes of enforcement, with Mississippi Solid Waste Disposal Law of 1974, Section 17-17-1 *et seq*. and Subtitle C of the Resource Conservation and Recovery Act (RCRA), except for those requirements not included in the permit but which become effective by statute or which are promulgated by MHWMR Rule 1.15 Part 268. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, and invasion of other private rights, or any infringement of state or local laws or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Section 3008(a), Section 3008 (h), Section 3013, of Section 7003 of RCRA; Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 *et seq*., commonly known as CERCLA) or any other law providing for protection of public health or the environment.

I.B. PERMIT ACTIONS

I.B.1. Permit Modification, Revocation and Reissuance, and Termination

This permit may be modified, revoked and reissued, or terminated for cause as specified in MHWMR Rule 1.16 Part 270.41, 270.42, 270.43, or 270.50(d). The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition.

I.B.2. Permit Renewal

This permit may be renewed as specified in MHWMR Rule 1.16 Part 270.30(b) and Permit Condition 1.E.2. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

I.C. SEVERABILITY

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

I.D. DEFINITIONS

For purposes of this permit, terms and conditions used herein shall have the same meaning as those in RCRA and MHWMR Rule 1.23 Part 124, Rule 1.1 Part 260, Rule 1.2 Part 261, Rule 1.7 Part 264, Rule 1.15 Part 268, and Rule 1.16 Part 270; unless this permit specifically provides otherwise. Where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary or the generally accepted scientific or industrial meaning of the term.

I.D.1. Executive Director

"Executive Director" means the Executive Director of the Mississippi Department of Environmental Quality, or a designee or authorized representative, or as otherwise specified in this permit. The Executive Director also serves as the designee of the Mississippi Environmental Quality Permit Board and the Mississippi Commission on Environmental Quality on actions designated by those two bodies under 11 Miss. Admin. Code Pt, 1, Ch. 1 and 11 Miss. Admin. Code Pt, 1, Ch. 4.

I.D.2. Department

“Department” means the Mississippi Department of Environmental Quality, or its Executive Director and his designees acting on its behalf, with the powers and duties as described in Miss. Code Ann § 49-2-7.

I.D.3. Permit Board

“Permit Board” means the Mississippi Department of Environmental Quality established pursuant to Miss. Code Ann. § 49-17-28 and the Permit Board’s designees acting on behalf of the Permit Board under the authority of 11 Miss. Admin. Code Pt, 1, Ch. 4.

I.E. DUTIES AND REQUIREMENTS

I.E.1. Duty to Comply

The Permittee shall comply with all conditions of this permit except to the extent and duration noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of Mississippi Hazardous Waste Management Regulations and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

I.E.2. Duty to Reapply

If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days prior to permit expiration.

I.E.3. Permit Expiration

Pursuant to MHWMR Rule 1.16 Part 270.50, this permit shall be effective for a fixed term not to exceed ten (10) years. This permit and all conditions herein will remain in effect beyond the expiration date if the Permittee has submitted a timely, complete application (per MHWMR Rule 1.16 Part 270.10, Rule 1.16 Part 270.13 through Part 270.29) and, through no fault of the Permittee, the Permit Board has not issued a new permit, as set forth in MHWMR Rule 1.16 Part 270.51.

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

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.E.5. Duty to Mitigate

In the event of noncompliance with the 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 significant adverse impacts on human health or the environment.

I.E.6. Proper Operation and Maintenance

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

I.E.7. Duty to Provide Information

The Permittee shall furnish to the Department, within a reasonable time, any relevant information that the Department 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 the Department, upon request, copies of records required by this permit.

I.E.8. Inspection and Entry

Pursuant to MHWMR Rule 1.16 Part 270.30(i), the Permittee shall allow an authorized representative of the Department, upon the presentation of credentials and other documents, as may be required by law, to:

I.E.8.a. Enter, at reasonable times, upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

I.E.8.b. Have access to and copy, at reasonable times, any records that must be kept under the condition of the permit;

I.E.8.c. Inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, operations regulated or required under this permit; and

I.E.8.d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.E.9. Monitoring and Records

The Permit Board may require such testing by the Permittee, and may make such modifications to this permit, deemed necessary to ensure implementation of new regulations or requirements, or to ensure protection of human health and the environment.

I.E.9.a. Samples and measurements taken for monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be an appropriate method from Appendix I of MHWMR Rule 1.1 Part 261, an appropriate technical procedure developed by EPA Region 4 Lab Services and Applied Sciences Division (LSASD), or an equivalent method approved by the Permit Board. Procedures for sampling contaminated media must be those identified in the EPA Region 4 LSASD procedures or an equivalent method approved by the Permit Board. Laboratory methods must be those specified in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, Standard Methods of Wastewater Analysis*, or an equivalent method approved by the Permit Board.

I.E.9.b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by MHWMR Rule 1.7 Part 264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by the Permit Board at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall also maintain records for all groundwater monitoring wells and associated groundwater surface elevations for the duration of the post-closure care period. All records required by this condition shall be maintained at the facility or at the office of the facility contact.

I.E.9.c. Pursuant to MHWMR Rule 1.16 Part 270.30(j)(3), records of monitoring information shall specify:

i. The dates, exact place, and times of sampling or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates the analyses were performed;

iv. The individuals who performed the analyses;

v. The analytical techniques or methods used; including any method detection limits for said technique; and

vi. The results of such analyses.

I.E.10. Reporting Planned Changes

The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility.

I.E.11. Anticipated Noncompliance

The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

I.E.12. Transfer of Permits

This permit may be transferred to a new owner or operator only after notice to the Permit Board and only if it is modified or revoked and reissued pursuant to MHWMR Rule 1.16 Part 270.40(b) or Part 270.41(b)(2) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate act. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post-closure period, the Permittee shall notify the new owner or operator in writing of the requirements of MHWMR Rule 1.7 Part 264 and Rule 1.16 Part 270, of HSWA, and of this permit.

I.E.13. Twenty-Four Hour Reporting

I.E.13.a. The Permittee shall report to the Department any noncompliance with the permit, spill, accident or other occurrence that may endanger health or the environment. (Note: the Permittee shall advise neighboring members of the community and City and County emergency response officials as soon as possible). Any such information shall be reported orally to the Department within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:

i. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

ii. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the hazardous waste management facility that could threaten the environment or human health outside the facility.

I.E.13.b. The description of the occurrence and its cause shall include:

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

ii. Name , address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.13.c. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times; whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Department may waive the five-day written notice requirement in favor of a written report within 15 days.

I.E.14. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above at the time monitoring reports are submitted. The reports shall contain the information listed in Condition I.E.13 of this Permit.

I.E.15. Obligation for Corrective Action

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

I.E.16. Other Information

Whenever the Permittee becomes aware that it failed to submit relevant facts in the permit application or in any report to the Department or Permit Board, the Permittee shall promptly submit such facts or information.

I.F. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Department or the Permit Board, a designee, or authorized representative, shall be signed and certified in accordance with MHWMR Rule 1.16 Part 270.11 and Part 270.30(k).

I.G. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DEPARTMENT OR THE PERMIT BOARD

All reports, notifications, or other submissions that are required by this permit are to be given or sent by certified mail, delivery service, or by email to the Hazardous Waste Branch Manager at the following addresses:

Physical and P.O. Addresses:
Mississippi Department of Environmental Quality
Hazardous Waste Branch
515 E. Amite Street
Jackson, Mississippi 39201

or

P.O. Box 2261
Jackson, Mississippi 39225

Email Address:
HazardousWasteBranch@mdeq.ms.gov

I.H. CONFIDENTIAL INFORMATION

Unless otherwise requested, all information provided to the Commission, Department, or the Permit Board is subject to public review. Where the Permittee believes information is confidential, the Permittee must provide a written confidentiality claim when the information is supplied in accordance with Title 11 Miss. Admin. Code Pt. 1 Ch. 2 Mississippi Commission on Environmental Quality Regulations Regarding the Review and Reproduction of Public Records Rule 2.7. Any confidentiality claim must allow disclosure of the confidential information to authorized department employees and/or the United States Environmental Protection Agency (EPA).

Such confidentiality claim must be determined by the Commission to be valid. If the confidentiality claim is denied, the information sought to be covered by the Permittee thereby shall not be released or disclosed, except to the Environmental Protection Agency, until the claimant has been notified in writing and afforded an opportunity for a hearing and appeal therefrom, as with other orders of the commission. Disclosure of confidential information by the EPA is governed by federal law and EPA regulations.

I.I. PERMIT REVIEW PERIOD

This permit is subject to review by the Permit Board five (5) years after the date of issuance and shall be modified as necessary as required under MHWMR Part 270.50(d).

I.J. DOCUMENTS TO BE MAINTAINED

Unless otherwise approved by the Department, the Permittee shall maintain at the facility the following documents and all amendments, revisions and modifications thereto:

I.J.1. Inspection schedules, as required by MHWMR Rule 1.7 Part 264.15(b) and this permit;

I.J.2. Operating record, as required by MHWMR Rule 1.7 Part 264.73 and this permit;

I.J.3. Post-Closure Plan, as required by MHWMR Rule 1.7 Part 264.118(a) and this permit;

I.J.4. Financial assurance documentation, as required by MHWMR Rule 1.7 Part 264, Subpart H and this permit; and

I.J.5. All other documents required by Condition I.E.9 and this permit.

MODULE II – GENERAL FACILITY CONDITIONS

II.A. FACILITY DESCRIPTION

This permit is issued to Cavenham Forest Industries, Inc. for their Gulfport, Mississippi Facility [MSD 057 226 961] as described in the permit application submitted on April 4, 2017, and hereinafter referred to as "the application." The permit authorizes the Permittee to conduct post closure and corrective action activities. A general description of the facility and its activities is located in Attachment B of this permit.

II.B. DESIGN AND OPERATION OF FACILITY

The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned, sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment, as required by MHWMR Rule 1.7 Part 264.31.

II.C. ACTIVITIES THAT REQUIRE NOTICE

II.C.1. Hazardous Waste Imports

The Permittee shall not receive hazardous waste from a foreign source.

II.C.2. Hazardous Waste from Off-Site Sources

The Permittee shall not receive hazardous waste from an off-site source.

II.C.3. Transfer of Permit

Before transferring ownership or operation of the facility, the owner or operator must notify the new owner or operator in writing of the requirements of MHWMR Rule 1.7 Part 264 and Rule 1.16 Part 270.

II.D. SECURITY

The Permittee shall comply with the security provisions of MHWMR Rule 1.7 Part 264.14(b)(2) and (c) as described in Attachment F of this permit.

II.E. GENERAL INSPECTION REQUIREMENTS

The Permittee shall comply with the inspection requirements of MHWMR Rule 1.7 Part 264.15 and follow the inspection schedule contained in Attachment F. The Permittee shall remedy any deterioration or malfunction of equipment or structures discovered by an inspection, as required by MHWMR Rule 1.7 Part 264.15(c). Records of inspections shall be kept as required by MHWMR Rule 1.7 Part 264.15(d).

II.F. GENERAL WASTE ANALYSIS

There are no ongoing requirements for waste analysis by the Permittee for this closed facility. If at any time wastes are generated in conducting post closure care and corrective actions at the site, such wastes shall be analyzed and properly characterized for disposal. At a minimum, the analysis must contain all the information, which must be known to treat, store, or dispose of the waste in accordance with Rule 1.16 Part 264.13(a) and Rule 1.16 Part 268.

II.G. SPECIAL CONDITIONS

II.G.1. Where a discrepancy exists between the wording of an item in the application and this permit, the permit requirements take precedence over the application.

II.G.2. Where a discrepancy exists between the wording of an item in an attachment and wording in the permit module, the module requirements take precedence over the attachment.

II.H LOCATION STANDARD

The Permittee shall provide protection from washouts of hazardous waste from the units specified in Condition III.A by providing maintenance to the final cover, including the riprap, on an "as-needed" basis to ensure that the extent and depth of the final cover system do not fall below the design criteria specified in Attachment B.

II.I. GENERAL POST-CLOSURE REQUIREMENTS

II.I.1. Post-Closure Care Period

The Permittee shall conduct post-closure care for the closed surface impoundment after completion of closure of the unit and continue for a minimum of 30 years after that date. Post-closure care of the unit shall be in accordance with MHWMR Rule 1.7 Part 264.117 and the Post Closure Plan specified in Attachment C.

II.I.2. Amendment to Post-Closure Plan

The Permittee shall request a permit modification and amend the post closure plan, whenever necessary, in accordance with MHWMR Rule 1.7 Part 264.118(d). The Permittee shall request and obtain a permit modification prior the post-closure removal of hazardous wastes, hazardous waste residues, liners or containment soils in accordance with MHWMR Rule 1.7 Part 264.119(c).

II.I.3. Certification of Completion of Post-Closure Care

The Permittee shall certify that post-closure care was performed in accordance with the Post-Closure Plan specified in Attachment C as required by MHWMR Rule 1.7 Part 264.120.

II.J. FINANCIAL REQUIREMENTS

II.J.1. Cost Estimate for Closure

The Permittee must have a detailed written estimate of the cost of post-closure care and correction action activities for the facility, as per MHWMR Rule 1.7 Part 264.144(a).

II.J.1.a. The Permittee's most recent post-closure cost estimate, including Corrective Action, is contained in the application and in Appendix C.

II.J.1.b. The Permittee must revise the post-closure cost estimate whenever there is a change in the facility's post-closure plan as required by MHWMR Rule 1.7 Part 264.144(c), or if there is a change in the Corrective Action Plan.

II.J.1.c. The Permittee must keep at the facility, or at a mutually agreed upon location, the latest post-closure/corrective action cost estimate as required by MHWMR Rule 1.7 Part 264.144(d).

II.J.2. Financial Assurance for Facility Closure

The Permittee shall demonstrate continuous compliance with MHWMR Rule 1.7 Part 264.145 and MHWMR Rule 1.7 Part 264.101(b) by providing documentation of financial assurance, as required by MHWMR Rule 1.7 Part 264.151, in at least the amount of the cost estimate required by Condition II.J of this permit. Changes in financial assurance mechanisms must be approved by the Executive Director pursuant to MHWMR Rule 1.7 Part 264.145.

II.J.3. Incapacity of Owners or Operators, Guarantors, or Financial Institutions

The Permittee shall comply with MHWMR Rule 1.7 Part 264.148 whenever necessary.

II.K. OPERATING RECORD

Pursuant to MHWMR Rule 1.7 Part 264.73(a), the Permittee must keep a written operating record of post-closure care activities and those activities specified in MHWMR Rule 1.7 Part 264.73(b)(6) and Part 264.280(c). These records will be maintained at the facility or in the custody of the facility contact person, and shall be made available upon request. At a minimum, the following information must be recorded and maintained in the operating record until final closure (as defined in MHWMR Rule 1.1 Part 260.10):

- Records of inspections
- Monitoring, testing and analytical data
- Groundwater monitoring data

II.L. ANNUAL REPORT

The permittee shall report, by March 1 of each year, the types and amounts of hazardous waste treated, stored, recycled, and/or disposed during the preceding calendar year, per the requirements of MHWMR Rule 1.8.

MODULE III – POST-CLOSURE CARE

III.A. APPLICABILITY

The Permittee shall provide post-closure care for the closed surface impoundment unit described in Attachment B in accordance with MHWMR Rule 1.7 Part 264.110.

III.B. POST-CLOSURE PROCEDURES AND USE OF PROPERTY

III.B.1. Post-Closure Care Period

The Permittee shall conduct post-closure care for the closed surface impoundment to begin after completion of closure of the system and continue for 30 years after that date. The Permit Board may approve the 30-year post-closure care period be shortened upon application and demonstration that the facility is secure, or the Permit Board may extend the post-closure period if the Board finds this is necessary to protect human health and the environment. The Permittee must comply with all monitoring, maintenance, and reporting requirements of MHWMR Rule 1.7 Part 264 Subparts F and K during the post-closure care period.

III.B.2. Post-Closure Care

The Permittee must comply with all post-closure requirements contained in MHWMR Rule 1.7 Part 264.117 through 264.120, including maintenance and monitoring throughout the post- closure care period specified in this section and in Attachment C and Attachment F. At minimum, the Permittee must:

III.B.2.a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

III.B.2.b. Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of MHWMR Rule 1.7 Subpart F; and

III.B.2.c. Maintain drainage control structures, benchmarks, security devices, and monitoring wells;

III.B.2.d. Prevent run-on and run-off from eroding or otherwise damaging the final cover.

III.B.2.e. Maintain all gas vents so that they are free of cracks or breaks, and the outlets shall be free of obstructions; and

III.B.2.f. Maintain all surveyed benchmarks.

III.B.3. Security

The Permittee shall comply with all security requirements, as specified in Permit Attachment F.

III.B.4. Integrity of the Final Cover

The Permittee shall not allow any use of the units designated in Condition III.A. that will disturb the integrity of the final cover, or the function of the facility's monitoring system during the post-closure care period.

III.B.5. Post-Closure Plan

The Permittee shall implement the Post-Closure Plan, Permit Attachment C. All post-closure care activities must be conducted in accordance with the provisions of the Post-Closure Plan.

III.B.6. Retention of Post-Closure Plan

After final closure has been certified, the permittee, or the person specified in MHWMR Rule 1.7 Part 264.118(b)(3), must keep the approved post-closure plan during the remainder of the post-closure period.

III.C. INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the Inspection Schedule in Permit Attachment F.

III.D. NOTICES AND CERTIFICATION

III.D.1. Post-Closure Notices

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located, wishes to remove hazardous wastes and hazardous waste residues; or contaminated soils, the permittee shall request a modification to this post-closure permit in accordance with the applicable requirements in MHWMR Rule 1.23 Part 124 and MHWMR Rule 1.16 Part 270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of MHWMR Rule 1.7 Part 264.117(c).

III.D.2. Post-Closure Permit Modifications

The Permittee must request a permit modification to authorize a change in the approved Post-Closure Plan. This request must be made in accordance with applicable requirements of MHWMR Rule 1.23 Part 124 and MHWMR Rule 1.16 Part 270, and must include a copy of the proposed amended Post-Closure Plan for approval by the Permit Board. The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the

approved Post-Closure Plan, there is a change in the expected year of final closure, or other events occur during the active life of the facility that affect the approved Post-Closure Plan. The Permittee must submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation or no later than 60 days after an unexpected event has occurred which has affected the Post-Closure Plan

III.D.3. Certification of Completion of Post-Closure Care

No later than 60 days after completion of the established post-closure care period for each disposal unit, the Permittee shall submit to the Executive Director, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-Closure Plan. The certification must be signed by the Permittee and an independent, professional engineer registered in the State of Mississippi. Documentation supporting the independent, professional engineer's certification must be furnished to the Department upon request until the Executive Director releases the Permittee from the financial assurance requirements for post-closure care under MHWMR Rule 1.7 Part 264.145(i).

III.E. FINANCIAL ASSURANCE

The Permittee shall maintain financial assurance during the post-closure period and comply with all applicable requirements of MHWMR Rule 1.7 Part 264, Subpart H.

MODULE IV – GROUNDWATER PROTECTION

IV.A. APPLICABILITY

The requirements of this part apply to the closed surface impoundment unit and affected adjacent property as depicted in Attachment B, Figure 3.

IV.B. MONITORING PROGRAM

The Permittee shall conduct corrective action and corrective action groundwater monitoring as outlined herein as required by MHWMR Rule 1.7 Part 264.91(a)(3). When the concentrations of all hazardous constituents under Condition IV.D have not exceeded the groundwater protection standards under Condition IV.C along the point of compliance and in all compliance monitoring wells for a period of three consecutive years, the Permittee may petition the Permit Board for a permit modification to conduct a detection monitoring program or post-closure groundwater monitoring program.

IV.C. GROUNDWATER PROTECTION STANDARDS

The groundwater protection standards under MHWMR Rule 1.7 Part 264.92 shall be equal to concentration limits in Condition IV.D. of this permit during the compliance monitoring program. The Permittee may petition the Permit Board for a permit modification during the compliance period to establish groundwater protection standards based on alternate concentration limits under MHWMR Rule 1.7 Part 264.94(b).

IV.D. HAZARDOUS CONSTITUENTS/CONCENTRATION LIMITS

The following constituents shall be included in groundwater quality analyses conducted during compliance monitoring as specified under MHWMR Rule 1.7 Part 264.93.

The groundwater protection standards in Condition IV.C of this permit shall be based on the following concentration limits, as required under MHWMR Rule 1.7 Part 264.94. The analytical methods and method detection limits shall be designated in all reports of analyses.

Hazardous Constituents	Concentration Limits (µg/l)
*Acenaphthylene	10
Acenaphthene	10
Anthracene	10
*Benzene	5
Benzo[a]anthracene	10
*Benzo[a]pyrene	10

Hazardous Constituents	Concentration Limits (µg/l)
Benzo[b]fluoroanthrene	10
Benzo[k]fluoroanthrene	10
Benzo[g,h,i]perylene	10
Chrysene	10
Dibenzo[a,h]anthracene	10
Dibenzofuran	10
*2,4-Dimethylphenol	10
*Fluoranthene	10
Fluorene	10
Ideno[1,2,3-cd]pyrene	10
Isophorone	10
2-Methylnaphthalene	10
*Naphthalene	10
*Pentachlorophenol	50
Phenanthrene	10
Phenol	10
Pyrene	10
Tetrachlorophenols	10
Toluene	5
Xylene	5

*See Table IV-1

IV.E. POINT OF COMPLIANCE

As specified in MHWMR Rule 1.7 Part 264.95, the point of compliance for the waste management unit is represented by a vertical surface located at the hydraulically down gradient limit of the waste management area, and which extends down vertically into the uppermost aquifer beneath the closed surface impoundment unit.

IV.F. COMPLIANCE PERIOD

The compliance period, during which the groundwater protection standards apply, shall be defined to have begun when the permittee initiated a compliance monitoring program which met the requirements of MHWMR Rule 1.7 Part 264.99. This program shall continue until the groundwater protection standards for all constituents specified in Permit Condition IV.D have not been exceeded in all of the compliance monitoring wells for a period of three consecutive years.

IV.G. GROUNDWATER MONITORING PROGRAM

The Permittee shall conduct groundwater corrective action monitoring as described in Attachment D, the Groundwater Sampling and Analysis Plan, and as described in this permit, in accordance with the requirements of MHWMR Rule 1.7 Part 264.91 (a)(3) and

264.100. The monitoring program will remain in effect throughout the term of this permit unless the permit is modified under Condition IV.P.4.

IV.H. GROUNDWATER MONITORING SYSTEM

The Permittee shall maintain a groundwater monitoring system to comply with the requirements of MHWMR Rule 1.7 Parts 264.95, 264.97 and 264.100, in accordance with the plans and specifications in the Groundwater Monitoring Plan, Attachment D. These wells shall be maintained at the locations depicted in Attachment B, Figure 5.

IV.H.1. Well Replacement

Should the Permittee determine during an inspection or sampling event that any well identified in Table IV-1 has been damaged such that it no longer meets the requirements of MHWMR Rule 1.7 Part 264.97(a)(1), (2) and (c), the Permittee shall notify Department in writing within seven days of making such a determination and replace or repair the damaged well within 30 days. Replacement wells should be constructed to the same specifications as the well being replaced in accordance with the procedures described in the application.

IV.H.2. Compliance Monitoring Wells

For the purpose of this permit, wells RC-1, RC-2, RC-3, and/or any applicable wells required under Condition IV.H.6 shall be designated as the compliance monitoring wells.

IV.H.3. Corrective Action “Effectiveness” Monitoring Wells

Monitoring wells DG-2, DG-6A, RW-3, RW-7, RW-10, and/or other wells required under Condition IV.H.6 shall be used to monitor the effectiveness of the corrective action program and shall be designated as Effectiveness Monitoring Wells.

IV.H.4. Background Monitoring Wells

For the purpose of this permit, monitoring well MW-2 and/or other wells required under Condition IV.H.6 shall be designated as the background monitoring well.

IV.H.5. Boundary Control Monitoring Wells

For the purposes of this permit, wells PW-3, PW-7S, PW-7W, PW-8, and/or any applicable wells required under Condition IV.H.6 shall be designated as Boundary Control Monitoring Wells.

IV.H.6. Additional Monitoring Wells

Due to the possibility of change in the groundwater conditions and/or plume location, it may be necessary to require the construction of additional monitoring wells, change the designation of existing monitoring wells from the

corrective action (i.e. compliance, "effectiveness" or background) or delete existing monitoring wells from the corrective action/compliance monitoring groundwater-monitoring system. The requirement of any such addition, change in designation, or deletion of monitoring wells from the corrective action/compliance groundwater monitoring system will be made in writing to the Permittee by the Department.

IV.I. GROUNDWATER MONITORING REQUIREMENTS

The Permittee shall monitor the effectiveness of the corrective action on groundwater quality and the groundwater flow across the entire extent of the contamination plume emanating from the closed impoundment area, as required under MHWMR Rule 1.7 Part 264.100.

IV.I.1. The Permittee shall determine the groundwater quality at each monitoring well identified in Table IV-1 for the parameters and at the frequency specified therein.

TABLE IV-1

WELLS	PARAMETERS	SAMPLING FREQUENCY
RC-1 RC-2 RC-3	All MHWMR Rule 1.7 Part 264, Appendix IX parameters	Annually to begin within 90 days after meeting the Groundwater Protection Standard
	Groundwater protection constituents identified with asterisks in Condition IV.D.	Semi-annually
	Oil and Grease	Semi-annually
DG-2 DG-6A RW-3 RW-7 RW-10	Groundwater protection constituents identified with asterisks in Condition IV.D.	Semi-Annually
	Oil and Grease	Semi-Annually
	All MHWMR Rule 1.7 Part 264, Appendix IX parameters	Annually to begin within 90 days after meeting the Groundwater Protection Standard
PW-3 PW-7S PW-7W PW-8	Groundwater protection constituents identified with asterisks in Condition IV.D.	Semi-Annually
	Oil and Grease	

IV.I.2. Dioxin Investigation

The Permittee shall submit a plan to investigate the groundwater for the presence of dioxin and/or dioxin like compounds in the area enclosed by the RCRA cutoff wall as shown in Attachment B, Figure 2. This plan is subject to approval by the Department and shall be submitted to the Department's Hazardous Waste Branch within 180 days from the date of issuance of this permit. The proposed plan shall include an implementation schedule and reporting schedule. The permittee shall initiate the investigation in accordance with the approved plan within ninety days of receipt of written approval of the plan from the Department.

IV.I.3. Additional Parameters

If additional MHWMR Rule 1.7 Part 264 Appendix IX parameters are found in the compliance and/or effectiveness wells, the Permittee shall:

IV.I.3.a. Resample the effected wells within 30 days.

IV.I.3.b. Notify the Executive Director in writing within seven days if the presence of Appendix IX constituents is confirmed.

IV.I.3.c. Add the additional MHWMR Rule 1.7 Part 264 Appendix IX constituents that are detected to the list of groundwater protection constituents, specified under Condition IV.D.

IV.J. SAMPLING AND ANALYSIS PROCEDURES

IV.J.1. Prior to collecting groundwater samples from any monitoring well, the Permittee shall measure the water level in the well, calculate the volume of water in the well, and purge the well using the procedures specified in the Groundwater Sampling and Analysis Plan, Attachment D.

IV.J.2. The Permittee shall collect groundwater samples in accordance with the procedures set forth in Attachment D.

IV.J.3. The Permittee shall preserve and ship groundwater samples in accordance with the procedures specified in Attachment D.

IV.J.4. The Permittee shall track and control groundwater samples using the sample identification and chain-of-custody procedures specified in Attachment D.

IV.J.5. The Permittee shall ensure samples are analyzed in accordance with the procedures (methods) specified in accordance with the analytical methods, including appropriate QA/QC measures, as specified in the Groundwater Monitoring Plan, Attachment D.

IV.K. ELEVATION OF THE GROUNDWATER SURFACE

The Permittee shall determine and record the groundwater surface elevation at each monitoring well, using the procedures described in Attachment D, each time groundwater is sampled in accordance with Permit Condition IV.G.

IV.L. STATISTICAL PROCEDURE

When evaluating monitoring results for hazardous constituents listed in IV.D, the Permittee shall compare the measured constituents at each well to the concentration limit specified in Condition IV.D.

IV.M. MONITORING PROGRAM AND DATA EVALUATION

IV.M.1. The Permittee shall collect, preserve, and analyze groundwater samples pursuant to Condition IV.J.

IV.M.2. The Permittee shall determine the groundwater concentration of hazardous constituents listed in Condition IV.D at the compliance and monitoring wells listed in Table IV-1 during the compliance period.

IV.M.3. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

IV.M.4. Pursuant to Condition IV.I.1, the Permittee shall annually sample monitoring wells RC-1, RC-2, RC-3, DG-2, DG-6A, RW-3, RW-7, and RW-10 for all constituents listed in Appendix IX of MHWMR Rule 1.7 Part 264 once the groundwater protection standard has been met to determine whether additional hazardous constituents are present in the uppermost aquifer.

IV.M.5. For each hazardous constituent identified in Condition IV.D, the Permittee shall compare the measured constituent concentration at each compliance well to the concentration limit specified in Condition IV.D for the compliance-monitoring period specified in Condition IV.F.

IV.M.6. The Permittee shall perform the evaluation required by Condition IV.M.5 within 60 days from the receipt and evaluation of the final QA/QC reviewed analytical results.

IV.M.7. Upon completion of the compliance-monitoring period, the Permittee may petition the Permit Board for a permit modification to conduct a detection-monitoring program as specified in Condition IV.B.

IV.N. REPORTING AND RECORDKEEPING

IV.N.1. The Permittee shall enter all monitoring, testing, and analytical data obtained pursuant to Module IV, in the operating record as required by MHWMR Rule 1.7 Part 264.73(b)(6).

IV.N.2. During the period of compliance monitoring and corrective action, the Permittee shall submit the analytical results required by Conditions IV.G., IV.I., and IV.M annually to the Department by January 31 of each year.

IV.N.3. If the Permittee determines, pursuant to Condition IV.G that the reported concentration at a boundary control monitoring well specified in Condition IV.H.5 exceeds the concentration limit for the constituent specified in Condition IV.D (indicating that the groundwater protection standard is being exceeded), the Permittee shall resample within (30) days to confirm the concentration of the constituent. If the second analysis confirms that the constituent exceeds the concentration limit, then the Permittee shall notify the Executive Director in writing seven (7) days from receipt and evaluation of the final QA/QC reviewed analytical results.

IV.N.4. The Permittee shall report concentrations of any additional Appendix IX constituents (i.e. not listed in Condition IV.D.) to the Department within seven (7) days from receipt and review of the final QA/QC reviewed analytical results from the re-sampling (i.e. confirmatory) event.

IV.O. ASSURANCE OF COMPLIANCE

The Permittee shall assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard are taken during the term of the permit.

IV.P. SPECIAL REQUIREMENTS IF THE GROUNDWATER PROTECTION STANDARD IS EXCEEDED

IV.P.1. The Permittee must notify the Department in writing within seven (7) days if the groundwater protection standard has been exceeded at any boundary monitoring well specified in IV.H.5 based upon two (i.e. initial and re-sampled) reported concentrations above the concentration limit specified in Condition IV.D. The notification must indicate which concentration limits have been exceeded.

IV.P.2. If the Department determines that the existing corrective action plan is insufficient to provide continued protection of human health and the environment, then the Permittee must submit to the Permit Board a permit modification to the corrective action program meeting MHWMR Rule 1.7 Part 264.100 requirements within 180 days.

IV.P.3. The Permittee may make a demonstration that the groundwater protection standard was exceeded due to sources other than a regulated unit or errors in sampling, analysis or evaluation.

IV.P.3.a. The Permittee must notify the Department in writing, within seven (7) days of receipt and evaluation of QA/QC reviewed analytical results, that a demonstration will be made.

IV.P.3.b. The permittee must submit a report to the Department, within 90 days, that demonstrates that a source other than a regulated unit caused the ground-water protection standard to be exceeded or that the apparent non-compliance was a result of an error in sampling, analysis or evaluation.

IV.P.3.c. The Permittee must continue the corrective action/compliance monitoring program in accordance with MHWMR Rule 1.7 Part 264.99 and Part 264.100.

IV.P.4. If the Permittee or the Department determines that the corrective action/compliance monitoring program no longer satisfies the requirements of MHWMR Rule 1.7 Part 264.99 and/or Part 264.100, the Permittee must submit a permit modification application within 90 days of the determination detailing appropriate changes to the compliance monitoring program.

MODULE V – CORRECTIVE ACTION FOR REGULATED UNITS

V.A. APPLICABILITY

V.A.1. The requirements of this module apply to the closed Hazardous Waste Surface Impoundment system and as described in Attachment B and identified as "Closed RCRA Units" in Figure 2.

V.A.2. Releases from the Buried Vacuum Pond and the Storm Drain will be remediated per the conditions of this module.

V.B. DESCRIPTION OF PLAN

The Permittee shall continue to implement the Corrective Action Measures described in the Revised Corrective Action Plan, Attachment E. Groundwater recovery wells will continue to be used to pump contaminated groundwater to surface facilities. The recovered groundwater shall be treated and discharged in accordance with the NPDES Discharge Permit, or reinjected into the subsurface to enhance the remediation process. The remediation process will be further enhanced by the use of air sparging well points, injection of treated groundwater into the subsurface by injection wells and groundwater infiltration trenches, and by providing nutrients as needed for biological activity. Free product recovered from the treatment system shall be managed in accordance with the provisions of MHWMR Rule 1.3 Part 262. Groundwater extraction rates shall be approved by the Department and shall be sufficient to capture the entire plume of contamination.

V.C. CORRECTIVE ACTION PERIOD

V.C.1. The Permittee shall conduct corrective action measures specified in this permit and the Corrective Action Program Plan until the groundwater protection standards for all constituents have not been exceeded at the point of compliance and in all compliance and "effectiveness" monitoring wells. The Permittee may submit a written request to terminate corrective action measures at individual and specific recovery locations based on quarterly groundwater monitoring results. Any partial termination of corrective action measure shall be approved by the Permit Board.

V.C.2. Upon complete termination of corrective action measures, the Permittee shall perform a complete MHWMR Rule 1.7 Part 264 Appendix IX analysis on groundwater samples from all compliance monitoring wells to confirm that no additional Appendix IX hazardous constituents have entered the groundwater.

V.C.3. If all or part of the corrective action measures are terminated in accordance with condition V.C.1., the measures shall be reinitiated, if at any time during the post-closure care period the groundwater protection standard has been exceeded at the point of compliance or in any "effectiveness" monitoring well.

V.D. LIST OF HAZARDOUS CONSTITUENTS

The Permittee shall conduct corrective measures to remove any constituents specified in condition IV.D in accordance with MHWMR Rule 1.7 Part 264.100(a)(1).

V.E. CONCENTRATION LIMITS

The concentration limits upon which the groundwater protection standards shall be met are as specified in Condition IV.D as required under MHWMR Rule 1.7 Part 264.94 and Part 264.100(a)(2).

V.F. AREAL EXTENT OF CORRECTIVE ACTION

The Permittee shall pump, treat and monitor contaminated groundwater from the point of compliance to the property boundary and beyond the facility boundary, where necessary to protect human health and the environment, as required under MHWMR Rule 1.7 Part 264.100(e).

V.G. REPORTS

The Permittee shall report the effectiveness of corrective action and groundwater monitoring results annually. The report shall be submitted by January 31 of each year.

V.H. MODIFICATIONS

V.H.1. If the Permittee determines that corrective action measures are no longer effective, an application for a permit modification must be submitted to the Permit Board within ninety (90) days of such a determination, as required under MHWMR Rule 1.7 Part 264.100(h) to make any appropriate changes to the corrective action program.

V.H.2. If the groundwater protection standard for all monitored constituents has not been exceeded for a period of three (3) consecutive years in all of the compliance monitoring wells, the Permittee may petition the Permit Board to modify the groundwater monitoring plan as appropriate.

MODULE VI – LAND DISPOSAL RESTRICTIONS

VI.A. GENERAL RESTRICTIONS

MHWMR Rule 1.15 Part 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of MHWMR Rule 1.15 Part 268. Where the Permittee has applied for an extension, waiver or variance under MHWMR Rule 1.15 Part 268, the Permittee shall comply with all restrictions on land disposal under this Module once the effective date for the waste has been reached pending final approval of such application.

VI.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

VI.B.1. A restricted waste identified in MHWMR Rule 1.15 Part 268, Subpart C shall not be placed in a land disposal unit without further treatment unless the requirements of MHWMR Rule 1.15 Part 268, Subparts C and/or D are met.

VI.B.2. The storage of hazardous wastes restricted from land disposal under MHWMR Rule 1.15 Part 268 is prohibited unless the requirements of MHWMR Rule 1.15 Part 268, Subpart E are met.

MODULE VII – ORGANIC AIR EMISSIONS REQUIREMENTS OF PROCESS VENT AND EQUIPMENT LEAKS

VII.A. GENERAL INTRODUCTION

In the June 21, 1990, Federal Register, EPA published the final rule for Phase I Organic Air Emission Standards (40 CFR Parts 264 and 265, Subparts AA and BB) for hazardous waste treatment, storage, and disposal facilities. Phase II Organic Air Emission Standards (40 CFR Parts 264 and 265, Subpart CC) was published in the Federal Register on December 6, 1994. The State of Mississippi adopted Subparts AA and BB in September 1990 and Subpart CC in December 2000. Subpart AA contains emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. Subpart BB contains emission standards that address leaks from specific equipment (i.e. pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has an organic concentration of at least ten (10) percent by weight. Subpart CC contains emissions standards for tanks, surface impoundments, or containers for which all hazardous waste entering a unit has an average volatile organic concentration at the point of waste origination of less than 500 parts per million (ppm) by weight.

VII.B. ORGANIC AIR EMISSION STANDARDS

Prior to constructing any equipment with process vents subject to the requirements of MHWMR Rule 1.7 Part 264, Subpart AA, or installing any additional equipment subject to the requirements of MHWMR Rule 1.7 Part 264, Subpart BB, or installing any tanks, surface impoundments, and containers subject to the requirements of MHWMR Rule 1.7 Part 264, Subpart CC, the Permittee shall supply the specific Part B information required pursuant to MHWMR Rule 1.16 Part 270.24, Part 270.25, and Part 270.27, as applicable.

MODULE VIII – WASTE MINIMIZATION

VIII.A. APPLICABILITY

In the event the Permittee generates hazardous waste in the future, in accordance with MHWMR Rule 1.7 Part 264.73(b)(9); Section 3005(h) of RCRA, 42 U.S.C. 6925(h); and Section 49-31-1 *et seq.*, Mississippi Code of 1972; the Permittee must certify to the Department, at least annually, that:

VIII.A.1. The Permittee has a waste minimization program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

VIII.A.2. The proposed method of treatment, storage, or disposal is the most practical method available to the Permittee that minimizes the present and future threat to human health and the environment.

VIII.B. WASTE MINIMIZATION CERTIFICATION OBJECTIVES

The Permittee shall ensure that any future waste minimization program under Condition VIII.A. will include the following elements:

VIII.B.1. Top Management Support

a. A dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.

b. Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

c. Description of how the waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations and maintenance.

VIII.B.2. Characterization of Waste Generation

Identification of the types, amounts and the hazardous constituents of waste streams with the sources and frequencies of generation.

VIII.B.3. Periodic Waste Minimization Assessments

a. Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.

b. Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.

c. Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the Permittee.

VIII.B.4. Cost Allocation System

a. Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, compliance and oversight to the extent feasible.

b. Description of how departments or areas of the facility are held accountable for the wastes they generate.

c. Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

VIII.B.5. Technology Transfer

Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

VIII.B.6. Program Evaluation

The Permittee shall ensure the waste minimization plan includes ongoing program evaluation that includes the following components:

a. Identification of the types and amounts of hazardous waste and other wastes reduced or recycled.

b. Analysis and quantification of progress made relative to each performance goal established and each reduction technique implemented.

c. Changes or amendments made to the waste minimization plan and explanation.

d. Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

e. Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

VIII.C. RECORDKEEPING AND REPORTING

VIII.C.1. The Permittee shall submit a certification report to the Department annually of the types and quantities of waste generated, and the types and quantities of waste reduced/minimized. This certified report shall include a narrative study explaining the waste generated and the relevant minimization data, a description of goals and progress made in reducing/minimizing the generation of wastes, and a description of any impediment to the reduction and minimization of waste.

VIII.C.2. The Permittee shall maintain copies of this certification in the facility operating record as required by MHWMR 264.73.

ATTACHMENT A

RCRA HAZARDOUS WASTE PERMIT APPLICATION PART A

OMB# 2050-0024; Expires 01/31/2017

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (MARK ALL BOX(ES) THAT APPLY)

Reason for Submittal:

- ☐ To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location)
- ☐ To provide a Subsequent Notification (to update site identification information for this location)
- ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application
- ☒ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____)
- ☐ As a component of the Hazardous Waste Report (If marked, see sub-bullet below)
  - ☐ Site was a TSD facility and/or generator of >1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)

2. Site EPA ID Number

EPA ID Number: M S D 0 5 7 2 2 6 9 6 1

3. Site Name

Name: CAVENHAM FOREST INDUSTRIES LLC

4. Site Location Information

Street Address: 9502 CREOSOTE RD

City, Town, or Village: GULFPORT | County: MS

State: MISSISSIPPI | Country: UNITED STATES | Zip Code: 39503

5. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

6. NAICS Code(s) for the Site (at least 5-digit codes)

A. N A | C.

B. | D.

7. Site Mailing Address

Street or P.O. Box: PO BOX 2219

City, Town, or Village: GULFPORT

State: MISSISSIPPI | Country: UNITED STATES | Zip Code: 39505

8. Site Contact Person

First Name: Ethan | MI: E | Last: Allen

Title: VICE PRESIDENT (EMS)

Street or P.O. Box: 7350 HWY 98

City, Town or Village: HATTIESBURG

State: MISSISSIPPI | Country: UNITED STATES | Zip Code: 39504

Email: eallen@env-mgt.com

Phone: 601-544-3674 | Ext.: | Fax: 601-544-0504

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner: CAVENHAM FOREST INDUSTRIES, LLC | Date Became Owner: May 1987

Owner Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

Street or P.O. Box: 600 River Avenue, Suite 200

City, Town, or Village: PITTSBURGH | Phone: 412-208-8800

State: PA | Country: UNITED STATES | Zip Code: 15212

B. Name of Site's Operator: CAVANHAM FOREST INDUSTRIES, LLC | Date Became Operator: May 1987

Operator Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

EPA ID Number | M | S | D | 0 | 5 | 7 | 2 | 2 | 6 | 9 | 6 | 1 |

OMB#: 2050-0024; Expires 01/31/2017

10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-10.

Y ☑ N ☐ **1. Generator of Hazardous Waste**
If "Yes," mark only one of the following – a, b, or c.

- ☑ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs/mo.) or more of hazardous waste; **or** Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs/mo) of acute hazardous waste; **or** Generates, in any calendar month, **or** accumulates at any time, more than 100 kg/mo (220 lbs/mo) of acute hazardous spill cleanup material.
- ☐ b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs/mo) of non-acute hazardous waste.
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs/mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities in 2-10.

Y ☐ N ☑ **2. Short-Term Generator** (generate from a short-term or one-time event and not from on-going processes). If "Yes," provide an explanation in the Comments section.

Y ☐ N ☑ **3. United States Importer of Hazardous Waste**

Y ☐ N ☑ **4. Mixed Waste (hazardous and radioactive) Generator**

Y ☐ N ☑ **5. Transporter of Hazardous Waste**
If "Yes," mark all that apply.

- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☐ N ☑ **6. Treater, Storer, or Disposer of Hazardous Waste** Note: A hazardous waste Part B permit is required for these activities.

Y ☐ N ☑ **7. Recycler of Hazardous Waste**

Y ☐ N ☑ **8. Exempt Boiler and/or Industrial Furnace**
If "Yes," mark all that apply.

- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☑ **9. Underground Injection Control**

Y ☐ N ☑ **10. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

Y ☐ N ☑ **1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes," mark all that apply.**

- a. Batteries ☐
- b. Pesticides ☐
- c. Mercury containing equipment ☐
- d. Lamps ☐
- e. Other (specify) _____ ☐
- f. Other (specify) _____ ☐
- g. Other (specify) _____ ☐

Y ☐ N ☑ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y ☐ N ☑ **1. Used Oil Transporter**
If "Yes," mark all that apply.

- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☐ N ☑ **2. Used Oil Processor and/or Re-refiner**
If "Yes," mark all that apply.

- ☐ a. Processor
- ☐ b. Re-refiner

Y ☐ N ☑ **3. Off-Specification Used Oil Burner**

Y ☐ N ☑ **4. Used Oil Fuel Marketer**
If "Yes," mark all that apply.

- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

❖ You can ONLY Opt into Subpart K if:

- you are at least one of the following: a college or university; a teaching hospital that is owned by or has a formal affiliation agreement with a college or university; or a non-profit research institute that is owned by or has a formal affiliation agreement with a college or university; AND
- you have checked with your State to determine if 40 CFR Part 262 Subpart K is effective in your state

Y☐ N☑ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories **See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:**

☐ **a. College or University**

☐ **b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university**

☐ **c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university**

Y☐ N☑ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

K001						
F032						
F034						

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

12. Notification of Hazardous Secondary Material (HSM) Activity

Y ☐ N ☑ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes," you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

The facility is a closed wood treating plant which formerly managed K001 hazardous waste in a surface impoundment and drum storage area. All hazardous waste units are closed and site remediation is ongoing.

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
Gregory J Ronczka	Gregory J. Ronczka/Pres.	06/27/2019

ATTACHMENT B

FACILITY DESCRIPTION

General Facility Description

Figure 1 Facility Location Map

Figure 2 Site Plan Map

Figure 3 100 Year Flood Plain Map

Figure 4 Security Fence Detail Map

Figure 5 Monitoring Well Location Map

Figure 6 H3 and H5 Potentiometric Map

1.0 GENERAL DESCRIPTION OF THE FACILITY

270.14(b) General Information Requirements. The following information is required for all Hazardous Waste Management (HWM) facilities, except as §264.1 provides otherwise:

§270.14(b)(1) A general description of the facility.

1.1 Site History

Cavenham Forest Industries, LLC (CFI) owns and maintains a site in Gulfport, Mississippi, herein referred to as the Gulfport Facility, that formerly conducted preservative treatment of pole and piling with pentachlorophenol and creosote wood preservative under elevated temperature and pressure.

Captain J. T. Jones initially established the treating plant in 1906 at this location north of Gulfport to manufacture treated poles, piling, and timbers necessary to construct the piers and docks for the Gulfport port facility and cross-ties for the Gulf and Ship Island Railroad. After construction of the port and railroad was completed, Captain Jones sold his interest to local persons, who operated the plant under the name of Gulfport Creosoting Company.

Gulfport Creosoting Company specialized in the production of utility poles for telephone, REA Cooperatives, and power companies. Operations at the Gulfport site continued until the mid-1960's with little change. At that time a process to treat poles with pentachlorophenol dissolved in oil was added. Following the mid-1960's both creosote and pentachlorophenol were used as treatment chemicals.

On January 6, 1972, Crown Zellerbach Corporation acquired the Gulfport Creosoting Company. Crown Zellerbach Corporation continued the wood treating operation using creosote and pentachlorophenol. In the mid 1970's Crown Zellerbach Corporation modified the contact cooling water treatment system to include water treatment activities, including the construction of sand filtration beds to treat sludge generated in the process. In the early 1980's the plant employed approximately 90 employees.

In 1983, Crown Zellerbach Corporation submitted a Hazardous Waste Permit Application to operate two (2) concrete-lined sand filtration beds and a surface impoundment as part of the wood treating process. The waste managed at the facility was RCRA listed waste K001.

In 1985, Crown Zellerbach Corporation submitted closure plans for the hazardous waste units at the facility and proposed a closure scenario for all of the waste management units. The units to

be closed included the two (2) sand filtration beds, the surface impoundment, and the proposed container storage area. These units were closed as interim status units, having never obtained a hazardous waste operating permit. The closure plan was later revised in February 1986 and implemented in December 1986.

On May 5, 1986, Crown Zellerbach Corporation was acquired by CFI. CFI continued to produce predominantly utility poles using the preservatives pentachlorophenol and creosote until the facility closed in November, 1987. Following closure of the hazardous waste units, the wood treatment plant was demolished and operations were changed to focus on investigating and correcting environmental issues instead of treated wood production.

Following closure of the hazardous waste units, CFI submitted a Post Closure Permit Application in February 1987. This application was later revised in June 1987 and Post Closure Permit No. HW-88-961-01 was issued in April 1988 by the Mississippi Bureau of Pollution Control (MBPC). The permit required development of a corrective action program (CAP) for remediation of groundwater contamination that resulted from past wood treatment activities. This Permit expired in April 1998. Prior to expiration, in July 1996, a new Hazardous Waste Post Closure Permit, No. 057-226-091 was issued to CFI for the Gulfport facility. A renewal application was developed in 2006 and provided to the Mississippi Department of Environmental Quality (MDEQ) and the U.S. Environmental Protection Agency (USEPA). On October 5, 2007, a new Hazardous Waste Post Closure Permit, No. 057-226-961 was issued to CFI for the Gulfport facility with an expiration date of September 30, 2017.

Presently, all hazardous waste management units are closed and the wood treating manufacturing facility has been demolished. The facility is comprised of a lab/office building, the closed RCRA unit, and associated groundwater remediation system**.** The groundwater remediation system serves both the closed RCRA units and solid waste management units (SWMUs) identified in the Hazardous and Solid Waste Act (HSWA) Portion of RCRA Permit for this facility.

1.2 Plant Location

The CFI Gulfport facility is located in Sections 15, 22 and 23 of Township 7 South, Range 11 West, in Harrison County, Mississippi. The approximately 73.6-acre former wood treating plant site occupies a gently sloping point of land between the Harrison County Industrial Seaway (HCIS) to the north and Turkey Creek to the south. The site is bounded to the west by Creosote Road and to the south by Rippy Road and Turkey Creek as shown in Figure 1. A legal description of this property is also included in Part A.

1.3 Closed Hazardous Waste Units

The closed RCRA units are located in the central eastern portion of the site as shown on Figure 2. This area formerly had two sand filtration beds and a surface impoundment that were used prior to 1987 to treat waste water generated in the wood treating process. The sludges generated in this process are a listed RCRA hazardous waste (K001). The sand filtration beds and the surface impoundment are described in the following sections.

1.3.1 Sand Filtration Beds

The sand filtration beds were installed at the site in the mid-1970's to reduce the accumulation of sludge in the surface impoundment. They were constructed of concrete and measured 32 feet long by 19 feet wide and were 2 feet deep. The design capacity was 300 gallons of wet sludge per day. They were located along the west side of the RCRA surface impoundment and were used to dewater sludges generated in the wastewater treatment process.

The sand filtration beds were used as part of the wastewater treatment process. Wastewater from the wood preserving process was allowed to flocculate in wastewater flocculation tanks creating K001 hazardous waste. After five (5) or six (6) batches of wastewater had been treated in the flocculation tanks, the accumulate bottom sludge was applied to the sand filtration beds to dry the sludge prior to off-site disposal. The underflow from this sludge filtered through the sand and entered the former surface impoundment through weep-holes in the filter bed wall nearest the impoundment. The dry sludge was periodically removed by back-hoe and hand-shovels, placed in 21 cubic yard roll-on containers, and disposed of at an off-site hazardous waste facility.

The sand filtration beds were used from the mid 1970's until their closure in 1987. Certification of closure was submitted to MDEQ in January 1988 and approved in April 1988.

1.3.2 Surface Impoundment

The former RCRA surface impoundment (Figure 2) was approximately 240 feet long by 75 feet wide and had a design capacity of about 300,000 gallons. It was constructed at grade on the east end and slightly below grade on the west end and was formed using dikes constructed of clay soil. The top and outside slope of the dike was protected from erosion by a soil-cement.

The impoundment was used as a source of contact cooling water for the wood treating process and as a receptor of the effluent from the sand filtration beds following their installation in the 1970's. The waters that entered the surface impoundment contained residuals of the wood treatment chemicals used in the process. This resulted in the deposition of a wastewater sludge designated as K001 hazardous waste under RCRA. Being slightly denser than water, this sludge accumulated in the bottom of the impoundment.

It is unknown when the former surface impoundment went into operation; however, it was closed during 1987. Certification of closure was submitted to MDEQ in January 1988 and approved in April 1988. Closure included removal and treatment of water contained in the surface impoundment; solidification/stabilization of remaining sludges; demolition and solidification of the sand filtration beds; installation of a gas collection/venting system; installation of a 40-mil HDPE liner above the solidified waste; placement of a three foot thick compacted clay liner above the HDPE; installation of a topsoil drainage layer; and placement and seeding of an eighteen inch thick topsoil layer.

1.4 Topographic Map

270.14(b)(19) A topographic map showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). Contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. For example, contours with an interval of 1.5 meters (5 feet), if relief is greater than 6.1 meters (20 feet), or an interval of 0.6 meters (2 feet), if relief is less than 6.1 meters (20 feet). Owners and operators of HWM facilities located in mountainous area should use larger contour intervals to adequately show topographic profiles of facilities. The map shall clearly show the following:

- **i. Map scale and date**
- **ii. 100-year floodplain area.**
- **iii. Surface waters including intermittent streams.**
- **iv. Surrounding land uses (residential, commercial, agricultural, recreational).**
- **v. A wind rose (i.e. prevailing wind speed and direction).**
- **vi. Orientation of the map (north arrow).**
- **vii. Legal boundaries of the HWM facility site.**
- **viii. Access control (fences, gates).**
- **ix. Injection and withdrawal wells both on-site and off-site.**
- **x. Buildings; treatment, storage, or disposal operations; or other structure (recreational areas, run-off control systems, access and internal roads, storm, sanitary, and process sewerage systems, loading and unloading areas, fire control facilities, etc.).**
- **xi. Barriers for drainage or flood control.**
- **xii. Location of operational units within the HWM facility site, where hazardous waste is (or will be) treated, stored, or disposed (include equipment cleanup areas).**

The above information would not be legible if illustrated on only one map. Several maps have been made from actual surveys and existing maps. All maps have a scale, date, north arrow and information necessary to meet regulatory requirements. The following information can be found in the figures listed.

100-Year Floodplain Area	Figure 3
Surface Waters	Figures 1 and 2
Surrounding Land Use	Figure 1
Legal Boundaries of the HWM Facility Site	Figure 1
Access Control	Figure 4
Well Locations	Figure 5
Buildings and Structures	Figure 2
Barriers for Drainage Control (Culverts)	Figure 2
Location of Operational Units	Figure 2
USGS Topographic Map	Figure 1
Facility Contour Map	Figure 1

1.5 Absence of Active Faults

270.14(b)(11)(ii), 264.18(a) If the facility is proposed to be located in an area listed in Appendix VI of Part 264, the owner or operator shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The information provided must be of such quality to be acceptable to geologist experienced in identifying and evaluating seismic activity. The information submitted must show that either:

- **No faults which have had displacement in Holocene time are present, or no lineations which suggests the presence of a fault (which have displacement in Holocene time) within 3,000 feet of a facility are present, based on data from:**
- **Published geologic studies,**
- **Aerial reconnaissance of the area within a five-mile radius from the facility,**
- **An analysis of aerial photographs covering a 3,000 foot radius of the facility, and**
- **If needed to clarify the above data, a reconnaissance based on walking portions of the area within 3,000 feet of the facility.**

The facility is located in Harrison County in the State of Mississippi. Harrison County does not appear in Appendix VI of 40 CFR Part 264.

1.6 100-Year Floodplain Standard

270.14(b)(11)(iii), 264.18(b)

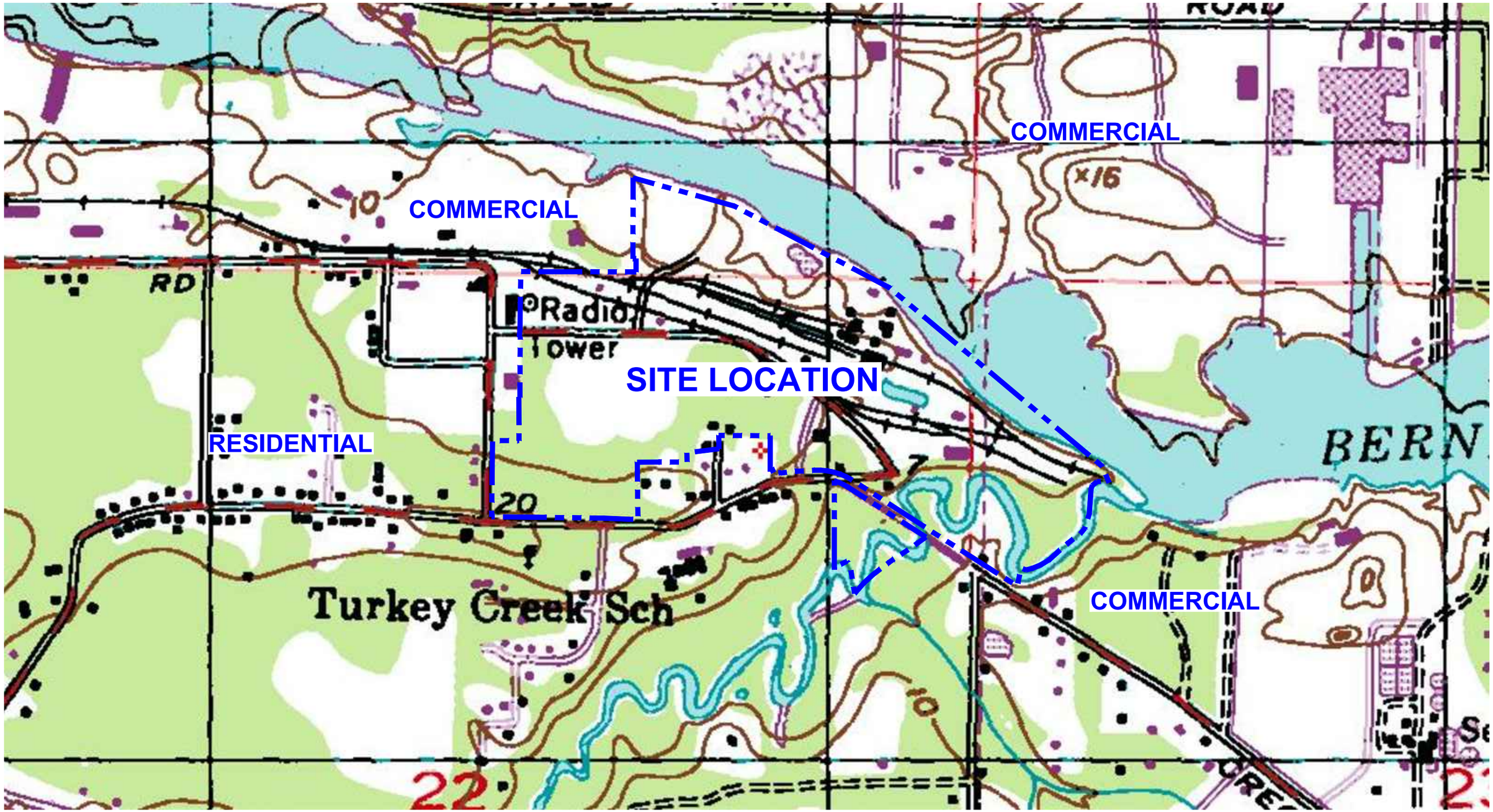
Owners and operators of all facilities shall provide an identification of whether the facility is located within a 100-year floodplain. This identification must indicate the source of data for such determination and include a copy of the relevant Federal Insurance Administration (FIA) flood map, if used, or the calculations and maps used where an FIA map is not available. Information shall also be provided identifying the 100-year flood level and any other special flooding factors (e.g. wave action) which must be considered in designing, constructing, operating, or maintaining the facility to withstand washout from a 100-year flood.

In March 1984, Crown Zellerbach, former owner of the site, conducted a study to determine the flood elevation of the site and determined from that study that the 100-year flood elevation was 11.0 feet relative to mean sea level (msl). Special flooding factors, such as wave action, were considered in the closure design of the closed surface impoundment. Protection from wave action is accomplished by extension of the rip-rap to 4 feet above the 100-year flood elevation, to elevation 15 feet msl. The 4:1 and 3:1 slopes of the embankment are sufficiently flat to prevent failure due to hydrostatic forces. In addition to the rip-rap layer, a perimeter drainage system and revegetation of the closed surface impoundment are designed to prevent washout.

The design of the treatment systems and SWMUs were designed so that any flooding would not impact the system. Any "open to atmosphere systems" will not be affected (i.e. flooded, where flood water would cause a toxic release) as the top level is several feet above the Advisory Base Flood Elevation, as required by both old FEMA flood maps as well as the Katrina Recovery Maps. Remaining vessels are closed and will not be impacted by flooding. Berms surround all treatment areas to prevent washout around any of the vessel bases. No specific operations or maintenance are needed during normal operating hours for flooding prevention. In the event that the site is in danger of flooding (i.e., hurricane in Gulf of Mexico), any material being treated in the CAMU will be transferred to a secure location to prevent possible releases.

Figure 3 is the most recent 100 year flood map for the Gulfport site. This drawing indicates that the 100 year flood elevation was 14 feet as of June 16, 2009.

During Hurricane Katrina, the Gulf Coast of Mississippi experienced a storm surge of unforeseen magnitude and, in many areas, the storm surge exceeded the predicted "100-Year Food Elevation." At the CFI facility, a storm surge of approximately 19 feet relative to the National Geodetic Vertical Datum(NGVD) was estimated by the Federal Emergency Management Agency. Although this flood event exceeded the predicted event by 8 feet, the rip-rap and other elements of the closure design prevented a release of waste from this closed unit.



N

CFI PROPERTY LINE

SCALE 1 INCH = 500 FEET

125 250 500

0 125 250 500 1000

U.S.G.S. TOPOGRAPHY CONTOUR INTERVAL 5'

REFERENCE: U.S.G.S. TOPOGRAPHIC MAP
7.5 MINUTE SERIES
1994 N.W.GULPORT, MS

FACILITY LOCATION

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE: 03/28/2017	APPROVED: BY: DATE:	DRAWN BY: PDM
SCALE: 1" = 500'		CAD NO. SITE PLAN 2016

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 1

AOC 1
AREA 2

AOC 1

WOOD WASTE
DISPOSAL AREA #3
SWMU 3-3

CONTAINER
STORAGE AREA
SWMU 5

BOILER BOTTOM ASH
WASTE PILE
SWMU 4

CULVERT

GATE

SLURRY WALL

GRADIENT
CONTROL
SYSTEM
PIPING

GATE

3rd PARTY
STRUCTURE

OLD POND
(SWMU 6)

AOC 4
GROUNDWATER
OUTSIDE SWMU 6
SLURRY WALL

SLURRY WALL

CAMU

SWMU 2
WASTEWATER
PRETREATMENT
SYSTEM

SWMU 1b
BURIED
VACUUM
POND

LAB

CULVERT

SLURRY WALL

Closed
RCRA Units

GATE

AOC 3
FORMER BARGE SLIP

AOC 3
FORMER CREOSOTE
TANK

SWMU 1d
POLE BUGGY
STORAGE AREA

SLURRY WALL

WOOD WASTE DISPOSAL AREA #2
SWMU 3-2

HARRISON COUNTY INDUSTRIAL SEAWAY

BERNARD BAYOU

N

CULVERT

SWMU 3-4
WOOD WASTE
LANDFILL

NOT AN
ENTRANCE

SWMU 1c
STORM
DRAIN

SLURRY WALL

SLURRY WALL

SWMU 3-1
WOOD WASTE
LANDFILL

TURKEY CREEK

AOC 2 TURKEY
CREEK

AOC 2 TURKEY
CREEK

LEGEND

- SURFACE DRAINAGE RUNOFF
- APPROXIMATE LOCATION OF AOC
- APPROXIMATE LOCATION OF SWMU
- PROPERTY LINE

SCALE 1 INCH = 250 FEET

62.5 125 250

0 62.5 125 250 500

SITE PLAN

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE:	APPROVED:	DRAWN BY:
03/28/2017	BY:	PDM
SCALE:	DATE:	CAD NO.
1" = 250'		GP PERMIT RENEWAL

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 2

CFI PROPERTY LINE

FIRM

FLOOD INSURANCE RATE MAP

HARRISON COUNTY, MISSISSIPPI

AND INCORPORATED AREAS

PANEL 262 OF 575

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

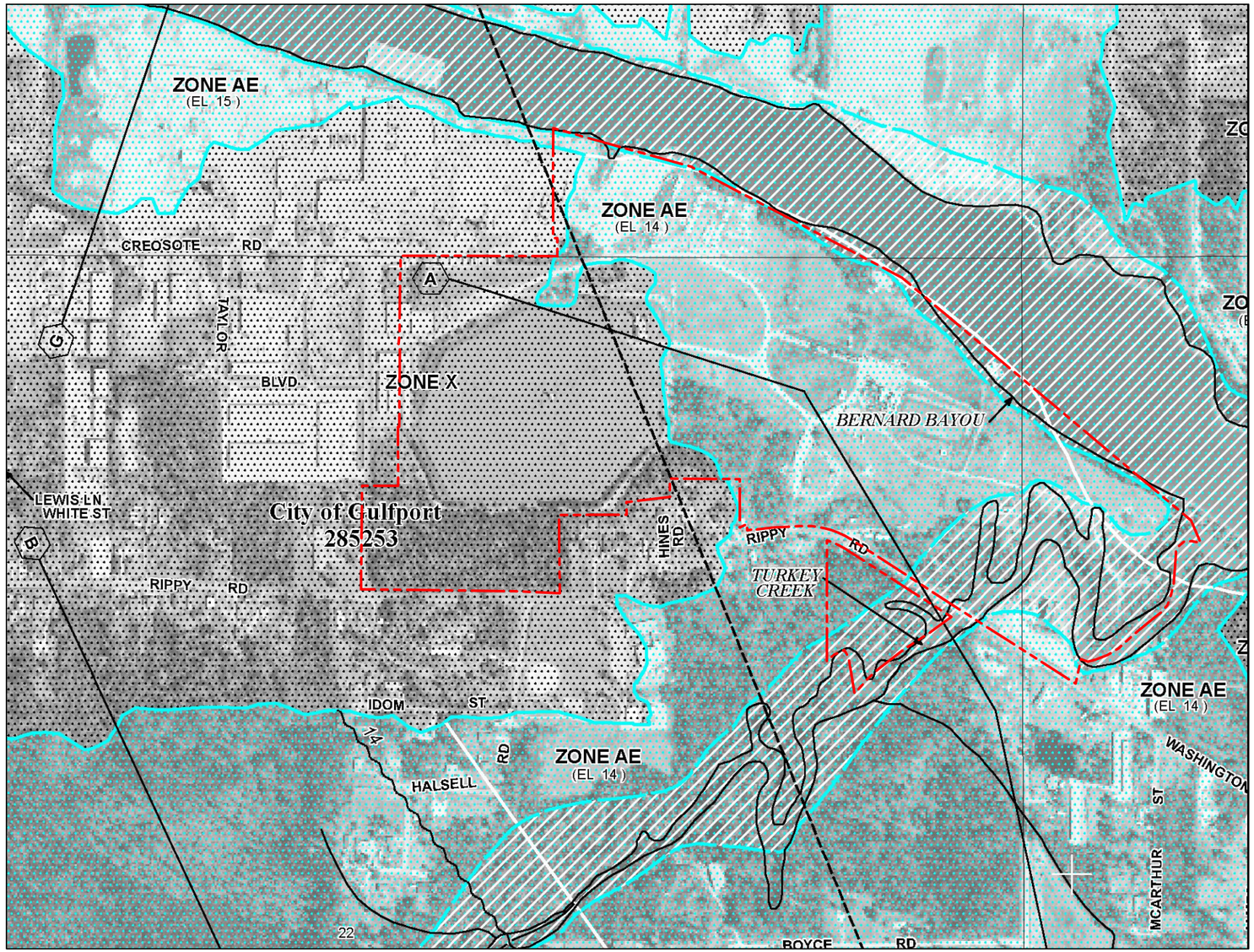
COMMUNITY	NUMBER	PANEL	SUFFIX
GULFPORT, CITY OF	285253	0262	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
28047C0262G

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000 M — 1000-meter Universal Transverse Mercator grid values, zone 16
- 600000 FT — 5000-foot grid ticks: Mississippi State Plane coordinate system, east zone (FIPSZONE 2301), Transverse Mercator projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY

Gulfport City Hall Planning and Zoning Department, 2309 15th Street, Gulfport, Mississippi 39501 (Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION
May 26, 1970

FLOOD HAZARD BOUNDARY MAP REVISIONS
None

FLOOD INSURANCE RATE MAP EFFECTIVE
May 26, 1970

FLOOD INSURANCE RATE MAP REVISIONS

July 1, 1974; February 20, 1976; November 16, 1983; July 4, 1988 (For description of revisions listed above, see Notice To Users page in the Flood Insurance Study Report.)

October 4, 2002 – to update corporate limits, to change zone designations, to increase Base Flood Elevations, to add roads and road names, to add Special Flood Hazard Areas previously shown on the unincorporated areas of Harrison County Flood Insurance Rate Map dated August 18, 1992, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET

N

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

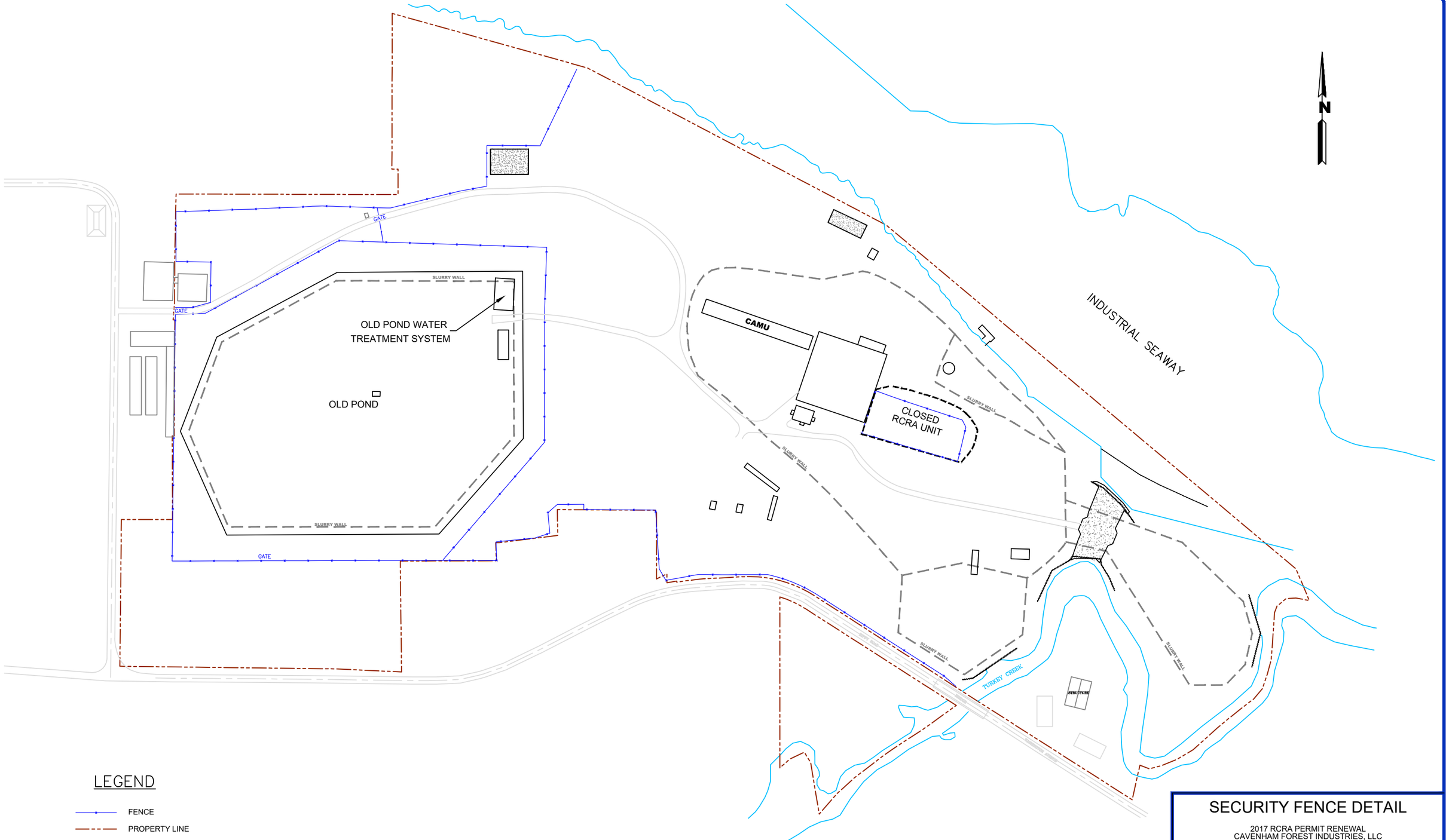
100 YEAR FLOOD MAP

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE: 03/28/2017	APPROVED: BY: _____ DATE: _____	DRAWN BY: PDM
SCALE: 1" = 500'		CAD NO. FLOOD PLAIN MAP

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 3



LEGEND

FENCE

PROPERTY LINE

NOTES:
1. CONTOUR INTERVAL IS 2 FEET.
2. CONTOURS SHOWN ARE GROUND SURFACE ELEVATIONS RELATITIVE TO THE NATIONAL GEODETIC VERIFIED DATUM

SCALE 1 INCH = 250 FEET

62.5 125 250

0 62.5 125 250 500

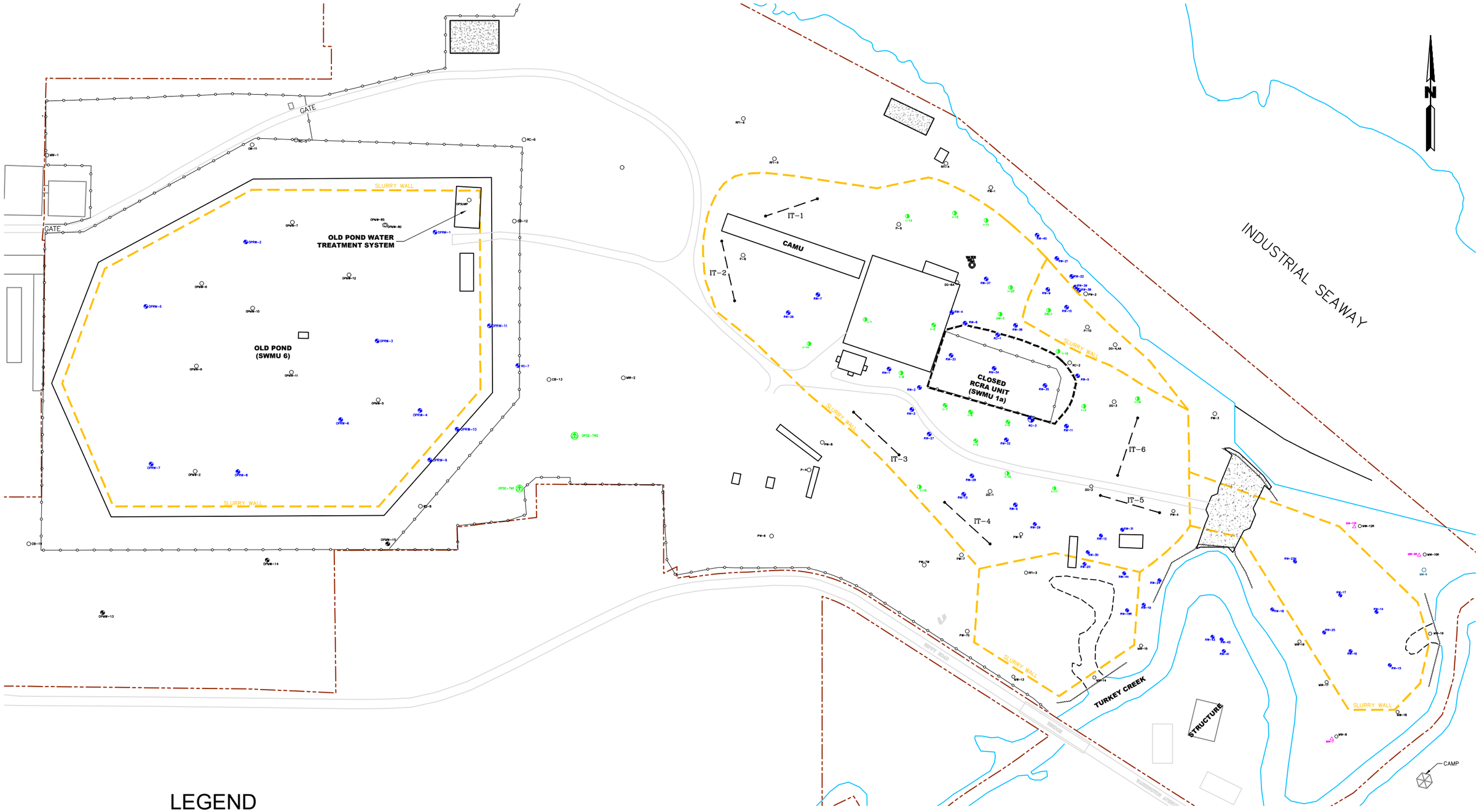
SECURITY FENCE DETAIL

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE: 03/31/2017	APPROVED: BY: DATE:	DRAWN BY: PDM
SCALE: 1" = 250'		CAD NO. SECURITY FENCE DETAIL

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 4



LEGEND

- RECOVERY WELL
- TREATED WATER INJECTION WELL
- HORIZON 3 MONITORING WELL
- HORIZON 5 MONITORING WELL
- WATER TREATMENT SYSTEM
- IT-1, ETC — INFILTRATION TRENCHES
- DEEP MONITORING WELL (100-FOOT SAND)

SCALE 1 INCH = 200 FEET

50 100 200

0 50 100 200 400

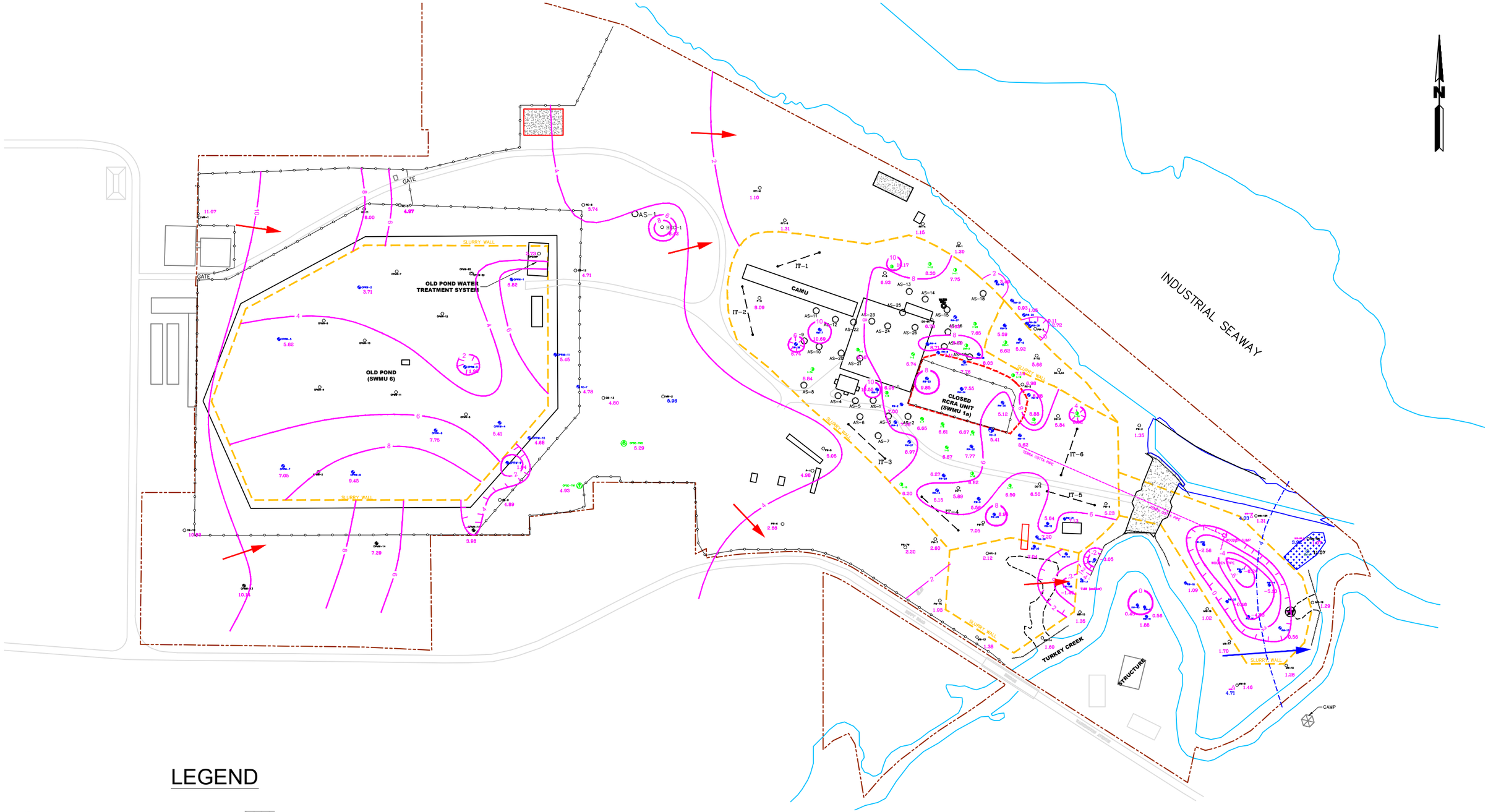
MONITORING WELL LOCATIONS

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE: 03/28/2017	APPROVED: BY: _____ DATE: _____	DRAWN BY: PDM
SCALE: 1" = 200'		CAD NO. GPPOT_11-2016

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 5



LEGEND

- RECOVERY WELL
- TREATED WATER INJECTION WELL
- HORIZON 3 MONITORING WELL
- HORIZON 5 MONITORING WELL
- WATER TREATMENT SYSTEM
- IT-1, ETC — INFILTRATION TRENCHES
- DEEP MONITORING WELL (100-FOOT SAND)
- H3 POTENTIOMETRIC FLOW DIRECTION
- H5 POTENTIOMETRIC FLOW DIRECTION

NOTE:
H3 POTENTIOMETRIC CONTOURS (FT MSL) BASED ON WATER LEVEL MEASUREMENTS OF NOVEMBER 16-17, 2016.
H5 POTENTIOMETRIC CONTOURS (FT MSL) BASED ON WATER LEVEL MEASUREMENTS OF NOVEMBER 16-17, 2016.
HORIZON 3 (H3) CONTOURS SHOWN AS MAGENTA LINES. HORIZON 5 (H5) CONTOURS SHOWN AS BLUE LINES.
DASHED WHERE INFERRED.
ND - NO DATA
CONTOUR INTERVAL AS SHOWN

SCALE 1 INCH = 250 FEET

62.5 125 250

0 62.5 125 250 500

H3 AND H5 POTENTIOMETRIC MAP

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE: 03/28/2017	APPROVED: BY: _____ DATE: _____	DRAWN BY: PDM
SCALE: 1" = 250'		CAD NO. GPPOT_11-2016

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 6

ATTACHMENT C

POST CLOSURE PLAN AND FINANCIAL REQUIREMENTS

7.0 CLOSURE AND POST-CLOSURE PLAN

270.14(b)(13) A copy of the closure plan and, where applicable, the post-closure plan required by §§264.112, 264.118, and 264.197. Include, where applicable, as part of the plans, specific requirements in §§264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.601, and 264.603.

7.1 Closure Plan

The RCRA units have been closed using an approved closure plan.

7.2 Post-Closure Plan

Post-closure care for the in situ closure of the surface impoundment will continue for a minimum of 30 years after the date of complete closure and consists of at least 1) monitoring and reporting in accordance with the requirements of MHWMR Subparts F and K of Part 264, and 2) maintenance and monitoring of waste containment systems in accordance with the requirements of Subparts F and K of Part 264.

The post-closure standards require the following elements as a minimum which are described below. The elements listed here and pertinent information herein this document comprise the post-closure plan.

- Groundwater Sampling and Analysis Plan;
- Final Cover Monitoring Plan;
- Run-on/Run-off Control System;
- Notice to Local Land Authority;
- Notice in Deed Property;
- Security Requirements.

The Groundwater Sampling and Analysis Plan is included as Attachment D. Monitoring of the final cover, run-on/run-off control, and security are described in the Inspection and Security Plan included as Attachment A. Post-closure notices are addressed in Section 8.0 of this application.

Furthermore, 40 CFR § 264.118 (b) (3) requires the name, address, and telephone number of the party to contact in regards to the hazardous waste facility during the post-closure care period. The site contact person is Clyde Woodward, Environmental Management Services, Inc., P.O. Box 15369, Hattiesburg, Mississippi 39404-5369. (601) 544-3674.

7.2.1 Description Of Groundwater Monitoring Activities and Frequencies

The groundwater remediation system for the Gulfport RCRA area consists of the following components:

- Soil-bentonite cutoff wall;
- Thirty-five (35) groundwater recovery wells within the cutoff area;
- Treatment System for recovered groundwater;
- Fourteen (14) shallow injection wells;
- Six (6) shallow infiltration trenches;
- A network of 107 biosparging wells; and
- A network of groundwater monitoring wells.

The wells are sampled on a semiannual basis and analyzed for waste specific and indicator parameters using procedures approved by the EPA. CFI has implemented a groundwater compliance monitoring program. This program is presented as Attachment D.

7.2.2 Description Of Maintenance Activities and Frequencies

In general, informal inspections and corrective maintenance inspections are performed daily around the site. Recorded inspections occur both monthly and quarterly. Equipment normally inspected daily are air compressors, pumps, pipe and water lines, electrical wiring, heat tape and lamps, well pumps and lines, back hoe, and loader. Inspections include oil levels in mechanical equipment, visual detection of line leaks, loose connections, faulty pipe lines, and worn electrical wires on all electrical lines and components. Spare components for parts critical for operation are maintained in on site storage.

7.2.2.1 Final Cover Monitoring Plan

The final cover Monitoring Plan was developed to:

- Detect erosion damage;
- Inspect final containment structure;
- Inspect facility monitoring systems; and
- Inspect vegetative cover.

Inspection of the final cover by a representative of CFI is conducted at the frequency indicated below:

Inspection Frequency	Time Period
1/quarter	Remaining Time

Inspections of the final cover and its containment structure is conducted once per quarter, after any major 25-year, 24-hour storm event, and after any local hurricane. A 25-year, 24-hour storm event is defined by the National Weather Service as "the maximum 24-hour precipitation event with a probable recurrence interval of once in 25 years." To further define this, it is the maximum amount of rain that might be expected from storm that lasts 24 hours. For the Cavenham site that is a 12-inch rainfall event. If any disruptions such as channel diversions or ponding is noticed, proper remedial actions will be initiated. A report will be filed in case repairs are required and/or completed. These reports shall include the date and time of the inspection, the name of the person performing the inspection, and the defects observed.

Inspectors shall observe the final cap or cover for such defects as erosion, gullies, loss of vegetation, cracking or settlement, burrows or other animal activities, presence of perennial wood vegetation, and slumping or sliding. Any repairs or corrections will be made using topsoil or compacted clay, as required, to return the cap to its original grade. Reseeding will be performed, if needed. Vent pipes will be inspected to ensure that they remain free of any blockages.

7.2.2.2 Run-On/Run-Off Control

The purpose of the perimeter drainage system is to collect run-off generated by the increased surface area of the enclosed Surface Impoundment (Figure 2). The perimeter drainage system is designed with a 0.5 percent slope to enhance drainage and is connected to the existing plant drainage system for site run-off collection and discharge.

Run-on and run-off control is inspected and documented on a quarterly basis. The inspections are scheduled quarterly because there is a low likelihood for problems to arise with this system. In addition, the system is inspected during routine operations to ensure that the ditches are not clogged or eroded.

It is possible that every 100-year, 24-hour storm or hurricane may cause the disruption of the closed surface impoundment and plant site run-off collection and disposal system. Accordingly, a representative of CFI will conduct an inspection after such a major event to ensure proper operation of these run-off collection and disposal systems. If any disruptions, such as ponding of water or channel diversions are noted, the proper remedial actions will be initiated and the MDEQ notified.

7.2.2.3 Leachate Collection Detection and Removal Systems

This section is not applicable.

7.2.2.4 Gas Venting System

The gas collection/venting system has been designed to be a passive system which will require very little maintenance. The system will be inspected following the schedule outlined for the final cover. During inspection the vent pipes will be checked to make sure they are free of any blockage.

7.2.2.5 Ground-Water Monitoring System

Monitoring wells will also be inspected following the inspection schedule outlined for the final cover and prior to each sampling event. The inspection will consist of:

- Inspection of the well riser pipe to assure integrity;
- Inspection of the protective casing to assure proper protection of the standpipe;
- Inspection of the protective post and concrete pad to assure protection of the monitor well;
- Sounding the total well depth to determine the degree of siltation in wells that do not recharge properly or produce sediment during purging during sampling events;
- Inspection of pumps and lines will include pump oil levels and pump function, loose connections and faulty wires, and line integrity checks.

7.2.2.6 Security Devices

The security devices of the closed facility will be inspected following the inspection schedule outline for the final cover.

This inspection will involve inspection of the fence, warning signs, gates, monitor wells and any additional facilities or structures to determine if maintenance to the security device is required. Any items that require maintenance will be reported to Environmental Management Services, Inc. The Environmental Supervisor will take actions to remedy the problem. Details of the security plan are provided in Attachment A.

7.2.2.7 Benchmark Integrity

Excessive total settlement or differential settlement may impair the integrity of the closure. Permanent benchmarks have been placed to determine if excessive settlement of the facility closure is occurring.

The integrity of permanent benchmarks will be maintained by inspection and subsequent repair if necessary. These inspections will be concurrent with the cover inspections.

Benchmarks, recovery wells, and perimeter wells were surveyed annually for the first three (3) years, at year five (5), and have been surveyed at a minimum every five (5) years thereafter. The frequency of surveying the benchmarks typically occurs every two (2) years.

7.2.2.8 Wastes Generated During Post-Closure

This facility is a closed facility. All hazardous wastes on this facility were secured and closed under a certified RCRA cap. Currently, the only hazardous wastes generated come from the NPDES permitted groundwater treatment system. This treatment system utilizes bioremediation and carbon filtration of groundwater in its processes to degrade EPA characterized K001 waste. Occasionally, sludge from this process and expended carbon from the carbon filtration units must be shipped off site for disposal purposes.

7.2.2.9 NPDES Permitted Treatment System

The NPDES permitted treatment system is inspected daily, monthly, and quarterly. Inspection parameters are similar for each inspection. Daily inspections are not recorded but necessary for optimal process performance. These parameters are listed in the quarterly inspection form. Pumps and motors are inspected for oil level, electrical lines are checked for loose connection and defective wires, and all lines are checked for integrity. Maintenance is performed in the event of an inspection or system failure, or on an “as needed” basis.

The NPDES permitted groundwater treatment system has been modified to treat recovered oil as well as recovered groundwater. All tanks associated with collection and storage of liquids are inspected daily as part of the routine maintenance activities and monthly. A checklist (Table A-1) is used for written documentation. The tanks, lines, and valves are inspected for leaks and structural integrity. Electrical wiring is inspected for loose connections or faulty wires. This system is also inspected on a quarterly basis as indicated on Table A-2.

7.2.2.10 Groundwater Recovery Wells

The groundwater recovery wells provide the source water for the NPDES permitted groundwater treatment system and have identical inspection and maintenance schedules and parameters as the groundwater treatment system. The well pumps and oil levels are checked, electrical lines are checked for loose connections and defective wires, and all lines are checked for integrity. Maintenance is performed upon inspection or system failure and on an “as needed” basis.

7.2.2.11 Air Sparging Wells

Air sparging well points are part of the groundwater recovery and treatment process. As such they have an identical inspection schedule as the other portions of the aforementioned process. The air

sparging well points are checked for broken lines and meter integrity and maintenance is performed in the event of a system or inspection failure, or on an “as needed” basis.

7.2.2.12 Treated Water Injection System

The treated water injection system returns a portion of the treated discharge back to the aquifer. This is a passive system with few components. The maintenance on the injection wells is performed upon an inspection or system failure, or on an “as needed” basis.

7.2.2.13 Infiltration System

The infiltration trenches are subterranean and are impossible to inspect. Any external piping and meters associated with these infiltration trenches are inspected as part of the facility inspection each quarter. In the event that it is determined that the trenches fails to meet performance standards, a study will be performed to determine the cause of failure and the best recourse for repair.

Post-Closure Cost Estimate

POST CLOSURE COST ESTIMATE **April 23, 2021**

CAVENHAM FOREST INDUSTRIES, LLC - Gulfport, MS

Cost of Post-Closure Care

	LINE ITEM	CORRECTIVE ACTION			NON-CORRECTIVE ACTION			TOTAL
		COST/YR	YEARS	TOTAL	COST/YR	YEARS	TOTAL	
1.0	Removal of Leachate (PC-2)	$0.00	10	$0.00	$0.00	20	$0.00	$0
2.0	Site Security (PC-3)	$500.00	10	$5,000.00	$500.00	20	$10,000.00	$15,000
3.0	Maintenance of Vegetative Cover (PC-4)	$2,880.00	10	$28,800.00	$2,880.00	20	$57,600.00	$86,400
4.0	Maintenance and Inspection (PC-5)							$17,057
5.0	Groundwater Monitoring (PC-6, SA-8, SA-8A)	$23,374.78	10	$233,747.80	$12,586.42	20	$251,728.40	$485,476
6.0	Deed Notation (PC-7)	$0.00	10	$0.00	$0.00	20	$0.00	$0
7.0	Maintenance and Inspection of Asphalt Cover (PC-8)	$0.00	10	$0.00	$0.00	20	$0.00	$0
8.0	Subtotal of Post-Closure Costs (Lines 1-7)							$603,933
9.0	Engineering Expenses (10% of Post Closure Cost)							$60,393
10.0	Certification of Completion of Post-Closure (PC-9)						$4,960.00	$4,960
11.0	Subtotal							$669,286
12.0	Contingency (20% of Subtotal)							$133,857
	Total Cost of Post Closure Care Included (PC-1)							**$803,144**

Cost of Post-Closure Care: Maintenance of Groundwater Treatment System

	LINE ITEM	CORRECTIVE ACTION			NON-CORRECTIVE ACTION			TOTAL
		COST/YR	YEARS	TOTAL	COST/YR	YEARS	TOTAL	
13.0	Maintenance of Groundwater Treatment System							
13.1	Site Labor - Half-time employee for operation of the recovery and injection systems and monitoring of the water treatment system during corrective action.	$62,400.00	10	$624,000.00	$0.00	20	$0.00	$624,000
13.2	Operating Expenses - costs other than site labor, including electricity, replacement parts, internal monitoring, and etc.	$30,000.00	10	$300,000.00	$0.00	20	$0.00	$300,000
13.3	Permit Monitoring - Cost of analyzing samples from NPDES outfall.	$5,048.00	10	$50,480.00	$0.00	20	$0.00	$50,480
13.4	Major Maintenance - 5% of 13.1 and 13.2.	$4,620.00	10	$46,200.00	$0.00	20	$0.00	$46,200
13.5	Report/Permitting - Semi-annual reports, renewal of permit applications, etc.	$5,000.00	10	$50,000.00	$0.00	20	$0.00	$50,000
13.6	Contingency 20% of 13.1 through 13.5	$21,413.60	10	$214,136.00	$0.00	20	$0.00	$214,136
	Total Cost for Operation of the Groundwater Corrective Action System							**$1,284,816**

TOTAL COST FOR 30 YEAR POST-CLOSURE PERIOD	**$2,087,960**

Summary Worksheet - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Summary Worksheet			
Activity		**Worksheet Number**	**Cost**
1	Removal of Leachate	PC-2	$0
2	Site Security	PC-3	$15,000
3	Maintenance of Negative Cover	PC-4	$86,400
4	Maintenance and Inspection	PC-5	$17,057
5	Groundwater Monitoring	PC-6	$485,476
6	Deed Notation	PC-7	$0
7	Maintenance and Inspection of Asphalt Cover	PC-8	$0
8	Subtotal of Post-Closure Costs (Add lines 1-7)		$603,933
9	Engineering Expenses (Engineering expenses are typically 10% of post-closure costs, excluding certification of post-closure.)		$60,393
10	Certification of Post-Closure	PC-9	$4,960
11	Subtotal (Add Lines 8, 9, & 10)		$669,286
12	Contingency Allowance (Contingency allowances are typically 20% of post-closure care costs, engineering expenses, and cost of certification of post-closure.)		$133,857
TOTAL COST OF POST-CLOSURE CARE (Add lines 11 and 12)			**$803,144**

Removal of Leachate - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Removal of Leachate			
1	Volume of Leachate to be removed per event	0	gal
2	Number of Leachate removal events per year	0	events/year
3	Volume of Leachate to be removed per year (Multiply line 1 by line 2)	0	gal/year
4	Removal costs of Leachate per year (Multiply line 3 by $1.16 per gallon)	$0.00	year
5	Number of years in the post-closure care period	13	years
Total Cost of Removal of Leachate (Multiply line 4 by line 5) (Enter total on Worksheet PC-1, Line 1)			**$0.00**

Site Security - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

1 Fencing			
1.A	Length of fencing	0	ft
1.B	Labor, material, and equipment cost per	$22.50	$ per foot
1.C	**Cost of Fence site** (Multiply line 1.A by 1.B		**$0.00**
2 Corner Posts			
2.A	Number of corner posts required (if unknown, assume 4)	0	posts
2.B	Cost per corner post	$154.00	$ per post
2.C	**Cost to Erect Corner Posts** (Multiply line 2.A by line 2.B)		**$0.00**
3 Gates			
3.A	Number of gates required (Assume minimum of one unless otherwise specified	0	gate(s)
3.B	Labor, materials, and equipment costs per gate	$350	$ per gate
3.C	**Cost to install Gates** (Multiply line 3.A be 3.B)		**$0**
4 Reflector Signs			
4.A	Number of signs required (Assume a minimum of four, unless otherwise specified)	0	signs
4.B	Labor, materials, and equipment cost per sign	$115.00	per sign
4.C	**Total Cost to install Signs** (Multiply Line 4.A by line 4.B)		**$0**
5 Fence Maintenance			
5.A	Annual Cost	$500.00	**per year**
5.B	Number of years in the post-closure care period	30	**years**
5.C	Total Cost for maintenance (multiply lines 5.A and 5.B).		**$15,000**
TOAL COST OF SITE SECURITY (Add lines 1.C, 2.C, 3.C, and 4.C) (Enter total on worksheet PC-1, line 2)			**$15,000**

Notes: Fence is existing, assume $500 per year for maintenance.

Maintenance of Vegetative Cover - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

1 Mowing			
1.A	Area of cover to be mowed (Enter from worksheet LF-1, line 1.D	40,900	ft^2
1.B	Convert the area in ft^2 to MSF (thousand square feet) (Divide line 1.A by 1,000)	40.9	MSF
1.C	Labor and equipment cost per MSF	$2.13	MSF
1.D	Cost of one mowing event (Multiply line 1.B by line 1.C)	$720.00	$ per event
1.E	Number of mowing events per year	4	events/year
1.F	Number of years in the post-closure care period	30	years
1.G	Number of mowing events during the post-closure care period (Multiply line 1.E by line 1.F)	120	events
1.H	**Cost to Mow for Post-Closure Care Period** (Multiply line 1.D by line 1.G)		**$86,400**
2 Fertilizing			
2.A	Area of cover to be fertilized (Enter from line 1.B)	40.9	MSF
2.B	Labor, material, and equipment cost per MSF	$3.04	
2.C	Cost of one fertilizing event (Multiply line 2.A by line 2.B)	$124	per event
2.D	Number of fertilizing events per year	0	events/year
2.E	Number of years in the post-closure care period	30	years
2.F	Number of fertilizing events during the post-closure care period (Multiply line 2.D by line 2.E)	0	events
2.G	**Cost to Fertilize for the Post-Closure Care Period** (Multiply line 2.C by line 2.F)		**$0**
3 Watering			
3.A	Area of cover to be watered (Enter from line 1.B)	40.9	MSF
3.B	Labor and material cost per MSF	24.50	MSF
3.C	Cost of one watering event (Multiply line 3.A by line 3.B)	1,002.05	per event
3.D	Number of watering events per year	0	events/year
3.E	Number of years in the post-closure care period	30	years
3.F	Number of watering events during the post-closure care period (Multiply line 3.D by line 3.E)	0	events
3.G	**Cost to Water for the Post-Closure Care Period** (Multiply line 3.C by 3.F)		**$0.00**
TOTAL COST OF MAINTENANCE OF VEGETATIVE COVER (Add lines 1.H, 2.G, and 3.G) (Enter total on worksheet PC-1, line 3)			**$86,400**

Notes: Gulfport receives in excess of 60" of rain per year. No watering required.
Cover is presently healthy and has not been fertilized since construction.

Maintenance and Inspection - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

If maintenance costs are not specifically indicated, the cost of maintaining and repairing the final cover can be estimated based on a percentage of the cost of constructing the final cover (such as 20 percent). If the unit is closed and construction costs for the final cover are not available, use landfill worksheet LF-3 through LF-6, found in Chapter 7 to estimate the cost

1 Maintenance And Repair of Final Cover				
1.A	Cost of installing clay layer (Enter from worksheet LF-2, line 1, or from owner or operator information)		$11,725.00	
1.B	Cost of installing geomembrane (Enter from worksheet LF-2, line 2, or from owner or operator information)		$16,397.00	
1.C	Cost of installing drainage layer (Enter from worksheet LF-2, line 3, or from owner or operator information)		$17,816.00	
1.D	Cost of installing topsoil (Enter from worksheet LF-2, line 4, or from owner or operator information)		$7,846.00	
1.E	Total cost of final cover (Add lines 1.A, 1.B, 1.C, and 1.D)		$53,784.00	
1.F	**Cost to Maintain and Repair Final Cover** (Multiply line 1.E by 0.20)			**$10,756.80**
2 Post-Closure Care Inspection				
2.A	Cost of conducting one inspection	$210.00	per inspection	
2.B	Number of inspections each year	1	inspection per year	
2.C	Cost of conducting post-closure care inspections per year (Multiply line 2.A by line 2.B)	$210.00	per year	
2.D	Number of years in post-closure period	30	years	
2.E	Cost to Conduct Post-Closure Care Inspections Over the Post-Closure Care Period (Multiply line 2.C by 2.D)	$6,300.00		
TOTAL COST OF MAINTENANCE AND INSPECTION (Add lines 1.F and 2.E) (Enter total on worksheet PC-1, line 4)				**$17,056.80**

Groundwater Monitoring - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Groundwater Monitoring					
1	Number of years of groundwater monitoring during the post-closure care period	10 + 20	years		
2	Cost of groundwater monitoring per year	see notes	/year		
TOTAL COST OF GROUNDWATER MONITORING (Multiply line 1 by line 2) (Enter on PC-1 worksheet, line 5)					**$485,476.20**

Notes:

The estimate assumes the number of groundwater samples collected each year during the remaining 10 year corrective action period is 13 samples/event with two sampling events per year. Once corrective action is complete the number of samples will be reduced to 7 samples/event twice each year for 20 years.

Annual cost during the corrective action period based on 13 wells (See SA-8) =	$23,374.78	
Total cost during corrective action period = $31,027.62 * 10 years =		$233,747.80
Annual cost following corrective action period based on 7 wells (See SA-8)	$12,586.42	
Total cost following corrective action period = $16,707.18 * 20 years =		$251,728.40
Total cost of groundwater monitoring during post closure =		$485,476.20

Groundwater Sample - Page 1 of 2

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Use this worksheet to estimate the cost of sampling and analysis of groundwater monitoring wells.

1 Collection of Groundwater Sample For Corrective Action Period					
1.A	Number of sampling locations (Enter from worksheet SA-8A)			13	sample locations
1.B	Sampling team and equipment cost per work hour				
	Choose appropriate level of PPE				
	a. Protection Level D	*$147.17*	*work hour*		
	b. Protection Level C	*$*	*work hour*		
	c. Protection Level B	*$*	*work hour*		
1.C	Work hours required to collect samples from one sampling location			2	work hr/ sample location
1.D	Number of hours required to collect all samples (Multiply line 1.A by line 1.C)			26	work hrs
1.E	Cost to sample groundwater wells for one sampling event for Closure (E16*C12)			$3,826.42	per event
1.F	Enter the number of sampling events per year			2	events/year
1.G	Cost to collect Groundwater Samples Annually for corrective action period of Post-Closure Care (Multiply line 1.E by line 1.F)			$7,652.84	per year
2 Analysis of Groundwater Sample For Closure					
2.A	Using the table in the attachment to this worksheet, calculate the cost of analysis per sampling event for groundwater samples (Enter cost from the Attachment to this worksheet)			$7,860.97	per event
2.B	Enter the number of sampling events per year			2	events/year
2.C	Cost to Analyze Groundwater Samples Annually for corrective action period			$15,721.94	per year
Total Cost of Sampling and Analysis of Groundwater Annually for corrective action period (Add line 1.E to line 2.C) (Enter total on cost worksheet SA-2, line 6)					**$23,374.78**

3 Collection of Groundwater Sample For Post-Corrective Action Period					
3.A	Number of sampling locations (Enter from worksheet SA-8A)			7	sample locations
3.B	Sampling team and equipment cost per work hour				
	Choose appropriate level of PPE				
	a. Protection Level D	*$147.17*	*work hour*		
	b. Protection Level C	*$*	*work hour*		
	c. Protection Level B	*$*	*work hour*		
3.C	Work hours required to collect samples from one sampling location			2	work hr/ sample location
3.D	Number of hours required to collect all samples (Multiply			14	work hrs
3.E	Cost to sample groundwater wells for one sampling event for Closure (E16*C12)			$2,060.38	per event
3.F	Enter the number of sampling events per year			2	events/year
3.G	Cost to collect Groundwater Samples Annually for non-corrective action Post-Closure Care (Multiply line 3.E by line 3.F)			$4,120.76	per year
4 Analysis of Groundwater Sample For Post-Corrective Action Period					
4.A	Cost to analyze groundwater samples for one event (Enter			$4,232.83	event
4.B	Enter the number of analysis events per year			2	events/year
4.C	Cost to Analyze Groundwater Samples Annually for Post-			$8,465.66	per year
Total Cost of Sampling and Analysis of Groundwater Annually for Post Corrective Action Period (Add line 3.G to line 4.C)					**$12,586.42**
Total Cost of Sampling and Analysis of Groundwater Annually for Post-Closure Care					**$35,961.20**

Note: Total cost is for annual events during post-closure care.

Groundwater Sample - Page 2 of 2

Cost of Analysis per Sampling Event

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Cost of Analysis per Sampling Event			
Analysis	**Analysis Cost per Sample**	**Cost per Event for 13 Samples (Line 2.A)**	**Cost per Event for 7 Samples (Line 4.A)**
Base Neutral & Acid Extractable Organics (SW 3510/SW 8270)	$359.21	$4,669.73	$2,514.47
Oil and Grease (EPA 413.2)	$56.65	$736.45	$396.55
Volital Organic Analysis (EPA 624)	$188.83	$2,454.79	$1,321.81
Totals		**$7,860.97**	**$4,232.83**

Deed Notation - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Deed Notation			
1	Attorney Fees	$0.00	
2	Clerical and deed filing fees	$0.00	
Total Cost Of Deed Notation (Add lines 1 and 2)(Enter on worksheet PC-1, line 6)			$0.00

Notes: Deed notation has been completed

Maintenance and Inspection of Asphalt Cover - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

1 Maintenance of Asphalt Cover			
1.A	Area of asphalt cover (Enter from worksheet LF-1, line 1.D, or enter from owner or operator information)	0	yd^2
1.B	Cost of sealcoating asphalt cover per yd^2	$4.10	per yd^2
1.C	Cost of one sealcoating event (Multiply line 1.A by line 1.B)	$0.00	per event
1.D	Number of sealcoating events during the post-closure care period (if not provided, estimate sealcoating will be completed once every five years)	$0.00	per event
1.E	**Total Cost to Maintain Asphalt Cover** (Multiply line 1.C by line 1.D)		$0.00
2 Post-Closure Inspection			
2.A	Cost of conducting one inspection	$158.00	per inspection
2.B	Number of inspection per year	0	Inspections per year
2.C	Cost of conducting post-closure care inspections per year	$0.00	year
2.D	Number of years in post closure	13	years
2.E	**Cost to conduct Post-Closure Care Inspections Over the Post-Closure Period** (Multiply line 2.C by 2.D)		$0.00
Total Cost of Maintenance and Inspection (Add lines 1.F, and 2.E) (Enter total on worksheet PC-1, line 7)			$0.00

Notes: No asphalt cover is present at the site.

Certification of Completion of Post-Closure Care - Page 1 of 1

Cavenham Forest Industries, LLC

Gulfport, Mississippi

Certification of Completion of Post-Closure Care		
1	Number of units requiring certification of completion of post-closure care	1
2	Cost of certification of completion of post-closure care per unit	$4,960.00
Total Cost Of Certification Of Post-Closure Care (Multiply line 1 by 2)(Enter total on worksheet PC-1, line 10)		**$4,960.00**

ATTACHMENT D

GROUNDWATER SAMPLING AND ANALYSIS PLAN

GROUNDWATER SAMPLING AND ANALYSIS PLAN

Cavenham Forest Industries LLC
Gulfport, Mississippi Facility

Prepared By:

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

P.O. Box 15369
Hattiesburg, MS 39404
(601) 544-3674

January 26, 2006

Revised: April 1, 2016
Revised: March 31, 2017
Revised: February 3, 2022

SAMPLING AND ANALYSIS PLAN
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI
FEBRUARY 3, 2022

The report contained herein has been prepared by Environmental Management Services, Inc. (EMS) under the direct supervision of the environmental professionals indicated below. To the best of our knowledge all appropriate standards of care and practices were utilized to collect and report the data contained within this document. Services performed by EMS were conducted in a manner consistent with that degree of care and skill ordinarily exercised by reputable members of the same profession as EMS practicing in the same locality under similar conditions as exists at the time the service was provided. No other representation, express or implied, and no warranty or guarantee is included or intended in this proposal, or any report, opinion, document or otherwise as a result of, or part of the work by EMS, its subcontractors, or vendors.

Prepared By:

Date: 02/03/2022

Ethan E. Allen, RPG
Senior Geologist
MS Professional Geologist No. 0759

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1	Monitoring Well Locations

LIST OF EXHIBITS

Exhibit	Description
1	Groundwater Sample Collection Form
2	Chain-of-Custody Record

1.0 INTRODUCTION

This Groundwater Sampling and Analysis Plan has been developed by Environmental Management Services, Inc. (EMS) for the groundwater monitoring system for the closed Resource Conservation and Recovery Act (RCRA) units that are regulated by the Mississippi Department of Environmental Quality (MDEQ) and the Hazardous and Solid Waste Amendment (HSWA) permitted areas that are regulated by the U.S. Environmental Protection Agency (EPA) at the Cavenham Forest Industries, LLC (CFI) facility located in Gulfport, Mississippi. The purpose of this sampling and analysis plan is to establish sampling procedures so that groundwater samples are collected, handled, and analyzed in a consistent and technically sound manner to minimize the possibility of sampling and analytical error resulting in erroneous data. This sample and analysis plan has been developed in accordance with the Mississippi Hazardous Waste Management Regulations (MHWMR) and the EPA's Science and Ecosystem Support Division (SESD) Field Branches Quality System and Technical Procedures (FBQSTP).

The groundwater monitoring system is discussed in Section 2.0.

Monitoring parameters, sampling frequency, analytical methods, sample containers and preservation, and holding time are discussed in Section 3.0.

Preparation for each sampling event is discussed in Section 4.0.

Depth measurement procedures are presented in Section 5.0.

Well evacuation procedures are presented in Section 6.0.

Sampling procedures are presented in Section 7.0.

Sampling handling procedures are discussed in Section 8.0. These procedures include sample labels, chain-of-custody documentation, and sample shipment.

Sampling documentation is presented in Section 9.0.

Laboratory analyses are discussed in Section 10.0.

Quality assurance/quality control procedures are presented in Section 11.0.

Statistical methods are listed in Section 12.0.

2.0 GROUNDWATER MONITORING SYSTEM

CFI has implemented a groundwater monitoring system and a corrective action program for the closed RCRA units and HSWA regulated areas at the CFI Gulfport facility. The groundwater monitoring system is described below. The corrective action activities for the closed RCRA unit are described in the Revised Corrective Action Plan (May 1995). The corrective action activities at the HSWA regulated areas have been completed as Interim Measures (IM) and are described in various reports submitted by CFI to the EPA and MDEQ.

2.1 RCRA Groundwater Monitoring System

Monitoring wells in the RCRA groundwater monitoring system are divided in to three groups: compliance monitoring wells, corrective action effectiveness monitoring wells, and boundary control wells. All monitoring wells are screened in the permeable zone designated Horizon 3 (H-3) (see Revised Corrective Action Plan for detailed geological description).

The compliance monitoring wells serve as the point of compliance and are the wells at which the groundwater protection standard of Section B of Module IV of the facility permit apply. Compliance monitoring wells are RC-1, RC-2, and RC-3. The location of these wells are shown in Figure 1 of this plan. Monitoring well information is provided in Table 1 of this plan.

The corrective action effectiveness monitoring wells are used to determine the effectiveness of the corrective action program by the measurement of water levels and the analysis of groundwater quality of the wells. The corrective action effectiveness monitoring wells are located within the slurry wall. These wells are DG-2, DG-6A, RW-3, RW-7, and RW-10. The locations of these wells are shown in Figure 1 of this plan. Monitoring well information is provided in Table 1 of this plan.

The boundary control monitoring wells are used to monitor the groundwater quality at locations along the downgradient perimeter of the corrective action area. Groundwater samples are collected for analysis and depth to water measurements are also taken in these wells. The boundary control wells are PW-3, PW-7S, PW-7W, and PW-8. These wells are located outside the slurry wall and their locations are shown in Figure 1 of this plan. Monitor well information is provided in Table 1 of this plan.

2.2 HSWA Groundwater Monitoring System

Monitoring wells for the HSWA portion of the groundwater monitoring system are predominantly used as a perimeter leak detection system that surround the site. The majority of these wells are screened in the H3 permeable zone. Three monitoring wells are screened in the deeper H5U zone in the southeastern portion of the site on the periphery of SWMU 3-4. The location of the wells are shown in Figure 1 and monitoring well information, including use, is provided in Table 2 of this plan.

3.0 SAMPLING PARAMETERS AND FREQUENCY

3.1 RCRA & HSWA Monitoring Parameters

Groundwater samples must be analyzed in accordance with analytical methods specified in SW-846, 3rd Edition as revised or equivalent analytical methods. Monitoring parameters and sampling frequency are presented in Table 3 for RCRA regulated wells and Table 4 for HSWA regulated wells. Groundwater monitoring parameters, analytical methods, and holding times are listed in Table 5. In the event samples are analyzed for Appendix IX constituents, analytical methods and other sampling information are presented in Table 6.

Groundwater monitoring wells are sampled annually (once per year), semi-annually (twice per year), or biennial (once per two years). Monitoring parameters and sampling frequency are presented in Table 3 for RCRA regulated wells and Table 4 for HSWA regulated wells. It should be noted that the two groups of wells are not exclusive and that data from both sets will be used to determine the overall efficacy of the remedial measures that are in place at the site. Groundwater samples from the wells listed in Tables 3 and 4 are analyzed for the following parameters:

- Benzene
- 2,4-Dimethylphenol
- Pentachlorophenol
- Naphthalene
- Acenaphthalene
- Fluoranthene
- Benzo(a)pyrene
- Oil and Grease

In addition, CFI routinely samples a portion of the recovery wells for oil and grease to determine the most effective pumping strategy. The results of this analysis is included in the Annual Corrective Actions Monitoring Report each year.

3.2 Sample Containers and Preservation

Groundwater samples must be properly containerized upon collection. Containers are routinely supplied by the contracted laboratory and are delivered pre-preserved. Sample container type and volume for the monitoring parameters are listed in Table 5.

3.3 Sample Preservation

Many chemical parameters are unstable in water and may change drastically before analysis if the sample is not preserved at the time of sampling. As a result, samples must be properly preserved in accordance with the applicable analytical method. Methods of preservation for monitoring parameters are listed in Table 5.

Sample containers may be shipped with preservation media already in them or preservatives may be shipped in separate containers, to be added after the sample container has been filled. It is routine that the laboratory supplied sample containers are delivered pre-preserved so that no field preservation is needed. Upon collection, all samples are stored on ice or freezer packs in a cooler or other appropriate container.

3.4 Holding Times

Once groundwater samples are collected they cannot be held indefinitely and must be analyzed within a prescribed amount of time depending on the analysis to be run. Groundwater samples are sent to an analytical laboratory for analysis daily, if possible. The samples are analyzed for the parameters listed in Section 3.1. Holding time for monitoring parameters are listed in Table 5.

4.0 SAMPLING PREPARATION

4.1 Equipment

Sampling equipment to be used for collecting representative samples of groundwater includes the following:

- 100-foot fiberglass, plastic, or steel measuring tape with weighted bottom (or) electronic water level indicator
- Several gallons of organic-free water and wash bottle
- Clean rags and/or paper towels
- Plastic sheeting or large size garbage bags
- For wells not sampled by pump; bottom filling bailer for each well and nautical rope (or) peristaltic pump with supply of silicon polyethylene tubing utilizing the "soda-straw" technique (or) other means of collecting samples
- Graduated bucket
- Sample containers for each well (see Table 5)
- Sample container labels and water-proof marking pen
- Thermometer
- Preservatives for groundwater samples, if not included with the containers
- Field log and/or field forms, as applicable
- Ice chest and ice or freezer packs
- Disposable gloves
- Calculator
- pH, conductivity, turbidity meters

4.2 Decontamination of Equipment

Prior to actually beginning any field sampling, all equipment that is reused is decontaminated prior to the first use, between wells, and at the end of the sampling event. Decontamination of sampling equipment consists of thoroughly washing all appropriate equipment with water and a phosphate free detergent followed by a thorough rinsing with organic-free water. Sampling equipment which may require decontamination includes:

- Portable electric submersible pumps
- Dedicated bailers, before and after sampling
- Water level meter

5.0 DEPTH MEASUREMENTS

Depth measurements are necessary to determine groundwater elevation, direction of flow, the volume of water to evacuate from each well, determine if sediment is accumulating in the bottom of a well, and to verify the total depth of a well. In general, the depth to water will be during each sampling event and total depth of a well will only be measured if the monitoring well is not recharging properly or producing a large amount of sediment during purging.

The depth to water is measured in all wells periodically and prior to sampling to collect the data necessary to construct potentiometric maps. Depth measurements are made to the nearest 0.01 foot and recorded in the field log and/or on appropriate field forms. Depth measurements are recorded in the field log or on appropriate field forms. Following the measurements in each well, the equipment used for depth measurements is decontaminated using the procedures described in Section 4.2. Depth measurements may be measured by an electronic device or with a tape measure with a "bell" on the end of the tape. All measurements use survey reference points that are marked on each well.

5.1 Depth to Water Measurements

5.1.1 Electronic Method

Using the electronic water level unit, lower the probe down the center of the casing and allow the cord to go untangled down the well. The instrument will indicate contact of the probe with the surface of the water by sounding an alarm, illuminating a light, or both. When contact with the water surface is indicated, read the depth at the measuring point on the top of the well casing. Record depth to water in the field log and/or appropriate field forms. To determine the water elevation, subtract the depth to water measurement from the elevation of the well casing. Top of casing elevations are listed in Tables 1 and 2.

5.1.2 Tape Method

Using a fiberglass, plastic or steel measuring tape fitted with a "bell", lower the weighted tape down the center or casing. Using the procedure, contact with the water surface is indicated by a "plopping" sound. The tape is gently raised and lowered until the bell just makes contact with the water surface. When contact with the water surface is indicated, read the depth at the top of the well casing measuring point as marked on the tape. To determine the water elevation, subtract the depth to water measurement from the elevation of the well casing. Top of casing elevations are listed in Tables 1 and 2.

5.2 Total Depth Measurements

In wells that are not recharging properly or produce sediment during purging, total depth measurements can be utilized to determine if sediment that has collected in the bottom of the well is interfering with well production. As many of the wells at this facility are either fitted with pumps or contain oily contaminants, this procedure is to be performed on well suspected to produce sediment. If the well continues to produce sediment, it will be redeveloped or replaced.

6.0 WELL EVACUATION

Some wells are equipped with in-well pumps that cycle on and off periodically as part of the corrective action; therefore, these wells will not be evacuated or purged prior to sampling. These wells may be sampled directly without evacuating the wells.

For the wells not equipped with active pumps, groundwater is evacuated or purged from the wells using either dedicated bailers or non-dedicated pumps. To ensure that formation water is sampled, a minimum of three well volumes is evacuated from the well. One well volume is the volume of water standing in the well at the time of sampling. If a well is evacuated such that all of the water is removed or there is little water remaining in the well after evacuation (dryness), then the well is considered sufficiently purged and it may be sampled after it has had sufficient time to recover. The method for determining one well volume is as follows:

$$V = \pi r^2 h$$

where:

V	= volume (ft^3)
B	= 3.14
r	= radius of monitor well casing (feet)
h	= well depth below land surface (feet)
Gallons	= V(ft^3) 7.5

The volume of one well volume is entered into the field log and/or field forms, as applicable. To ensure that a sufficient volume of water is evacuated from each well, purge wter is collected in a container of known volume (such as a graduated 5-gallon bucket). An example groundwater sample collection form is included as Exhibit 1.

At least three well volumes of water are removed from the wells to ensure an accurate sample of groundwater quality; if this is not possible because the wells are low yielding, the well is bailed or pumped to dryness before sampling. To ensure that an adequate purge is achieved, water quality parameters are measured and assessed to demonstrate that stabilization has occurred. Stabilization is considered when at least three consecutive measurements, the pH remains constant within 0.1 Standard Units (SUs), the specific conductance varies no more than approximately 5 percent, and the turbidity is below 10 Nephelometric Turbidity Units (NTUs). It should be noted that recovery wells and monitoring wells that are known to have free product or very high levels of contamination will not stabilization parameters measured.

If purging and sampling of each well cannot be completed within 24 hours, the well must be purged again prior to conducting any sampling. All equipment should be decontaminated as described in Section 4.2 between sampling locations.

After the well has been evacuated, the actual volume of water purged from the well is entered into the field log and/or field forms, as applicable. An example groundwater collection form has been included as Exhibit 1.

7.0 SAMPLING PROCEDURES

Wells that are equipped with in-well pumps are sampled from the discharge line. At these wells, a valve has been installed in the discharge line for sampling. The sample is collected by opening

the valve and collecting the sample directly into the sample container. After sufficient sample has been collected, the valve is closed.

At each well that is not equipped with a pump, after purging has been completed and prior to collecting samples, the well is allowed to recharge sufficiently. In some wells, this may require waiting a few minutes to a few hours; in other wells, recovery time may be extremely slow.

Typically, for wells without a dedicated pump, the wells are purged with a down-hole pump and then sampled with a dedicated bailer. The bailers are decontaminated before and after use and stored in a dedicated storage bin while not in use. If a peristaltic pump is used, sample aliquots collected for semi-volatile organic analysis use the vacuum jug assembly, and aliquots collected for volatile organic analysis use the "soda-straw" technique. Care is taken not to agitate samples in order to limit aeration of the samples. Aliquots collected for volatile organic analysis will have no head space remaining in the sample vial. Samples are collected in the following sequence, as appropriate.

- Volatile Organic Constituents (VOCs)
- Semi-volatile Organic Constituents (semi-volatiles)
- Oil and Grease

8.0 SAMPLE HANDLING PROCEDURES

8.1 Sample Labels

Each sample container is properly labeled to ensure that samples are handled properly and analyzed in accordance with appropriate analytical methods and within appropriate holdings times. Sample labels should be waterproof and written with waterproof ink. The following information is typically included on the label.

- Sample Number
- Well Number
- Analysis
- Preservatives
- Date and time of collection
- Initials of sampler

8.2 Chain-of-Custody Procedures

The reliability of the data is enhanced by documenting the chain of possession and custody of any groundwater samples collected at the Gulfport facility. Samples are typically transported by EMS personnel from the field to the designated laboratory. A general practice of minimal transfers of sample bottle and good record keeping provides adequate chain-of-custody control. The field sampler is responsible for the custody and care of collected samples until the containers have been transferred to the custody of laboratory or other custodian. After sample collection, the chain-of-custody forms are filled out in legible handwriting, and the bottle is sealed and labeled. The sampler will assure that the sample containers are in the sampler's physical possession, in view at all times, or stored in a locked area to prevent tampering.

Chain-of-custody records typically include the following information:

- Sample number
- Well number
- Date and time of collection
- Sample matrix
- Sample analyses and analytical methods
- The number of containers for each sample for each analysis
- The name of the sampler(s)
- Method of shipment
- Persons involved in the chain-of-custody of the samples
- Date and time of custody transfer

With each transfer of sample custody, the persons involved verify sample numbers and conditions. When custody is transferred, both the person relinquishing and receiving custody must sign in the proper place. An example chain-of-custody form is included as Exhibit 2.

8.3 Shipment of Samples

Samples should be placed in the ice chest or other shipping container to minimize the possibility of breakage of sample containers.Prior to shipping, sample labels should be checked against the corresponding chain-of-custody record. If samples are hand delivered, the original chain-of-custody record should be retained by the person with custody of the samples. If the samples are

sent to the laboratory by courier (such as overnight shipment), then the chain-of-custody records are sealed in the shipping container with the samples.

After samples have been checked and packed, the shipping container is closed and custody seals place across the opening of the container to ensure the samples are not tampered with. After sealing the container, the samples should be delivered as quickly as possible to the laboratory for analysis. Samples may be hand delivered to the laboratory or sent by a courier service.

9.0 SAMPLING DOCUMENTATION

A field log is kept to record all pertinent information about the monitor well sampling event. The log consists of a bound notebook with consecutively numbered pages and a compilation of field forms. Records are kept using waterproof ink. Documentation is sufficient to reconstruct each sampling event without relying on the collector's memory. Depending on the activity that is conducted, entries in the log may include:

Names and organization of the persons performing the sampling event
Location of the sampling event (well number or cluster)
Purpose of the sampling (i.e., quarterly, annual, groundwater sampling)
Calibration information
Water level reading
Total well depth
Elevation of top of casing
Well evacuation procedures and equipment
Field measurements and methods
Calculations of the volume of standing water in the well
Total volume of water evacuated
Date and time of sample collection
Sample identification number
Sample identification number
Sample container size, type, and preservation
Sample distribution (laboratory)
Weather conditions
Sample observations, as applicable (such color)
Any other field observations

10.0 LABORATORY ANALYSES

Samples submitted for laboratory analysis are analyzed for the constituents and in accordance with the analytical methods specified in Table 5.

All laboratory work and procedures are performed in accordance with the specifications of the Test Methods for Evaluating Solid Waste Physical/Chemical Methods, third edition (EPA Publication Number SW-846, 1986, as revised) or an equivalent substitute as approved by the MDEQ and/or the EPA.

11.0 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

For any sampling and analysis program it is imperative that a good quality assurance/quality control (QA/QC) program be implemented, and that all field sampling and laboratory analyses be conducted in compliance with these QA/QC guidelines. The objectives of the QA/QC program should be to develop procedures and techniques which when implemented will produce data which are accurate, complete, precise, truly representative and comparable.

11.1 Field QA/QC Procedures

Field measurements use similar procedures as outlines above for laboratories. To assess accuracy, reference or spiked samples are analyzed. The following discussion identifies the type and number of field QA/QC samples that will be collected.

Blind duplicate samples are to be collected on at least 10 percent of the samples collected. These samples are labeled in such a way that the laboratory will not know the provenance of the sample and the results will be compared to the actual sample's results to ensure the results are accurate and reproducible.

Rinsate samples will be collected at a rate of one per sampling event. The rinsate sample will be collected by running organic free water, supplied by the lab, over a piece of non-disposable decontaminated equipment that came in contact with the groundwater that was sampled.

In addition, a trip blank containing analyte-free water will accompany each cooler of samples collected for VOC analysis. The trip blanks will be handled and treated in the same manner as the samples collected for VOC analysis. The trip blank sample will be analyzed and reported in the same manner as the samples to check for cross contamination of volatile samples that may have occurred during collection, transport, and handling at the laboratory.

11.2 Laboratory Procedures

The primary objective of the analytical and field QA/QC plan is to ensure the integrity of sample results. All samples collected during this project are analyzed in the laboratory according to approved methodologies described in Table 5. An example of a laboratory procedure is the matrix spike/matrix spike duplicate (ms/msd) samples performed by the laboratory. These samples are either analyzed as a batch ms/msd or, if specified, on a specific sample for the project. Specific criteria of accuracy and precision for each analytical methods are specified in the analytical method.

12.0 STATISTICAL ANALYSIS

During detection monitoring, groundwater monitoring results are statistically evaluated using the Behrens-Fisher Student's t-test or an alternate method listed below.

- Central tendency and dispersion - arithmetic mean, range, standard deviation, relative standard deviation, pooled standard deviation, and geometric mean;

- Measures of variability - accuracy, bias, and precision; within laboratory and between laboratories; and

- Significance test - u-test, t-test, F-test, and Chi-square test, confidence limits, and testing for outlying values.

TABLES

TABLE 1
RCRA MONITOR WELLS INFORMATION
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

WELL INFORMATION	RC-1	RC-2	RC-3	DG-2	DG-6A	RW-3	RW-7	RW-10	PW-3	PW-7W	PW-7S	PW-8
Date of Installation	Nov-87	Nov-87	Nov-87	Aug-84	Jul-91	Jul-85	Oct-90	Oct-90	Dec-87	Nov-91	Nov-91	Aug-89
Plant Coordinates												
Northing	377	317	196	52	488	217	464	436	219	-117	-259	150
Easting	1161	1316	1233	1862	1074	977	776	1309	1614	1004	1096	784
Monitoring Program[1]	C	C	C	E	E	E	E	E	B	B	B	B
Aquifer Monitored2	H-3	H-3	H-3	H-3	H-3	H-3	H-3	H-3	H-3	H-3	H-3	H-3
Well Construction[3]	SS	SS	SS	PVC	SS	CS/SS	SS	SS	PVC	PVC	PVC	PVC
Well Diameter (inches)	4	4	4	2	2	6	4	4	2	2	2	2
Sampling Method	Pump	Pump	Pump	Bailer	Pump	Pump	Pump	Pump	Bailer	Bailer	Bailer	Bailer
Top of Casing Elevation (feet MSL)[4]	13.3	11.9	11.0	11.4	15.3	11.7	13.7	8.3	10.7	8.6	8.3	12.8
Well Depth (feet)	37	35	38	34	38	40.5	34	36.5	37.7	16	12	30
One Well Volume (gallons)	24	23	25	6	6	59	22	24	6	3	2	5
Screen Interval (feet MSL)												
From:	-1.7	-8.1	-4	-5.6	-2.7	-16.3	-2.8	-10.7	-20	0.6	-2	8.7
To:	-23.7	-23.1	-27	-22.6	-22.7	-28.8	-20.3	-28.2	-27	-7.4	-7	-19.2

1 - C - Compliance Monitoring, E - Corrective Action Effectiveness Monitoring, B - Boundary Control

2 - See Corrective Action Plan Addendum, November 94

3 - SS - Stainless Steel, CS - Carbon Steel, PVC - Polyvinyl Chloride

4 - MSL - Mean Sea Level

TABLE 2
RCRA SAMPLING FREQUENCY
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

MONITORING PARAMETER	COMPLIANCE MONITORING WELLS			CORRECTIVE ACTION EFFECTIVENESS MONITORING WELLS					BOUNDARY CONTROL WELLS			
	RC-1	RC-2	RC-3	DG-2	DG-6	RW-3	RW-7	RW-10	PW-3	PW-7S	PW-7W	PW-8
Water Level	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Benzene	S	S	S	S	S	S	S	S	S	S	S	S
2,4-Dimethylphenol	S	S	S	S	S	S	S	S	S	S	S	S
Pentachlorophenol	S	S	S	S	S	S	S	S	S	S	S	S
Naphthalene	S	S	S	S	S	S	S	S	S	S	S	S
Acenaphthalene	S	S	S	S	S	S	S	S	S	S	S	S
Fluoranthene	S	S	S	S	S	S	S	S	S	S	S	S
Benzo(a)pyrene	S	S	S	S	S	S	S	S	S	S	S	S
Oil and Grease	S	S	S	S	S	S	S	S	S	S	S	S

Q - Quarterly
S - Semiannually

TABLE 3
HSWA MONITORING WELLS INFORMATION
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

Well Information	Date of Installation	Monitoring Program[1]	Monitoring Objective	Aquifer Monitored[2]	Well Construction[3]	Well Diameter	Sampling Method	Top of Casing Elevation	Ground Elevation	Screen Interval Depth (feet bgs)		Screen Interval Elevation (feet MSL)	
						(inches)		(feet MSL)[4]	(feet MSL)[4]	Top	Bottom	Top	Bottom
CB-11	Aug-85	SWMU 6	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	15.59	12.90	8.00	18.00	4.9	-5.1
CB-12	Aug-85	SWMU 6	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	15.16	12.20	20.00	30.00	-7.8	-17.8
CB-19	Aug-85	SWMU 6	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	16.91	14.40	6.00	11.00	8.4	3.4
MW-7	Apr-92	SWMU 3-4	Site Perimeter Well	H-5U	PVC	2	Peristaltic Pump	7.56	3.85	46.00	56.00	-42.2	-52.2
MW-8	Apr-92	SWMU 3-4	Site Perimeter Well	H-3U	PVC	2	Peristaltic Pump	5.68	4.02	6.00	16.00	-2.0	-12.0
MW-9R	Jan-15	SWMU 3-4	Site Perimeter Well	H-5U	PVC	2	Peristaltic Pump	7.97	5.45	44.00	54.00	-38.6	-48.6
MW-10R	Dec-14	SWMU 3-4	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	7.85	5.30	15.00	25.00	-9.7	-19.7
MW-11R	Jan-15	SWMU 3-4	Site Perimeter Well	H-5U	PVC	2	Peristaltic Pump	8.14	5.30	40.00	50.00	-34.7	-44.7
MW-12R	Dec-14	SWMU 3-4	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	8.12	5.48	26.00	36.00	-20.5	-30.5
MW-13	Aug-15	SWMU 3-1	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	5.99	2.77	13.00	23.00	-10.2	-20.2
MW-14	Aug-15	SWMU 3-1	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	5.95	2.80	15.00	25.00	-12.2	-22.2
MW-15	Aug-15	SWMU 3-1	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	6.16	3.10	24.00	34.00	-20.9	-30.9
MW-16	Aug-15	SWMU 3-4	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	7.17	4.11	16.00	26.00	-11.9	-21.9
MW-17	Aug-15	SWMU 3-4	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	6.68	3.80	16.00	26.00	-12.2	-22.2
MW-18	Aug-15	SWMU 3-4	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	5.99	3.17	16.00	26.00	-12.8	-22.8
MW-19	Aug-15	SWMU 3-4	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	6.53	3.38	17.50	27.50	-14.1	-24.1
OPMW-14	Jul-14	SWMU 6; AOC 4	Site Perimeter Well	H-2U	SS	2	Peristaltic Pump	19.63	16.26	10.00	20.00	6.26	-3.74
OPRW-2	Oct-90	SWMU 6	Interior Contaminat Trend	H-3U	SS	8	Tap	22.49	18.50	11.00	18.50	7.50	0.00
OPRW-4	Oct-90	SWMU 6	Interior Contaminat Trend	H-3	SS	4	Tap	22.00	17.00	17.50	35.00	-0.50	-18.00
OPRW-5	Sep-90	SWMU6	Interior Contaminat Trend	H-2U	SS	4	Tap	21.83	18.50	11.00	18.50	7.50	0.00
OPRW-7	Sep-90	SWMU 6	Interior Contaminat Trend	H-3U	SS	4	Tap	22.33	17.80	10.00	17.50	7.80	0.30
OPRW-9	Jul-95	SWMU 6, AOC 4	Exterior Contaminant Reduction	H-3	SS	4	Tap	26.70	19.73	20.50	36.00	-0.77	-16.27
OPRW-10	Jul-95	SWMU 6; AOC 4	Exterior Contaminant Reduction	H-3	SS	4	Tap	21.35	19.42	23.00	38.00	-3.58	-18.58
OPSUMP	Oct-89	SWMU 6	Interior Contaminat Trend	H-3U	HDPE	12	Tap	26.07	17.43	No Data	21.50	No Data	No Data
OPSE-TW1	Nov-13	SWMU 6; AOC 4	Site Perimeter Well	H-3	PVC	1	Peristaltic Pump	21.14	16.16	25.50	35.50	-9.3	-19.3
OPSE-TW2	Nov-13	SWMU 6; AOC 4	Site Perimeter Well	H-3	PVC	1	Peristaltic Pump	17.43	13.98	22.00	32.00	-8.0	-18.0
PW-1[5]	May-85	AOC 3; SWMU-1a	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	9.89	14.80	27.00	35.00	-12.2	-20.2
PW-3[5]	Dec-87	SWMU 3-2; AOC3; SWMU1a; SWMU 1d	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	10.71	10.20	36.00	43.00	-25.8	-32.8
PW-7S[5]	Nov-91	SWMU 3-1	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	8.30	4.00	6.00	11.00	-2.0	-7.0
PW-7[5]	Aug-89	SWMU 3-1; SWMU 1a	Site Perimeter Well	H-3	PVC	2	Peristaltic Pump	8.39	6.45	8.00	16.00	-1.6	-9.6
RW-18	Apr-92	SWMU 3-4	Contaminant Reduction	H-3	SS	4	Tap	6.68	5.63	10.00	35.00	-4.4	-29.4
RW-19R	Dec-14	SWMU 3-1	Contaminant Reduction	H-3	SS	4	Tap	3.23	3.23	15.00	30.00	-11.8	-26.8
RW-21	Apr-92	SWMU 1a; AOC 3	Contaminant Reduction	H-3	SS	4	Tap	7.50	6.62	13.00	29.00	-6.4	-22.4
RW-24	Apr-92	SWMU 3-1; SWMU 1a	Contaminant Reduction	H-3	SS	4	Tap	5.21	2.77	6.00	27.00	-3.2	-24.2

TABLE 3
HSWA MONITORING WELLS INFORMATION
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

Well Information	Date of Installation	Monitoring Program[1]	Monitoring Objective	Aquifer Monitored[2]	Well Construction[3]	Well Diameter	Sampling Method	Top of Casing Elevation	Ground Elevation	Screen Interval Depth (feet bgs)		Screen Interval Elevation (feet MSL)	
						(inches)		(feet MSL)[4]	(feet MSL)[4]	Top	Bottom	Top	Bottom
RW-42	Sep-09	AOC 2	Contaminant Reduction	H-3L	SS	4	Tap	7.77	5.13	33.00	40.00	-27.9	-34.9
RC-6	Mar-92	SWMU 6	Site Perimeter Well	H-3L	PVC	2	Peristaltic Pump	13.83	12.94	14.00	29.00	-1.1	-16.1

1 - Identifies HSWA regulated area that monitoring well is assigned to.
2 - See Corrective Action Plan Addendum, November 94
3 - SS - Stainless Steel, CS - Carbon Steel, PVC - Polyvinyl Chloride
4 - MSL - Mean Sea Level
5 - Assigned to RCRA permit also

TABLE 4
HSWA SAMPLING FREQUENCY
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

Monitoring Parameter	Site Perimeter Wells	Exterior Conataminant Reduction Wells	Interior Plume Trend Wells
Water Level	Quarterly	Quarterly	Quarterly
Phenolics			
2-Chlorophenol	Quarterly for two years until at least 8 sampling events have been completed, then annually.	Quarterly for two years until at least 8 sampling events have been completed, then annually.	Annually
2,4-Dimethylphenol			
4-Chloro-3-Methylphenol			
2,4,5-Trichlorophenol			
2,4,6-Trichlorophenol			
2,4-Dinitrophenol			
1,3,4,5 & 2,3,4,6-Tetrachlorophenol			
Pentachlorophenol			
Base/Neutral Compounds			
Naphthalene	Quarterly for two years until at least 8 sampling events have been completed, then annually.	Quarterly for two years until at least 8 sampling events have been completed, then annually.	Annually
Acenaphthene			
Phenanthrene			
Anthracene			
Fluoranthene			
Benzo(a)anthracene (BaA)			
Chrysene			
Benzo(b)flouoranthene (BbF)			
Benzo(k)fluoranthene (BkF)			
Indeno(1,2,3-c,d)pyrene			
Dibenzo(a,h)anthracene			
Pyrene			
Benzene			
Acenaphtylene			
Benzo(a)pyrene			
Oil and Grease	Not analyzed	Wells will be sampled on an as needed schedule each year.	Wells will be sampled on an as needed schedule each year.
Dioxins and Furans			
2,3,7,8-TCDD	Annaully	Annually	Not analyzed
1,2,3,7,8-PeCDD			
1,2,3,4,7,8-HxCDD			
1,2,3,6,7,8-HxCDD			
1,2,3,7,8,9-HxCDD			
1,2,3,4,6,7,8-HpCDD			
OCDD			
2,3,7,8-TCDF			
1,2,3,7,8-PeCDF			
2,3,4,7,8-PeCDF			
1,2,3,4,7,8-HxCDF			
1,2,3,6,7,8-HxCDF			
1,2,3,7,8,9-HxCDF			
2,3,4,6,7,8-HxCDF			
1,2,3,4,6,7,8-HpCDF			
1,2,3,4,7,8,9-HpCDF			
OCDF			

TABLE 5
RCRA AND HSWA
SAMPLING PARAMETER ANALYTICAL METHOD, CONTAINER,
PRESERVATION, AND HOLDING TIME
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

	PARAMETER	Extraction Method	SW-846 METHOD	CONTAINER TYPE	CONTAINER VOLUME	PRESERVATIVE	HOLDING TIME
RCRA REGULATED WELLS	Benzene	3550B	8260D	Glass	2 - 40 ml	Zero headspace, Cool to 4° C 2 Drops $N_2S_2O_3$ in each vial	14 Days
	2,4-Dimethylphenol Pentachlorophenol Naphthalene Acenaphthalene Fluoranthene Benzo(a)pyrene	3500B	8270D	Glass	2 - 1 L	Cool to 4° C	7 Days prior to extraction 40 days after extraction
	Oil and Grease	1664A	1664A	Glass	1 L	Cool to 4° C 2 Drops H_2SO_4 (pH < 2)	28 Days
HSWA REGULATED WELLS	**PHENOLICS:** 2-Chlorophenol 2,4-Dimethylphenol 4-Chloro-3-Methylphenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4-Dinitrophenol 1,3,4,5 & 2,3,4,6-Tetrachlorophenol Pentachlorophenol	3550B	8270D	Glass	2 - 1 L	Cool to 4°C	7 Days prior to extraction 40 days after extraction
	BASE NEUTRAL COMPOUNDS: Naphthalene Acenaphthene Phenanthrene Anthracene Fluoranthene Benz(a)anthracene (BaA) Chrysene Benzo(b)flouoranthene (BbF) Benzo(k)fluoranthene (BkF) Indeno(1,2,3-c,d)pyrene Dibenzo(a,h)anthracene Pyrene	3550B	8270D	Glass	2 - 1 L	Cool to 4°C	7 Days prior to extraction 40 days after extraction
	Oil and Grease	1664A	1664A	Glass	1 L	Cool to 4° C 2 Drops H_2SO_4 (pH < 2)	28 Days
	Dioxin/Furans	3540	8290	Glass	2 - 1 L	Cool to <6°C Unpreserved	30 Days
	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)						
	1,2,3,7,8-Penta-chlorodibenzo-p-dioxin (PeCDD)						
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)						
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)						
	Octachlorodibenzo-p-dioxin (OCDD)						
	2,3,7,8-Tetrachlorodibenzofuran (TCDF)						
	1,2,3,7,8-Penta-chloronated dibenzofuran (PeCDF)						
	2,3,4,7,8-Penta-chloronated dibenzofuran (PeCDF)						
	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)						
	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)						
	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)						
	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)						
	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)						
	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)						
	Octachlorodibenzofuran (OCDF)						

TABLE 6
APPENDIX IX SAMPLING REQUIREMENTS
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

Parameter	SW-846	Container		Preservative	Maximum Holding Time
		Type	Volume		
Volatile Organics	8240	VOA Vial	40 ml	Cool 4° C HCL to pH <2	14 Days
Semivolatile Organics	8270	Amber jug, Teflon Jug	2 liters	Cool 4° C	7 days/ 40 days
Priority Pollutants Metals	6000/7000 Series	W.M.(1) glass or plastic	1/2 pint	HNO3 to pH<2	6 months
Total Cyanides	9010	Plastic	1 liter	Cool 4° C, NaOH to pH>12	14 days
PCBs(2)	8080	Amber Jug, Teflon cap	2 liters	Cool 4° C	7 days/40 days after extraction

(1) W.M. (Wide Mouth Glass Container)
(2) PCBs (Polychlorinated biphenyls)

FIGURES

AOC 1
AREA 2

AOC 1

WOOD WASTE
DISPOSAL AREA #3
SWMU 3-3

CONTAINER
STORAGE AREA
SWMU 5

BOILER BOTTOM ASH
WASTE PILE
SWMU 4

AOC 3
FORMER BARGE SLIP

AOC 3
FORMER CREOSOTE
TANK

INDUSTRIAL SEAWAY

SWMU 2
WASTEWATER
PRETREATMENT
SYSTEM

SWMU 1d
POLE BUGGY
STORAGE AREA

WOOD WASTE DISPOSAL AREA #2
SWMU 3-2

SWMU 1b
BURIED
VACUUM
POND

AOC 4
GROUNDWATER
OUTSIDE SWMU 6
SLURRY WALL

FORMER TERRA
COTTA PIPE

FORMER WOODEN
SUMP

SWMU 3-4
WOOD WASTE
LANDFILL

SWMU 1c
STORM
DRAIN

TURKEY CREEK WATER
TREATMENT SYSTEM

SWMU 3-1
WOOD WASTE
LANDFILL

AOC 2 TURKEY
CREEK

AOC 2 TURKEY
CREEK

GATE
GATE
OLD POND WATER
TREATMENT SYSTEM
OLD POND
(SWMU 6)
SLURRY WALL
CAMU
CLOSED
RCRA UNIT
(SWMU 1a)
IT-1
IT-2
IT-3
IT-4
IT-5
IT-6
TERRA COTTA PIPE
WOODEN PIPE
WOODEN SUMP
TURKEY CREEK
STRUCTURE
CAMP

LEGEND

- DEEP MONITORING WELL (100-FOOT SAND)
- RECOVERY WELL
- TREATED WATER INJECTION WELL
- MONITORING WELL
- DEEP MONITORING WELL
- PROPERTY LINE

SCALE 1 INCH = 250 FEET

62.5 125 250

0 62.5 125 250 500

SITE PLAN

2017 RCRA PERMIT RENEWAL
CAVENHAM FOREST INDUSTRIES, LLC
GULFPORT, MISSISSIPPI

DATE: 03/28/2017	APPROVED: BY: _____ DATE: _____	DRAWN BY: PDM
SCALE: 1" = 250'		CAD NO. SITE PLAN 2016

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 1

EXHIBITS

GROUNDWATER SAMPLING DATA FORM
CAVENHAM FOREST INDUSTRIES, INC.

FIELD LOG

Site _____ Facility _____ Well No. _____

Collector/Operator _____

MONITORING WELL INFORMATION

Evacuation: Date/Time		Method of Evacuation	
Top of casing to water level	ft	Gallons per well volume	gal
Top of casing to bottom	ft	Total gallons evacuated	gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time		Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	

SAMPLE DATA

Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[$^{mg}/_{l}$]	Turbidity [NTU]

GENERAL INFORMATION

Weather conditions at time of sampling: _____

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification:

_____

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

CAVENHAM FOREST INDUSTRIES INC

CHAIN-OF-CUSTODY RECORD

Project No.:_____
Location:_____
Shipping Container ID:_____
Sampler(s):_____

SAMPLE CONTAINER DESCRIPTION

SAMPLE IDENTITY	SAMPLE DATE	SAMPLE TIME												TOTAL	Condition on Receipt Name & Date

Transporter: _____ **Airbill/Invoice No.** _____ **Total Number of Containers:** _____

SAMPLE TRANSFER (Retain original with samples)

1.	**Relinquished by:**	(Name)	(Organization)	(Date/Time)	**Received by:**	(Name)	(Organization)	(Date/Time)
2.	**Relinquished by:**	(Name)	(Organization)	(Date/Time)	**Received by:**	(Name)	(Organization)	(Date/Time)
3.	**Relinquished by:**	(Name)	(Organization)	(Date/Time)	**Received by:**	(Name)	(Organization)	(Date/Time)

Notes: _____

_____

ATTACHMENT E

REVISED CORRECTIVE ACTION PLAN

REVISED CORRECTIVE ACTION PLAN

Gulfport, Mississippi
Cavenham Forest Industries Inc.

May 5, 1995
(Revised May 10, 1996)

Prepared by:
Cavenham Forest Industries Inc.
Environmental Services Department

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1.0 INTRODUCTION

This Corrective Action Plan (CAP) has been prepared for the Cavenham Forest Industries Inc.
(Cavenham) site located in Gulfport, Mississippi. Plans are provided for an enhanced pump and treat corrective action of impacted groundwater in the vicinity of the closed RCRA units. Figure 1 is a vicinity map indicating the location of the site.

The Cavenham site was formerly used to produce treated wood products using the preservatives, creosote and pentachlorophenol. That process generated contaminated wastewater, which was managed in on-site surface impoundments. Wastes from the water treatment process at facilities which use these chemicals are a listed hazardous waste, K001 (MHWMR 40 CFR, Part 261), and are regulated by the Mississippi Department of Environmental Quality (MDEQ). All of the hazardous waste management units at this site are closed and Cavenham maintains and monitors the site in accordance with the Hazardous Waste Management Post-Closure Permit No. HW-88-961-01 (Permit). This Permit, which was issued on April 28, 1988, by the present MDEQ, authorizes Cavenham to conduct post-closure care and corrective action for groundwater contamination.

Section H.2 of the Permit, requires Cavenham to conduct corrective action measures until the groundwater protection standard has been met at all compliance point monitoring wells. Cavenham installed a system of wells for recovery and injection in 1990 and has been operating the system since January, 1991. Although that system effectively recovers the site groundwater, this CAP revision provides for additional remedial components, designed to accelerate the corrective action process.

1.1 Background

Provided below is a brief summary of the corrective action activities which have been conducted at this site subsequent to closure of the RCRA units:

- January, 1990 - Cavenham completed installation of approximately 3,500 linear feet of soil-bentonite cutoff wall around the former RCRA surface impoundment and process area.

- July, 1990 - Cavenham received approval of the November 28, 1989 addendum modification to the Corrective Action Plan requiring additional recovery wells, injection wells, and monitoring wells.

- July - December, 1990 - Bids were let for supplying and installing the various recovery-injection wells and treatment components of the Corrective Action Plan. Recovery and Injection well piping and protective sumps were installed. Nine (9) additional recovery wells were installed and eight (8) additional injection wells were installed. The fixed film biological treatment unit was constructed and activated.

- January - December, 1991 - Although selected pumping of recovery wells occurred during November and December of 1990, it was January 21, 1991 when all recovery wells were activated. During March and April of 1991, groundwater was characterized at the injection well locations. During May, 1991, injection of treated groundwater began at several well locations. No significant changes in operation occurred between May and December, 1991.

- January, 1992 - Present - Groundwater recovery, injection, monitoring and reporting activities have continued during this time period.

1.2 Objectives

The objective of this CAP is to develop a strategy plan which reduces groundwater contamination to concentrations that pose no threat to human health and the environment in the most cost effective manner. Specific objectives are:

- To control groundwater flow within and immediately surrounding the contaminant plume to further mitigate migration and to accelerate recovery;
- To immobilize contaminant sources to the extent possible and accelerate source removal;
- To recover the non-aqueous phase liquid which is present in the underlying soils and which is the source of the soluble contaminant plume; and
- To recover the soluble groundwater contaminants to concentrations that are either below the groundwater protection standard or to levels that pose no threat to human health and the environment.

The following sections present the site's physical characteristics, the extent of contamination, and corrective action strategy.

2.0 SITE CONDITIONS

The successful design and implementation of this CAP require a thorough understanding of existing site conditions. Extensive investigations at this site have defined the geology, hydrology and contaminant characteristics. A comprehensive data base, which currently includes four (4) years of CAP monitoring for the site, has been collected, reviewed and continuously supplemented and refined to provide criteria for the design.

Figure 2 is a site plan for the Gulfport site which shows the location of the closed RCRA units that are being remediated by this CAP. The map also shows other areas and wells

at the site which are being remediated under RCRA Hazardous and Solid Waste Amendments (HSWA) authority and not discussed in this plan.

Figure 3 presents the current site layout for the closed RCRA units with existing corrective action wells locations indicated. Table 1 provides a summary of the construction details for these wells and notes the function of each well.

2.1 Geology

Since the earliest soil borings and monitor wells were installed at this site, the geologic and hydrologic settings have been periodically refined as additional information has been added to the database. All available data to date have been reviewed in preparing this CAP revision.

Figure 4 depicts north to south and west to east geologic cross-sections through the site, with vertical and lateral changes in the types of sediments (stratification) delineated. This stratification consists of 5 basic, definable soil horizons. Each of these is discussed briefly below. Refer to the ***Final Report, Groundwater Quality Assessment Program, RCRA Regulated Units,*** June 28, 1985 (GWQA, 1985), prepared by the former owner, Crown Zellerbach Corporation, and the ***RCRA Facility Investigation (RFI) Addendum,*** November 16, 1992, for additional details on both the regional and local geology and hydrogeology.

The stratification of the various subsurface soil horizons encountered at the site, in depth descending order, have been locally defined as follows (Figure 4):

Horizon 1 (H1)- This unit is composed of clayey and silty topsoil and/or fill material which ranges in thickness from 2 to 5 feet.

Horizon 2 (H2) - This unit is composed of silty clay to clayey silt, and occasionally sandy clay. The thickness of this unit varies from approximately 2 to 37 feet and it is stratigraphically below H1.

Horizon 3 (H3) - This unit is composed of sand to silty sand and appears to be present as a continuous unit across the site. The thickness of this unit varies from approximately 2 to 35 feet. It locally contains intervening clay layers but is predominantly composed of coarser-grained soils. This horizon represents the uppermost water bearing zone beneath the facility. The hydraulic conductivity of this unit varies considerably; however, the average is approximately 2.3 ft/day. The majority of the monitor wells, and all recovery and injection wells at the site are screened in this horizon.

Horizon 4 (H4) - This unit is composed predominantly of an olive green marine clay layer with thin, lenticular silt-sand deposits and brown to dark gray, organic-rich soils. It forms an aquitard between H3 and the deeper aquifers which underlie the site. The thickness of this unit may be as much as 80 to 90 feet; however, in some areas of the site, a water bearing sand unit has been identified and designated Horizon 5. The top of H4 is defined as the first interval of dense (overconsolidated), green "marine" soil immediately encountered below the rather loose, buff to light gray, H3 aquifer interval. The top of this horizon represents a disconformable (erosional) surface. Generally all soil horizons below this disconformity exhibit green-gray to olive and green-blue colors; however, occurrences of brown to dark gray, organic rich, soils are noted to occur in portions of the H4 and next lower horizon.

Horizon 5 (H5) - A second water bearing zone has been encountered beneath the site at a depth of approximately 40 to 50 feet below land surface. Based upon data to date, this unit is as thick as 20 feet in some areas. Wells MW-7, MW-9, and MW-11 located to the southeast of the RCRA closure area, are completed in this aquifer. This unit appears to be a local sand unit within the H4 marine clay unit.

"100-Foot" Sand - The "100-foot" Sand is an artesian aquifer, whose top is encountered at approximately 100 feet below land surface. Only one well at the site, MW-6, is completed in this horizon.

During the preparation of this CAP the subsurface stratification has been further refined. In some areas of the site, H2 and H3 are noted to possess upper and lower hydrologic equivalents, i.e., each of these units has an upper and lower lens of granular sediment, separated by a local clay lens. In other areas, the upper and lower lenses coalesce and become either a single H2 or H3 unit. Where the distinctive lenses are identified, the "U" or "L" suffix nomenclature is used in this report (example: H2U is used for H2 "upper"). Identifying the occurrence of these lenses is important to the placement and selection of the screened intervals of the recovery, injection and air-sparging wells, as well as to the effectiveness of the infiltration trenches.

2.2 Hydrology

Horizon 3 (H3) is a silty, fine to medium sand that is generally continuous beneath the site. H3 is in direct hydraulic communication with the adjacent Harrison County Industrial Seaway to the north and Turkey Creek to the south. H3 is overlain by a silty clay to clayey silt layer, H2, and underlain by a stiff green clay, H4, which serves as an aquitard, hydraulically isolating H3 from the deeper aquifers. The H3 horizon is the uppermost water bearing zone at the site and the primary one impacted by the onsite contaminants and remediation.

Prior to implementation of corrective action, the net groundwater flow across the site in H3 was generally towards the east, northeast, and southeast (Figure 5). The net flow was toward the Harrison County Industrial Seaway and Turkey Creek, which are natural groundwater discharge points. The average horizontal hydraulic conductivity of H3 is 8 x 10^{-4} cm/sec. The average hydraulic gradient was 2.3 ft/day and the effective porosity is estimated to be 0.25. Calculations used to estimate the average linear groundwater velocity yielded a value of 33 ft/year (GWQA, 1985). Prior to closure and implementation of corrective actions, groundwater gradients and velocities in the vicinity of the former impoundment(s) were as much as twice the average value, i.e., 0.02 ft/ft and 66 ft/yr, respectively.

Figure 6 is a recent potentiometric contour map of the site which shows the present net flow of ground water outside of the cutoff wall in the H3 aquifer is essentially as described above, with hydraulic gradients ranging between 0.02 and 0.01 ft/ft, northeast

and southeast, respectively. However, inside the cutoff wall bounds, the flow of H3 ground water has been significantly altered and even reversed in the vicinity of the recovery and injection wells. Water levels in H3 have been lowered in the vicinity of the recovery wells to typical levels between 10-15 feet below static levels, with radii of influence ranging between 50 feet and 150 feet. Throughout the site, a total of 85 wells, inclusive of recovery, injection and monitoring, are screened in the upper portion (H3U), lower portion (H3L) or entirety of the H3 aquifer unit.

H5 is a deeper water bearing zone which consists of buff-green to green, fine, silty sand. This zone appears to be a persistent, but dissected and intermittent lense within the H4 Clay horizon. The top of the H5 sand lense is generally encountered at an elevation of about -35 to -40 feet NGVD, across the site. This corresponds to a typical depth below ground surface (bls) of about 40 to 50 feet, depending upon location and corresponding surface elevation. H5 is artesian, with flow gradient potential upward into H3. The vertically upward gradient is typically about 0.07 ft/ft. Three monitor wells are screened in the H5 aquifer, MW-7, MW-9, and MW-11. As indicated in Figure 6, these wells are located in the southeast extremity of the site, outside the bounds of this correction action area. H5 is in direct contact with H3 on the north side of the closed RCRA units where the H4 clay has been deeply eroded. In this area, the soil-bentonite cutoff wall was deepened to the next deeper portion of H4 clay to fully encapsulate the erosional "hole" in the shallower portion (northeast site).

The "100-foot" Sand is an artesian aquifer, whose top is encountered at approximately 100 feet bls. This sand exhibits an upward hydraulic flow potential to the H5 and H3 aquifers. The vertical (upward) hydraulic gradient is calculated to be about 0.07 ft/ft toward each of these shallower aquifers. Monitor well MW-6, located on the east side of the site (Figure 6), is screened in this aquifer. Well MW-6 typically flows at the surface above the top of casing elevation (5.7 ft NGVD).

2.3 Extent of Contamination

The extensive soil boring, well installation and CAP programs have produced a comprehensive geological, hydrological, and water quality data base which indicates the presence of wood treating constituents in the soil and groundwater. Within the scope of

this CAP, these results indicate the existence of two (2) principal subsurface contamination plumes in the form of: (1) nonaqueous phase liquids (NAPL) comprised of polynuclear aromatic hydrocarbons (PAH) and phenols, and (2) dissolved PAH and phenolic compounds.

The primary source of the subsurface contamination is believed to be the buried Vacuum Pond, the location of which was discovered during the ground water quality assessment and remedial investigations and confirmed by inspection of a 1920 plant plan. Other possible sources include the former RCRA Surface Impoundment and former underground drainage culverts in this area.

2.3.1 Extent of NAPL Plume

Qualitative and quantitative analyses of soil contamination were made during field investigations and confirmed or refined during the early (1991-1995) CAP monitoring. During the drilling and sampling of soil borings at this site, selected soil samples were evaluated as to the presence of the distinctive odor and/or visual observations of wood treating contaminants. Quantitative soil chemical data (Tables 7, 8 and 9; GWQA, June 28, 1985) illustrate that the contaminant concentrations are not distributed in a uniform manner and that movement of phased, suspended, or dissolved contaminants occurred along preferential pathways (discontinuities). The site-specific parameters, which are predominantly PAH and phenolic constituents, behave similarly in the soil environment, with low groundwater solubilities and strong affinities for organic-rich sediments.

Based on observations conducted during drilling and sampling, and recorded on the site soil boring logs, and generally confirmed by ground water and soil analyses, two NAPL contaminant plumes have been detected. These observations have been refined since the original presentation of the CAP, especially during the implementation of the RFI and during the logging of borings for well installations and monitoring activities associated with the implementation of the CAP. The present plume definitions are based upon analyses of all qualitative and analytical data accumulated to date and are as follows:

- The NAPL plume encompassing the Buried Vacuum Pond and the area of the closed RCRA surface impoundment;

- o The NAPL plume to the southeast in the area of the former Bath House.

The current estimate of the approximate boundaries of these plumes are illustrated in Figure 7. Typical vertical extents of the plumes are illustrated in Figure 8. Figure 9 provides contours of the groundwater oil and grease results for wells in this portion of the site. Definition and refinement of the plume extents have resulted in a slight plume enlargement in some areas and slight plume diminishment in others, as the result of a larger data base and analyses from remedial/corrective action and investigatory activities. These refinements are discussed and presented in the applicable reports, e.g., ***RCRA-Final Facility Investigation Field Report***-September 4, 1990; ***RCRA Facility Investigation Addendum Report***-November 16, 1992; and, the ***Semi-Annual Corrective Action Monitoring Reports***.

2.3.1.1 Buried Vacuum Pond and Closed RCRA Impoundment NAPL Plume

The Buried Vacuum Pond NAPL plume encompasses the area of the following recovery and injection wells: RW-1 through RW-4, RW-7, RW-8, DG-6A, and I-1, I-2, I-7 and I-8, respectively (Figure 7). The closed RCRA surface impoundment NAPL plume includes the area of the following recovery and injection wells: RW-5, RW-8, RW-9, RW-11, RW-13, and DW-2, I-3, I-4, I-5, and I-6, respectively. A detailed discussion of the extent of the soil contamination was presented in the GWQA (Section 5.2, June 28, 1985), the CAP, and RFI referenced previously.

2.3.1.2 Southeast-NAPL Plume Near The Former Bath House

The NAPL plume in the vicinity of the former Bath House encompasses the area of recovery wells RW-6 and RW-12 (Figure 7). The presence of a NAPL plume around the Bath House may be related to a former drainage culvert which extended from the southeast corner of the surface impoundment to the vicinity of RW-6 and southward. Again, a more detailed description of this plume is given in the referenced reports cited above.

2.3.2 Extent of Soluble Plume

The approximate extent of the ground water soluble plume is shown in Figures 7 and 9. The horizontal movement of this plume, like the NAPL plume, occurs primarily in H3. Over the 80 year period since plant operations began, the dissolved portion of the contaminant plume has migrated at an estimated rate of 5.7 ft/year. The direction of plume migration from the sources has been along groundwater flow lines. The boundary of this plume extends northeast to the Industrial Seaway near well RW-22, to Turkey Creek south of well RW-6, and recently has been detected at well PW-7, to the southwest, immediately outside the south limit of the soil-bentonite cutoff wall.

2.3.3 General Observations on Contamination

The NAPL plumes are presently serving as the primary source of the slightly more mobile soluble contaminant plume. The observed contaminants typically have relatively low water solubilities and relatively high transport retardation factors. Contaminants are being stripped from the NAPL plumes as groundwater comes in contact and flows past or through the NAPL plume. Recovery of the NAPL plume, combined with solidification and capping of the surface sources already completed, have constituted the first phase of groundwater remediation and is on-going. Additional desired actions and enhancements to the corrective action plan are presented in Section 3.0, below.

The observed 5.7 ft/yr rate of soluble contaminant migration agrees reasonably well with the observed groundwater velocities of between 40 ft/yr and 80 ft/yr in the RCRA Surface Impoundment area. Comparison of these rates yields retardation factors in the range of 7 to 16, which is typical for the more mobile K001 constituents. Reduction of the groundwater mounding, achieved by the solidification and capping of sources of recharge, along with cutoff wall installation, recovery and treatment operations have further reduced the rate of migration, and within the cutoff wall bounds, arrested it. A small isolated quantity (slug) of ground water dissolved constituents remain outside the closure to the southwest, near well PW-7, and further remediation measures are proposed in this area (Section 3.0). In other areas where contaminants are present outside the cutoff wall, the groundwater is being remediated under the HSWA authorization.

Accurate prediction or measurement of the true, past rate of the NAPL plume movement is tenuous at best. However, a reasonable estimate of the pre-CAP rate is determinable, from the plume's current extent, to be very low (less than 0.5 ft/yr), indicating a relatively stable boundary. It is believed that since solidification and capping of the sludges that served as the source, along with containment by the soil-bentonite cutoff wall, injection, and recovery, the outward migration of the NAPL plumes is nil. Rather, the plumes are moving predominantly toward the recovery wells, which are located near the sources and structurally downgradient to optimize recovery of dense NAPLs (DNAPL). Further discussions of recovery and corrective actions are given in Section 3.0 below.

3.0 CORRECTIVE ACTION SYSTEM

This plan proposes additional corrective action elements that when activated should expedite the cleanup of this site and maximize the efficiency of the site corrective actions. Once this plan is implemented, the groundwater remediation system for the Gulfport site will consist of the following components:

- o Soil-bentonite cutoff walls;
- o Groundwater recovery wells;
- o Injection wells;
- o Infiltration trenches;
- o Air sparging wells;
- o A Treatment System for recovered groundwater; and, a
- o Network of groundwater monitoring wells.

Each component of this corrective action system is described below. As corrective action is a dynamic process it is important to note that although this is the proposed system,

well functions may change at some later time in the corrective action process. For example, a proposed recovery well may become an injection well once it is no longer effective in removing NAPL.

3.1 Soil-Bentonite Cutoff Wall

Soil-bentonite cutoff walls were installed at the site during the Summer and Fall of 1989. As shown on Figure 3 these cutoff walls completely encompass the former RCRA facilities and former manufacturing area. The walls extend from ground surface to approximately three (3) feet into the H4 marine clay strata which underlies the site. These cutoff walls provide a physical barrier to prevent the off-site movement of the contaminated soil and groundwater contaminant plumes.

3.2 Groundwater Recovery System

The groundwater recovery system at the Gulfport facility will consist of a total of thirty-six (36) recovery wells. Of these, twenty-four (24) are existing wells, most of which are presently being used as recovery wells. Twelve (12) additional wells will be installed to supplement the existing recovery well network. Soil boring logs and well construction diagrams are provided in Appendix A. Table 1 provides a summary of well construction details and well function.

The existing wells have a minimum of 10 feet of screen and the average depth is about 35 feet. They are designated RC-1, RC-3 and RW-1 through RW-13. The locations of these wells are shown on Figure 3.

Seven (7) other existing wells, DG-6A, I-2, I-4, I-5, I-6, I-7, I-9 (DW-1) have been converted to recovery wells. Wells RC-2 and PW-7 will also be utilized as recovery wells. Figure 3 shows the locations of these wells.

The recovery system will be enhanced by adding twelve (12) new wells. The locations for the additional twelve (12) recovery wells are shown on Figure 10, along with locations of existing wells. These additional recovery wells will be numbered as they are

installed. The first well will be numbered RW-26. Note that well numbers RW-14 through RW-25 are existing HSWA well locations (See Figure 6.) Three (3) of the new wells will penetrate the RCRA closure cap through either existing or additional liner access penetrations. The remainder of the wells are located in areas of known or suspected elevated contaminants. The locations were selected based on combinations of the following criteria:

- The known occurrence of NAPL.
- The structural position or elevation of the base of the H3 sand aquifer. Structurally low areas are desirable, in combination with the other factors, since recovery of dense non-aqueous phase liquid (DNAPL) is required.
- The development of the H3 sand aquifer. Thick, well developed sand areas are desirable in combination with the other variables; refer to Figure 4 for stratigraphic and hydrogeologic subsurface nomenclature and definition.
- The proximity to and/or screened interval of other nearby wells.
- The accessibility of the location. Buildings, concrete slabs and other similar manmade features may preclude locating/wells in certain areas.
- The groundwater concentration of oil and grease. Oil and grease concentrations are utilized to provide a quantitative estimate of the groundwater contaminant concentration and the ground water plume configuration.

The three (3) wells which penetrate the RCRA closure cap will allow for some level of remediation of the waste contained within and beneath the closure. Additionally, installing these wells immediately below one of the major contaminant sources will provide a means to collect contaminants that may have been released in the past and/or, are currently being released. This closed unit does not have a bottom liner of synthetic material, thus DNAPL and soluble constituents may be migrating laterally and downward through the natural soil liner. If contaminants are not being released from this unit, the wells will be utilized to maintain a depressed water table in this area.

Construction of the new wells will be similar to the existing recovery wells. Figure 11 provides a schematic for a typical recovery well. Figure 12 provides a detail showing the penetration through the liner of the closed surface impoundment. All new recovery wells will be constructed of four (4) inch diameter stainless steel with appropriate lengths of #10-#15 (0.010-0.015 inch) slotted screen. Each recovery will be fitted with a pneumatic ejector pump with a dedicated controller unit, similar to the existing wells. The pump controller is capable of controlling the groundwater recovery rate by either controlling the time the pump is on or by controlling the level of water within the well. Wells are generally individually piped to the water treatment area. In some cases the lines are shared by multiple wells.

3.3 Injection Well System

The injection well system for the Gulfport facility will consist of a system of a fourteen (14) injection wells. Of these, four (4) are existing shallow injection wells which were installed at the site in 1990. The remain ten (10) injection wells will be installed subsequent to plan approval. Injection wells are utilized to increase the local groundwater velocities and enhance shallow "flushing" within the upper recovery zone, thereby increasing the efficiency of the recovery system. The return of treated water into the aquifer also reduces the volume of off-site discharge to the environment. The injection water has trace quantities of nutrients from the water treatment system and is generally at saturation with respect to oxygen. These nutrients supply electron receptors to the local subsurface microorganisms which are able to utilize them along with the contaminants that are present as a food source. In the future, and subsequent to bench scale and possibly pilot studies, these and other wells may be used as injection points for surfactants, micro-bubble remediation foams, or air to accelerate the remediation process.

The active injection wells are I-1, I-3, I-8, and I-10 (DW-2). The locations of these wells are shown on Figure 3. Soil boring logs and well construction diagrams for all wells are provided in Appendix A.

As shown on Figure 10, implementation of this plan will add ten (10) injection wells to the existing system. The increase in volume and area of treated injected groundwater

will facilitate contaminant mobilization and flushing of the entire H3 aquifer and intervening soils. Each injection well will be screened across the entire H3 aquifer and any intervening H2L clay or silt lenses. It is proposed that these wells be 3-4 feet in diameter and consist of 1-2 feet diameter, perforated, HDPE or PVC pipe with sand and/or gravel filter pack. The wells will be numbered, as installed, I-11 through I-20.

The criteria for locating the additional injection wells, are as follow:

- The development of the H3 sand aquifer. Thick, well developed sand areas are desirable in combination with the other variables; refer to Figure 4 for stratigraphic and hydrogeologic subsurface nomenclature and definition.

- The perimeter areas of groundwater contaminant occurrence. These areas should be of practical proximity to the existing or proposed recovery wells.

- Areas between the infiltration trenches to complement the hydraulic gradient.

Figure 11 depicts a typical injection well configuration.

3.4 Infiltration Trenches

The infiltration trench system will consist of six (6) trenches. Proposed locations of the six (6) infiltration trenches are shown on Figure 10. These trenches will serve much like injection wells in flushing contaminants to recovery wells and introducing oxygen and nutrients to the soil horizons to encourage the in situ biodegradation of contaminants by resident microorganisms.

As indicated by the H3 potentiometric map (Figure 6), over a large portion of the site, it is quite common not to encounter significant quantities of groundwater in the upper 20 feet of the subsurface, even when the H3U lens is present. This condition (vadose), should enable the infiltration of large quantities of recovered and treated groundwater.

As evidenced by previous borings and test pits, there are areas of significant, shallow H1, H2U, H2L, and H3U residual contamination which should be subject to flushing via the infiltration trenches and injection wells, and recovery via the recovery wells. An attempt was made to locate the infiltration trenches in these primary areas and also satisfy the other specified criteria as cited below.

The design of the infiltration trenches are based on a combination of the following desirable criteria. These trenches are located around the perimeter of the contaminant plume where the soils are expected to be clean or have relatively low contaminant concentrations.

- The occurrence of relatively "shallow" contamination in vadose and or low water level areas. Trenches will either flush the contaminants in these areas to recovery wells and/or the nutrient-rich waters will augment in situ bioremediation.

- The occurrence of the H3 aquifer, shallow upper sand "split" (H3U), and proximity to the main (lower) H3 sand body.

- Accessibility. The presence of existing concrete slab obstructions was considered.

The trenches will be installed to a nominal depth of fifteen feet, be approximately 2-3 feet wide, approximately 100 feet in length, and consist of sand and gravel backfill around 3-4 inch diameter plastic drainage pipe (PVC or HDPE), appropriately perforated or slotted. Trenches will be numbered, as installed, IT-1 through IT-6. Figure 11 depicts a typical infiltration trench configuration and relationship to other CAP components.

3.5 Air Sparging Well Points

Seventy-six (76) air sparging well points will be utilized to provide aeration (oxygenation) of the subsurface H3 aquifer. The introduction of small air bubbles into the aquifer should increase in situ bioremediation rates, which are often limited by the

amount of oxygen present. Additionally, this aeration may aid in the mobilization of the heavier (NAPL) portions of the plume and NAPL residuals. Inter- and intraformational pore pressure increases will be accommodated by decreased pressures resulting from nearby recovery well operations within the plume proper.

The primary criterium for addition of air sparging well points is to achieve maximum area of coverage. The intent is to provide a somewhat large, uniform areal distribution in those areas considered possible to install them.

The air sparging well points will be installed by driving or pushing stainless steel well points to as close to the base of the H3 (sand) aquifer as possible. The well points will typically be between 1 and 2 inches in diameter and have a limited air diffuser (slotted or perforated) length of no more than approximately five feet, located at the bottom. The upper 5 to 15 feet of the well annulus will be sealed with bentonite pellets or bentonite grout. Air sparging wells will be numbered, as installed, AS-1 through AS-76. A typical air sparging well schematic is shown in Figure 11. Figure 10 exhibits the locations of the air sparging wells.

3.6 Recovered Groundwater Treatment System

The recovered groundwater treatment system treats the groundwater which is produced by the recovery wells. It also treats any rainwater that falls into the bermed treatment area or into the open treatment tanks. The system uses the "treatment train" approach to remove the hazardous constituent from the groundwater. Water that is returned to the aquifer via injection wells and infiltration trenches undergoes the first three (3) steps of the treatment process. Water that is discharged via NPDES Permit MS0044580 undergoes an additional treatment step. Each step of the treatment process is briefly described below. Figure 13 is a flow schematic for the treatment system at this facility.

The initial treatment for the recovered groundwater consists of oil-water separation. The process uses an "API-type" gravity separator that is designed with baffels to remove both floating (light) and sinking (dense) oils. The final stages of this treatment step uses high surface area coalescing units to remove the smaller oil particles.

The effluent from the oil-water separation unit is split equally into two (2) streams for input into the biological treatment unit. The biological treatment unit consists of two (2) parallel sets of five (5) fixed film biological treatment reactors, with the water being recombined in a final treatment reactor. Each reactor utilizes high surface area growth media, a small quantity of nutrients, and oxygen to maintain a community of microorganisms that are capable of using the hazardous constituents associated with the groundwater as a food source.

The treated effluent from the fixed film biological treatment unit flows into a biomass accumulator to remove suspended solids and is then further polished in a "rock-reed" treatment unit. The "rock-reed" treatment unit uses a combination of aerobic and anaerobic treatment cells and simulates a natural marsh environment. The effluent from this unit is either oxygenated and returned to the aquifer via the injection wells and infiltration trenches or transferred to the activated carbon unit for additional treatment.

Due to the present treatment levels that are required for water that is discharged via NPDES, the effluent from the rock-reed treatment unit is processed through activated carbon. The unit consists of three (3) series connected units, each containing 20,000 lbs. of activated carbon. The effluent from this unit passes through an aeration tank to increase the dissolved oxygen prior to being discharged to the Harrison County Industrial Seaway.

3.7 Corrective Action Monitoring System

Routine corrective action monitoring at the Gulfport site is essential for documenting the progress of the corrective action, documenting the quality of the groundwater beneath the site, and for demonstrating the efficiency of the recovered groundwater treatment system.

The corrective action monitoring system utilizes groundwater monitoring wells designated as compliance monitoring wells, effectiveness monitoring wells, and boundary control wells to document changes in groundwater quality. Routine monitoring of the recovery well effluent and the treatment system effluent is also performed to evaluate the treating efficiency of the water treatment system and to document the quality of water that is returned to the aquifer via injection wells. There are three (3) compliance monitoring

wells utilized for this monitoring, RC-1 through RC-3; five (5) effectiveness monitoring wells, DG-2, DG-6A, RW-3, RW-7 and RW-10; and four (4) boundary control wells, PW-3, PW-7S, PW-7W and PW-8, utilized for monitoring the CAP activities. Additionally, all recovery wells are monitored. The locations of these wells are shown in Figure 2.

Table 2 is a summary of monitoring information for corrective action monitoring at this facility. The effectiveness of the corrective action will be tracked by monitoring the indicator parameter oil and grease. This parameter is a good indicator for changes in the NAPL plume and can be contoured for semiannual reporting. The compliance monitoring wells and effectiveness monitoring wells will be monitored for some of the specific compounds which make up the oil and grease component. These analyses will characterize the oil and grease contaminants at selected locations within the plume.

The water level in all of the monitoring wells at the site will be determined quarterly to document effectiveness of the recovery system. Semiannually, this data will be used to create potentiometric maps of the impacted water bearing zone.

Total flow measurements of the combined recovery well effluent and the combined injection well and infiltration trench influent will be recorded on a monthly basis. Manifests for off site shipments of NAPL will be used to estimate the quantity of oil that is recovered from the treatment system.

The results from the routine monitoring conducted at this facility are submitted in semiannual corrective action monitoring reports, due on January 14 and July 14 of each year.

4.0 MANAGEMENT OF CONTAMINATED MEDIA

During the installation of the additional recovery, injection and air sparging wells, and infiltration trenches, there is a likelihood that contaminated media will be encountered, which contains hazardous constituents associated with the former processes, or from de minimus losses during the 80 plus years of operation. Plans are included for the management of this material.

Cavenham is proposing to install recovery wells and air sparging well points through the cap of the closed RCRA landfill and into and below the solidified K001 waste contained therein. All drilling residuals recovered from these well installations will be treated as K001 waste material. This material will be drummed and sent to an off site TSD facility for disposal via incineration. Samples will be collected during the advancement of the borings for analysis to determine the feasibility of in situ biological treatment of the waste contained within the landfill. These materials will be analyzed to determine waste characteristics, indigenous microorganism concentrations, oxygen respiration rates, pH, permeability (air), etc.

Contaminated soils may be encountered during the installation of the additional components of the corrective action system. For example, the new recovery wells are sited to remove DNAPL residing in the uppermost water bearing zone. Cavenham plans to minimize the generation of this material as follows:

- Infiltration trenches will be located near the outer boundary of the plume, in areas which most likely have not been impacted by the former manufacturing operations.

- Air sparging wells will be installed by drilling small diameter pilot holes to the water table and then driving the well casings with screens into these holes.

Excavated soil will be tested to determine if the constituents of concern exceed risk-based action levels. These risk-based action levels are currently being developed and will be submitted as a separate document. Excavated soils that exceed the action levels will be treated on-site using biological treatment techniques until they are below the action levels. Treatment will occur in a Corrective Action Management Unit (CAMU) which is described in a separate document. Excavated soils that exhibit constituent concentrations below the action levels will be used as soil fill in the respective excavation area. The following testing schedule is provided to document that the excavated soils do not exceed action levels:

Infiltration Trenches	2 samples for each 50 ft of trench
Well Installations	2 samples per well

The goal of the sampling will be to demonstrate that the soils used as backfill meet the standards described above; therefore, samples will not be collected from obviously contaminated well locations. Obviously contaminated materials will be stockpiled in the CAMU for on-site treatment. Only material that passes the testing process will be used for on-site fill.

Due to the potential for generating large volumes of contaminated soil during the installation of the infiltration trenches, progress will be monitored by on-site personnel and soil samples will be analyzed according to the above schedule. The alignment or length of the trenches may be altered based on the findings.

All samples will be analyzed for the risk-based action level constituents using methods described in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986.

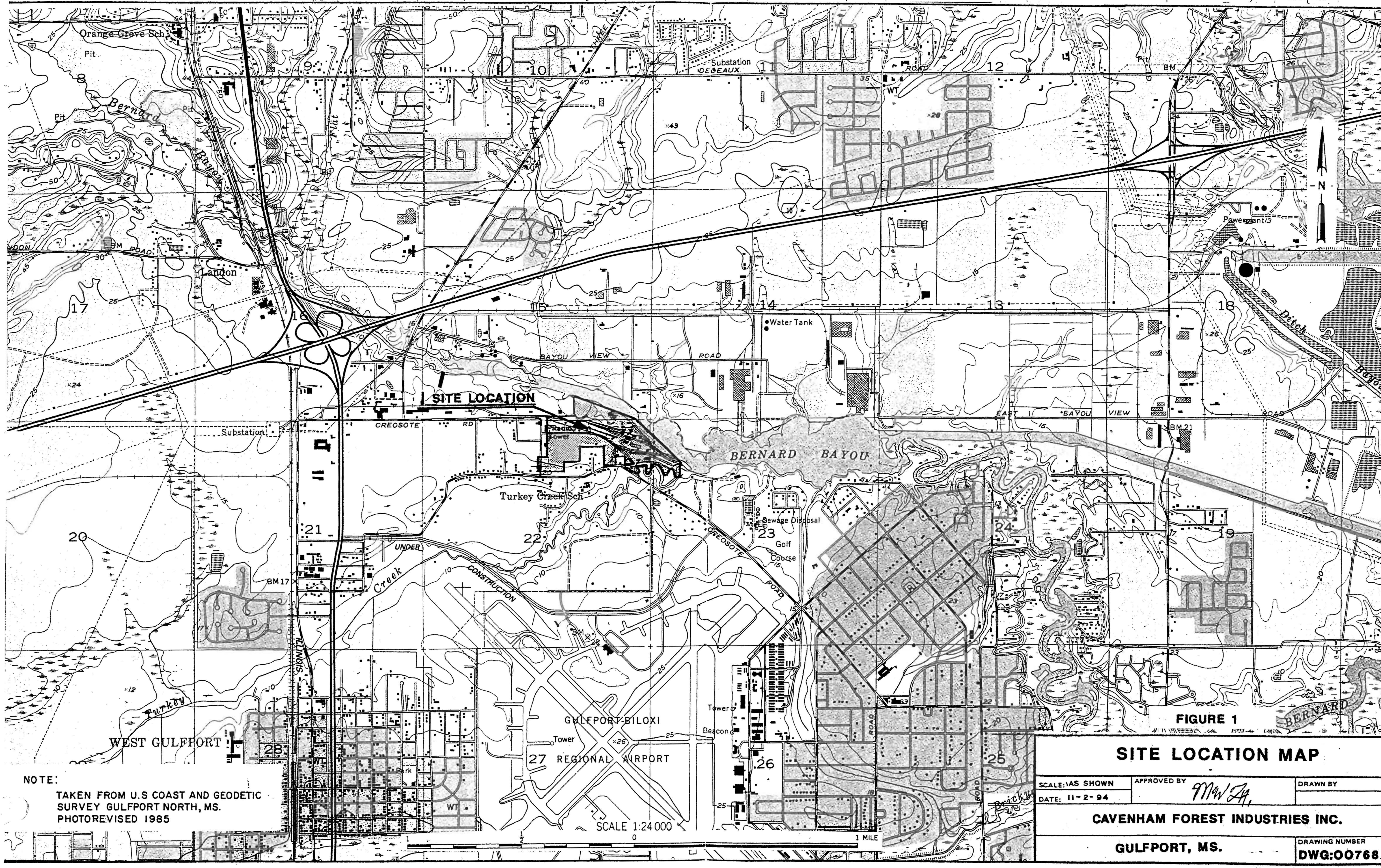
5.0 SUMMARY

Cavenham proposes to increase the rates of recovery, treatment, injection and discharge of recovered groundwater at its closed Gulfport RCRA facility. This will be accomplished by adding 12 new recovery wells, converting one monitor well to a recovery well, adding 10 new injection wells, adding 6 new infiltration trenches, each approximately 100 feet long, and adding 76 air sparging well points. Drawings are provided which show the locations and conceptual design of the additional remedial components. Due to the presence of unforeseen conditions, a given well(s) location may be field adjusted or be deleted from this plan upon implementation.

The implementation of the proposed methodologies will provide a more effective system for the remediation of the ground water contamination plume. It is believed that greatly accelerated recovery of NAPLs will be realized through the implementation of this corrective action plan. The effective areas of drawdown and well influence will be

increased, further accelerating recovery quality and rate. Groundwater will be recovered and treated over a more complete depth interval at the site, and much more efficiently. In addition, stimulation of subsurface aerobic microbial activity will be effected through the addition and circulation of nutrients and oxygen into the shallow and deeper subsurface.

FIGURES



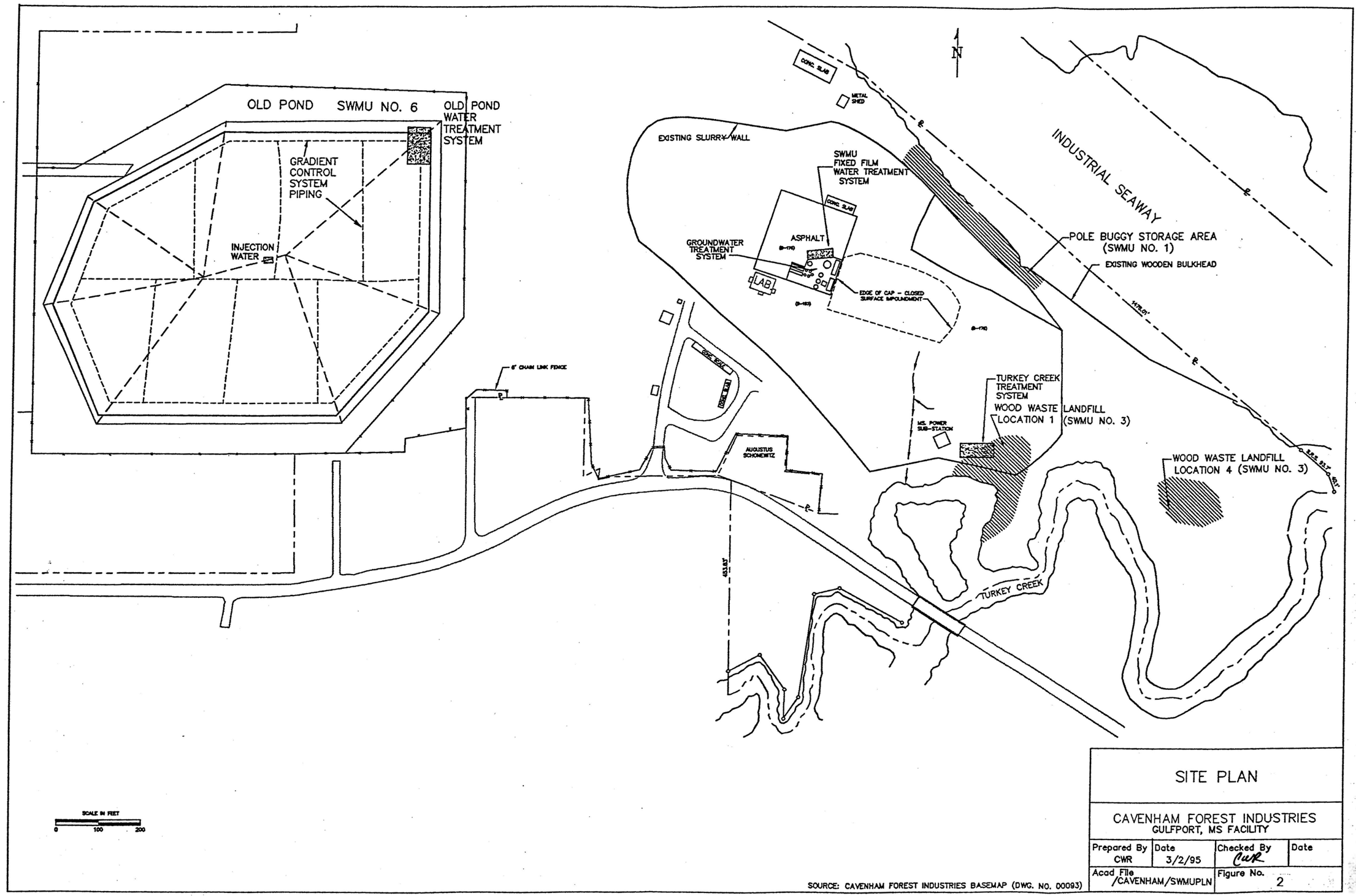
NOTE:
TAKEN FROM U.S COAST AND GEODETIC SURVEY GULFPORT NORTH, MS. PHOTOREVISED 1985

FIGURE 1

SITE LOCATION MAP

SCALE: AS SHOWN DATE: 11-2-94	APPROVED BY [signature]	DRAWN BY
CAVENHAM FOREST INDUSTRIES INC.		
GULFPORT, MS.		DRAWING NUMBER DWG:00768

(Revised 1994)

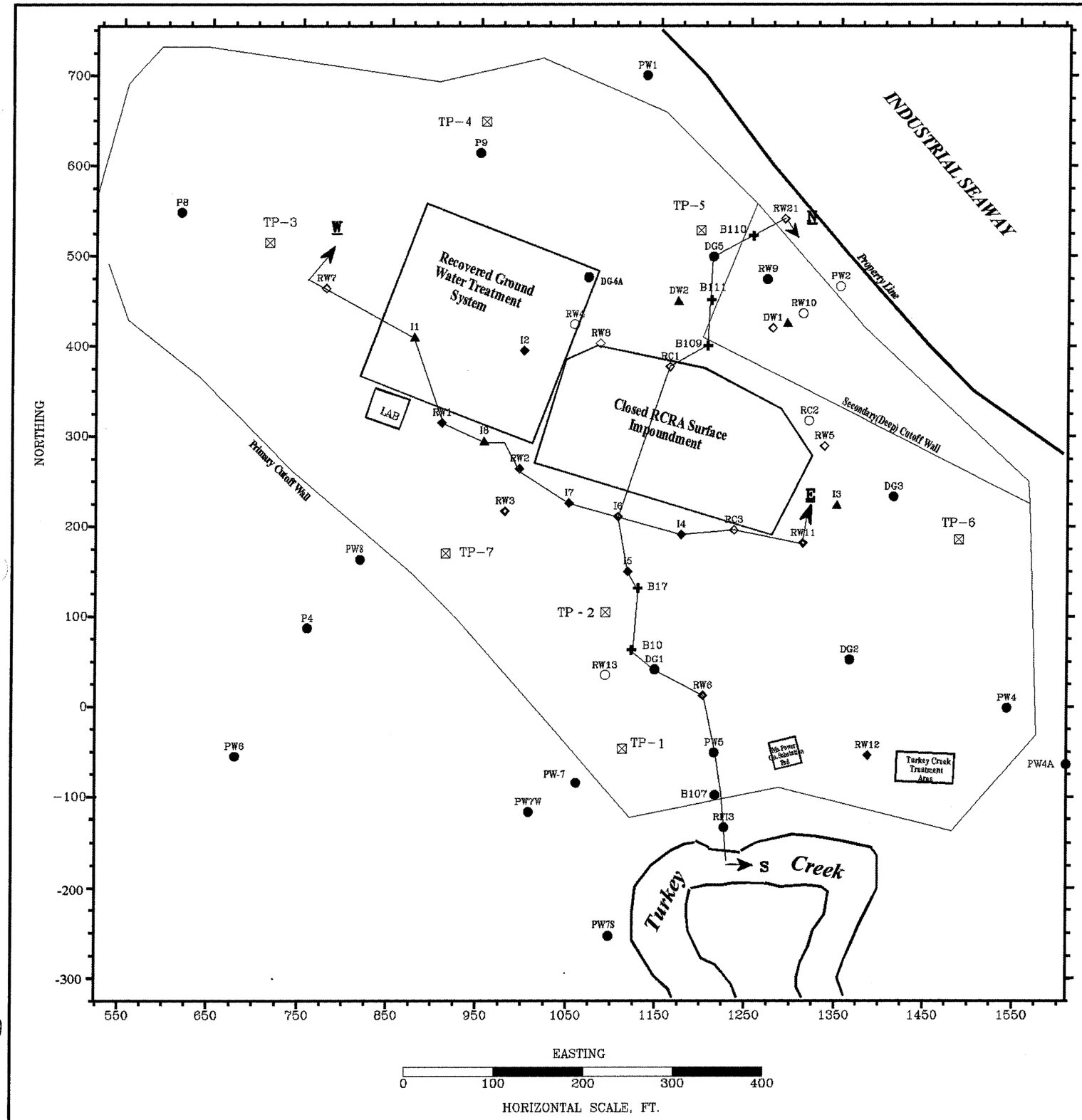


SOURCE: CAVENHAM FOREST INDUSTRIES BASEMAP (DWG. NO. 00093)

SITE PLAN

CAVENHAM FOREST INDUSTRIES
GULFPORT, MS FACILITY

Prepared By	Date	Checked By	Date
CWR	3/2/95	CWR	
Acad File /CAVENHAM/SWMUPLN		Figure No. 2	



LEGEND

- RECOVERY WELL QUALITATIVE INDICATION OF NAPL PRODUCTION (SHOWN FROM MOST TO LEAST CONTAMINATED, TOP TO BOTTOM.)
- TEST PITS
- INJECTION WELL
- OTHER WELLS
- BORINGS USED ON CROSS-SECTIONS
- CROSS-SECTION LINES & DIRECTION OF VIEW.
- W, E, N & S — CROSS-SECTION ENDS & COMPASS POINT DIRECTIONS

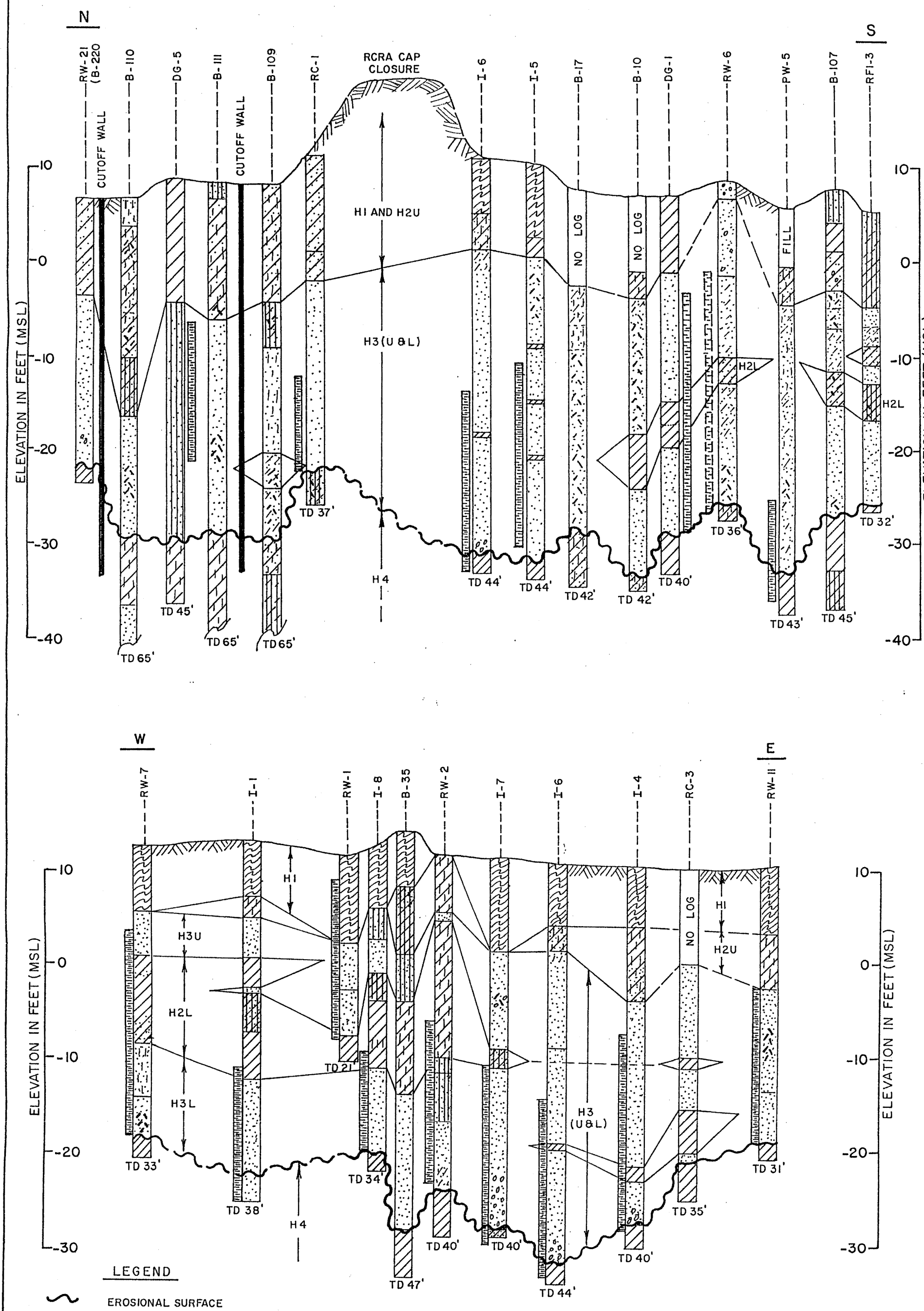
Figure 3

RCRA Plan With Existing Well Locations and Cross-Section Lines

Scale as shown	Chkd by:	Drawn by: J. Webb, P.G.
Date: 04/05/95		

CAVENHAM FOREST INDUSTRIES INC.

Gulfport, Mississippi Closed RCRA Facility



LEGEND

- EROSIONAL SURFACE
- FILL
- SAND
- SILT
- CLAY
- GRAVEL
- DECAYED ORGANICS, WOOD, ETC.
- WELL SCREEN (TOP OF SAND PACK)

HI, ETC. STRATA DESIGNATIONS
U = UPPER SPLIT
L = LOWER SPLIT

0 100'
HORIZONTAL

NOTE: SEE FIGURE I FOR CROSS-SECTIONS LOCATION

FIGURE 4

N-S AND W-E GEOLOGIC CROSS-SECTIONS

SCALE:	APPROVED BY cwp	DRAWN BY YM
DATE: 11-10-94		

CAVENHAM FOREST INDUSTRIES INC.

GULFPORT, MS.

DRAWING NUMBER DWG:01049

CHECKED BY	AJ Lan	8-7-87	DRAWING NO. L0913GP7-B5
APPROVED BY	JMC	P-7-87	REVISED G.R.M. 8-5-87
DRAWN BY			
DATE			

HARRISON COUNTY DEVELOPMENT COMMISSION PARCEL 1
UNDEVELOPED WOODED AREA

GULFPORT HYDRO-CARBIDE CORP
INDUSTRIAL

COAST MATERIALS
INDUSTRIAL

ABANDONED WELL

HARRISON COUNTY

POLE LOADING DOCK

McDERMOTT CO INC
INDUSTRIAL

INDUSTRIAL

POLE STORAGE

COMMERCIAL

PLANT ROAD

C.L. HEADQUARTERS

OLD POND

WOODED AREA

RESIDENTIAL

SEAWAY

POLE STORAGE

TURKEY CREEK

WOODED AREA

RESIDENTIAL

COMMERCIAL

TO GPT. OF GULFPORT SEWAGE TREATMENT PLANT

C E NATCO
INDUSTRIAL

ALL WEATHER WIND ROSE

MAY 18, 1983

EXPLANATION

- WATER WELL
- FIRE HOUSE
- FIRE PUMP, HOUSE & GEN. HOUSE
- CONTOUR LINE, 2' INTERVAL, MSL DATUM
- DRAINAGE DITCH
- CULVERT PIPE
- 1 — GROUND WATER ELEVATION IN FEET MSL
- PW 6 — MONITOR WELL LOCATION & NUMBER
- 3.25 — GROUND WATER ELEVATION (FEET MSL)

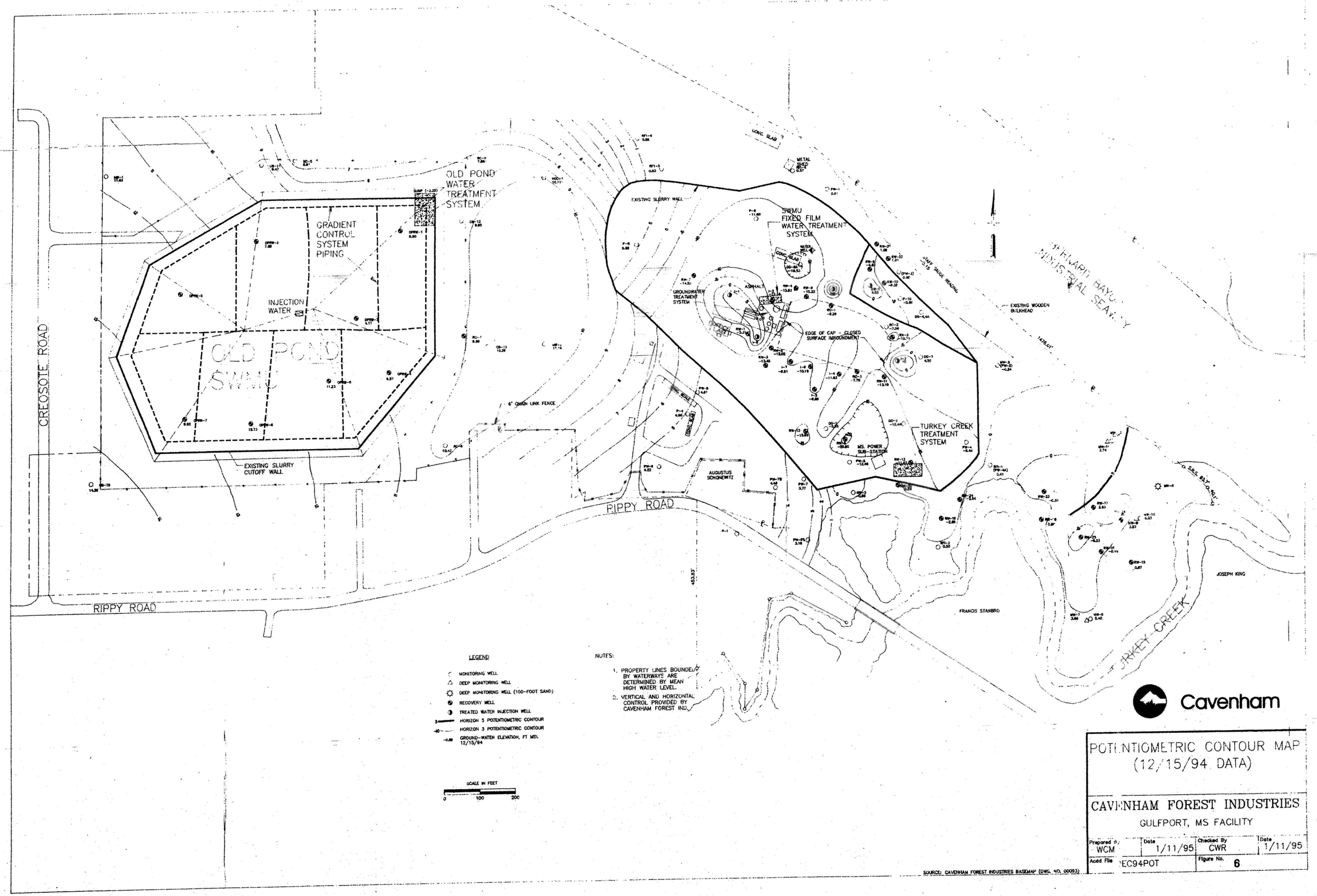
HAZARDOUS WASTE MATERIALS MAP

FIGURE 5

POTENTIOMETRIC CONTOUR MAP

CAVENHAM FOREST
INDUSTRIES INC.
TREATED WOOD
PRODUCTS DIVISION
GULFPORT, MISSISSIPPI

GERAGHTY & MILLER, INC.
Ground-Water Consultants



LEGEND

- MONITORING WELL
- DEEP MONITORING WELL
- DEEP MONITORING WELL (100-FOOT SAND)
- RECOVERY WELL
- TREATED WATER INJECTION WELL
- 5 HORIZON 5 POTENTIOMETRIC CONTOUR
- -40 HORIZON 3 POTENTIOMETRIC CONTOUR
- -0.89 GROUND-WATER ELEVATION, FT MSL 12/15/94

SCALE IN FEET

0 100 200

NOTES:

1. PROPERTY LINES BOUNDED BY WATERWAYS ARE DETERMINED BY MEAN HIGH WATER LEVEL.
2. VERTICAL AND HORIZONTAL CONTROL PROVIDED BY CAVENHAM FOREST IND.

SOURCE: CAVENHAM FOREST INDUSTRIES BASEMAP (DWG. NO. 00093)

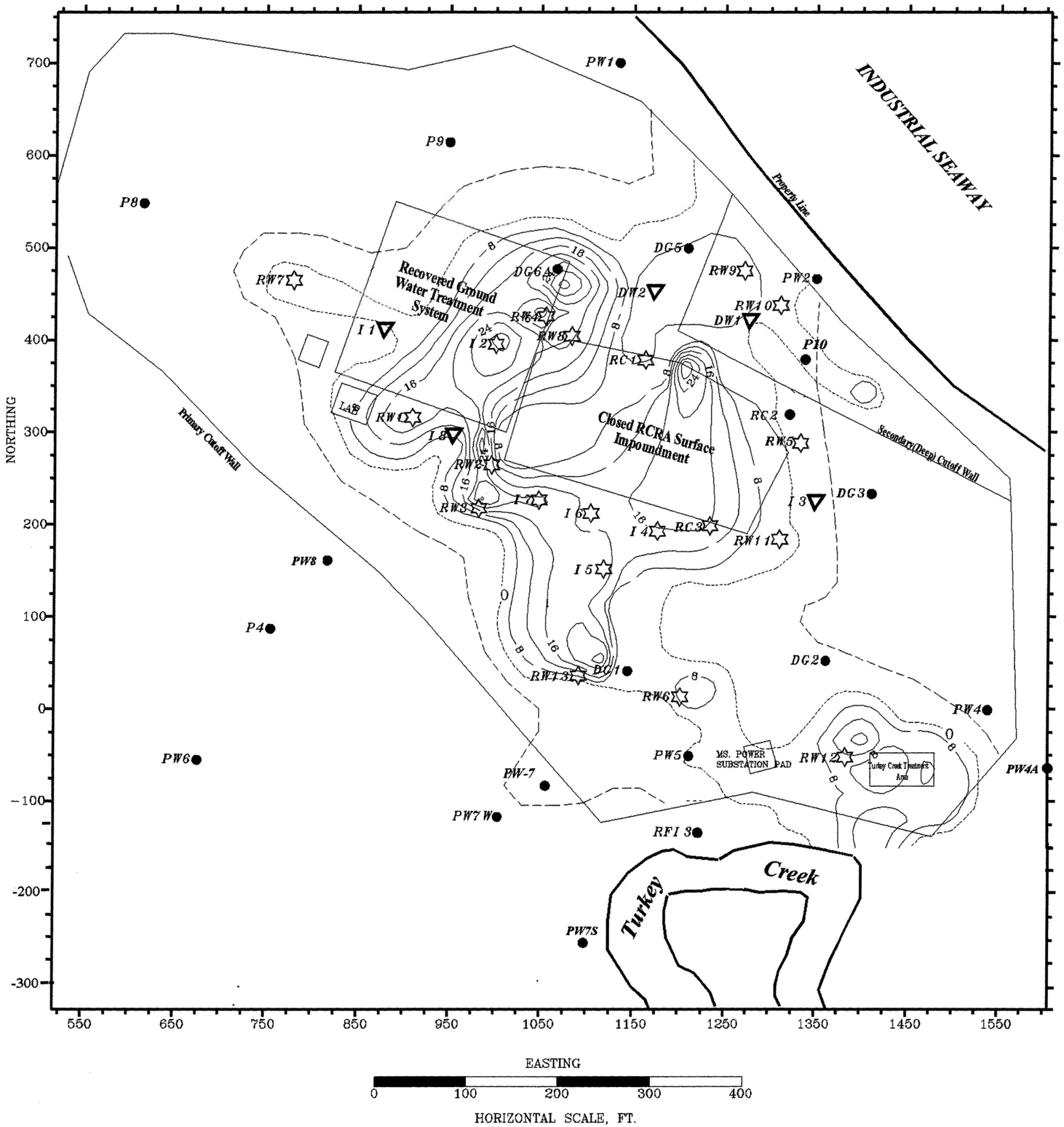
Cavenham

POTENTIOMETRIC CONTOUR MAP (12/15/94 DATA)

CAVENHAM FOREST INDUSTRIES

GULFPORT, MS FACILITY

Prepared By	Date	Checked By	Date
WCM	1/11/95	CWR	1/11/95
Acad File	EC94POT	Figure No.	6



LEGEND

PRESENT CORRECTIVE ACTION WELLS

- INJECTION WELL
- RECOVERY WELL
- TEST PIT
- OTHER WELLS
- OTHER BORINGS LYING ON CROSS-SECTIONS
- 8, etc. PRECORRECTIVE ACTION CONTOURS OF VISUAL THICKNESS, FEET
- APPROXIMATE 'ZERO' EDGE OF VISUAL PLUME
- **Approximate Ground Water Dissolved Plume Extents**

Figure 7

Soil(Visual) and Ground Water Plume Areal Extents

SCALE AS SHOWN	APPROVED BY	DRAWN BY J.WEBB, P.G.
04/05/94	CAR	

CAVENHAM FOREST INDUSTRIES INC.

Gulfport, Mississippi — DRAWING NUMBER

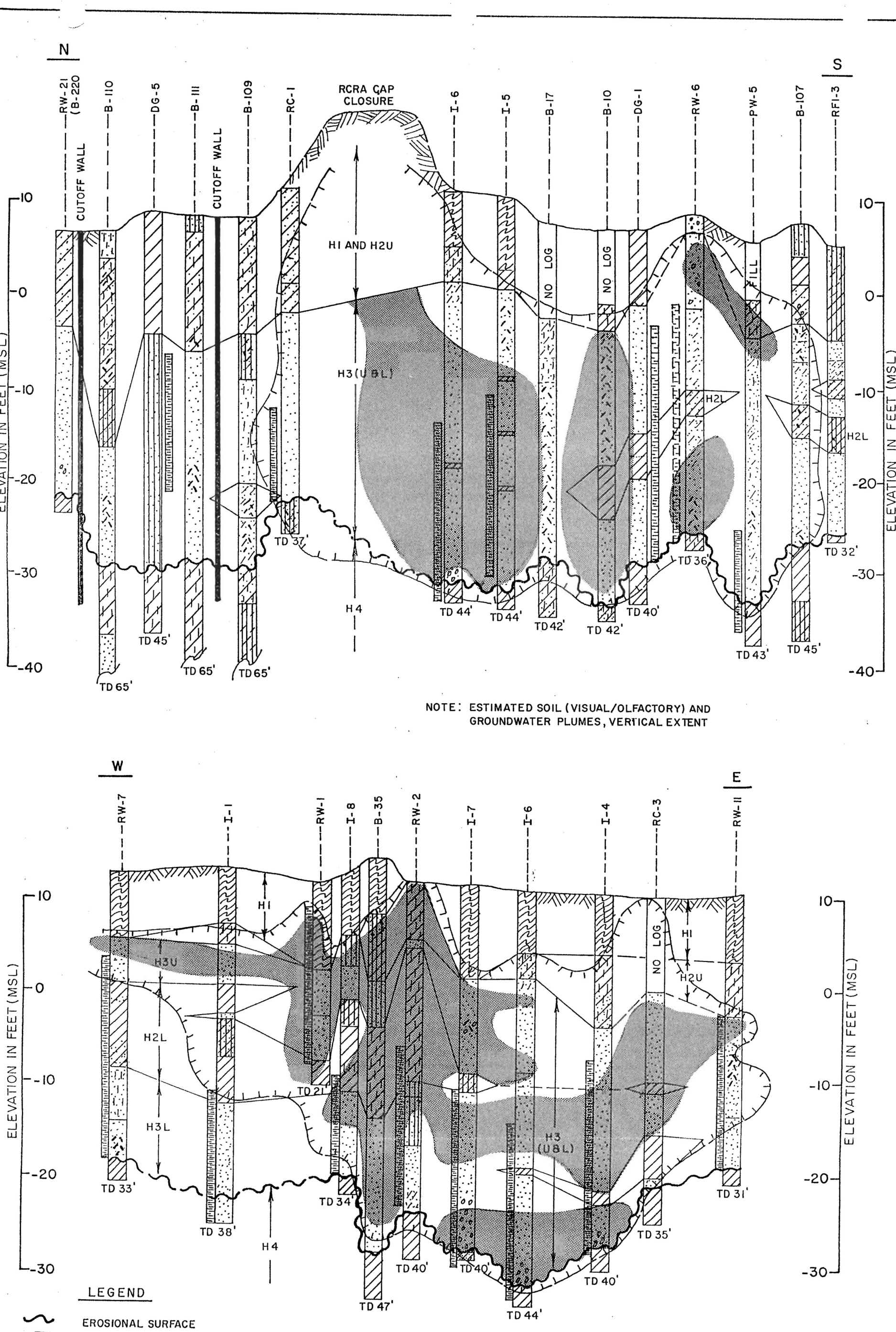
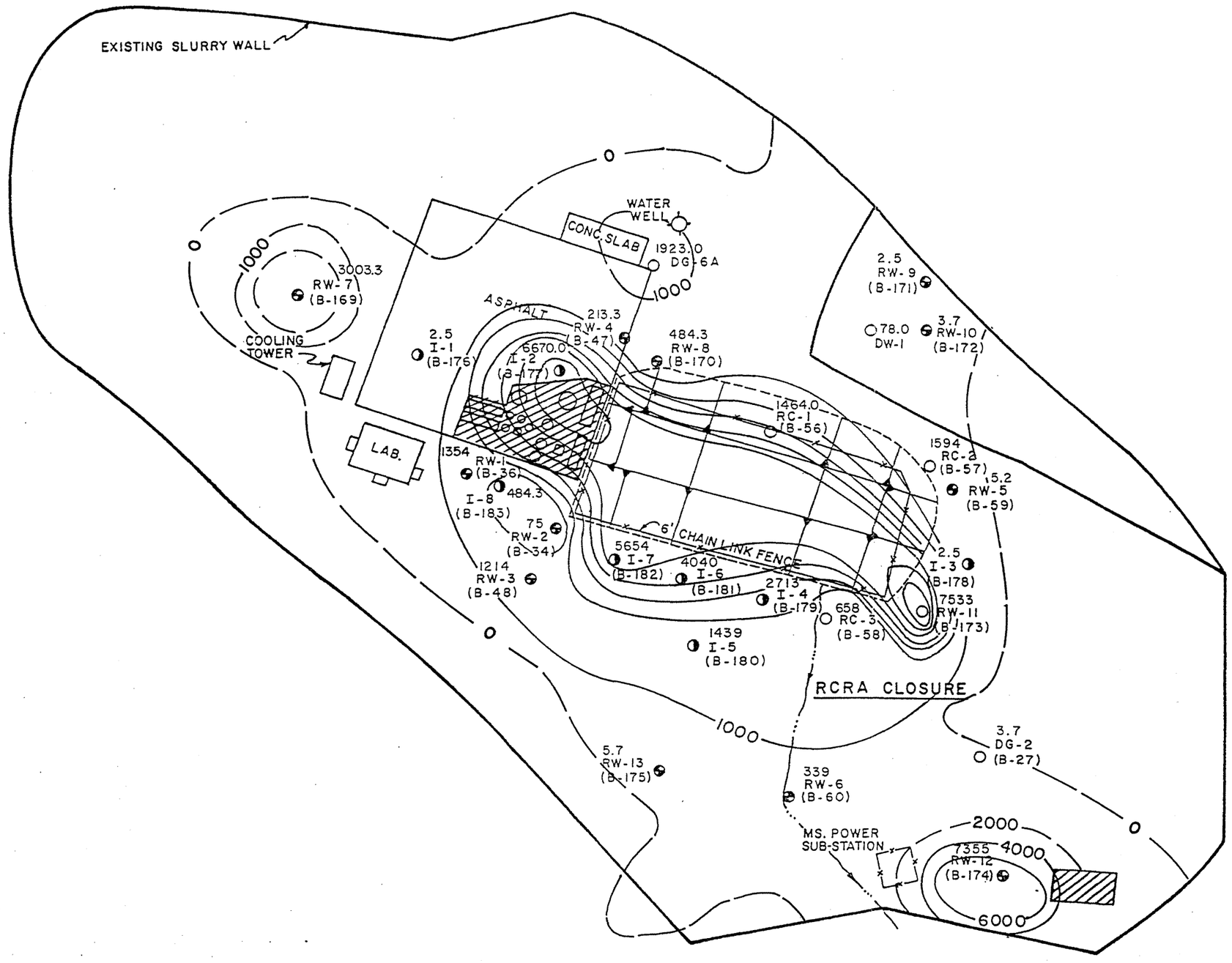


FIGURE 8

VERTICAL VISUAL PLUME EXTENTS		
SCALE:	APPROVED BY Carl	DRAWN BY YM
DATE: 3-8-95		
CAVENHAM FOREST INDUSTRIES INC.		
GULFPORT, MS		DRAWING NUMBER



N

NOTE: THIS PLUME CLOSELY APPROXIMATES CONFIGURATION/EXTENTS OF H-3 GROUNDWATER DISSOLVED PLUME.

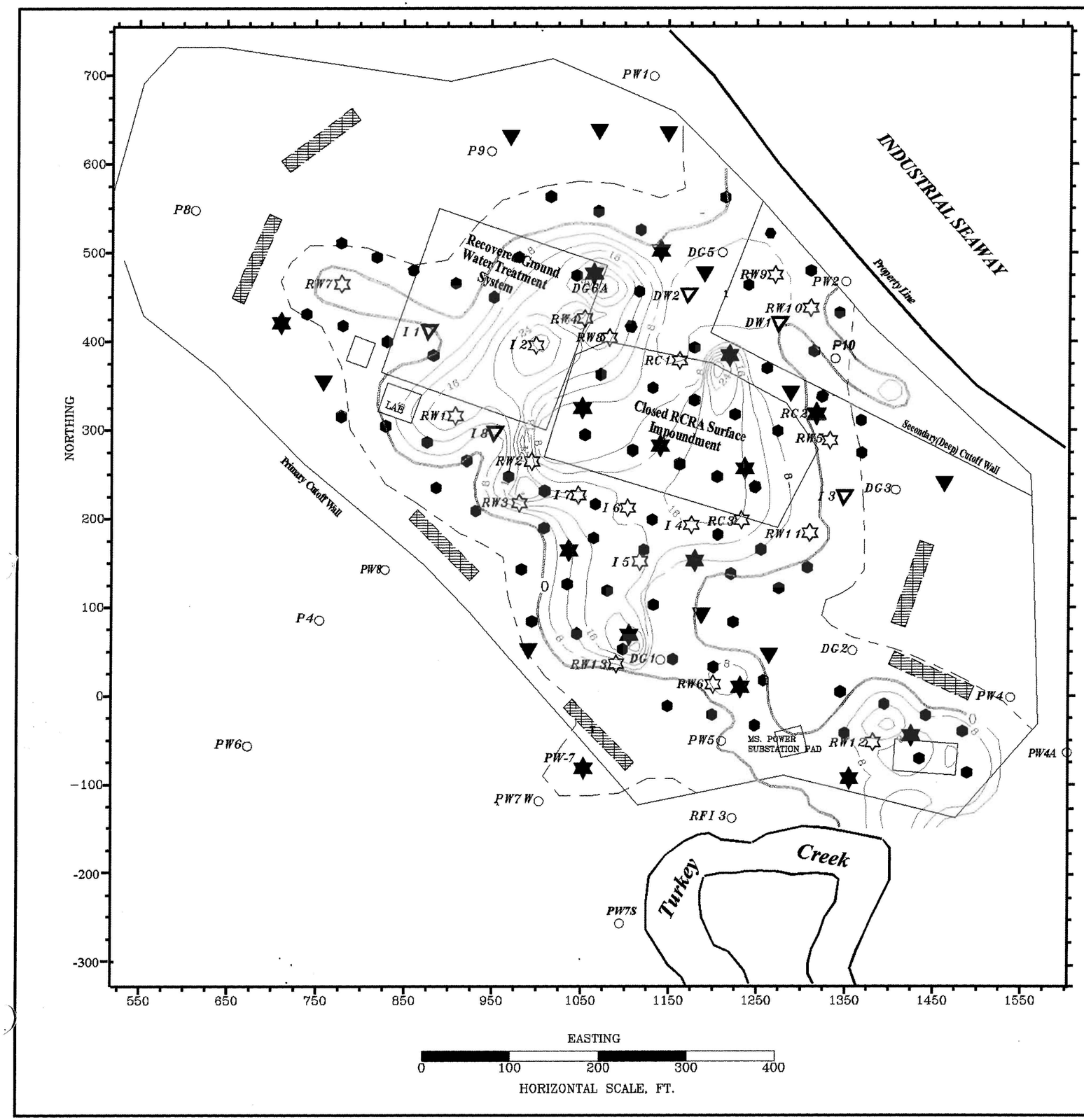
1000 — GROUNDWATER OIL AND GREASE CONTOUR (mg/ℓ)

0 — ESTIMATED LIMIT BASED ON QUANTITATIVE AND QUANTITATIVE DATA

0 100
Scale In Feet

FIGURE 9

OIL AND GREASE ISOCONCENTRATION MAP (HORIZON 3)		
SCALE:	APPROVED BY	DRAWN BY YM
DATE: 3 - 8 - 95		
CAVENHAM FOREST INDUSTRIES INC.		
GULFPORT, MS.		DRAWING NUMBER



LEGEND

PRESENT CORRECTIVE ACTION WELLS

- INJECTION WELL
- RECOVERY WELL
- OTHER WELLS
- 8, etc. PRECORRECTIVE ACTION CONTOURS OF VISUAL THICKNESS, FEET
- APPROXIMATE 'ZERO' EDGE OF VISUAL PLUME
- Estimated Extent of H3 Ground Water, Dissolved Plume

PROPOSED ADDITIONAL CORRECTIVE ACTION WELLS & TRENCHES

- AIR SPARGING WELL POINTS
- RECOVERY WELLS
- INJECTION WELLS
- INFILTRATION TRENCHES

Figure 10

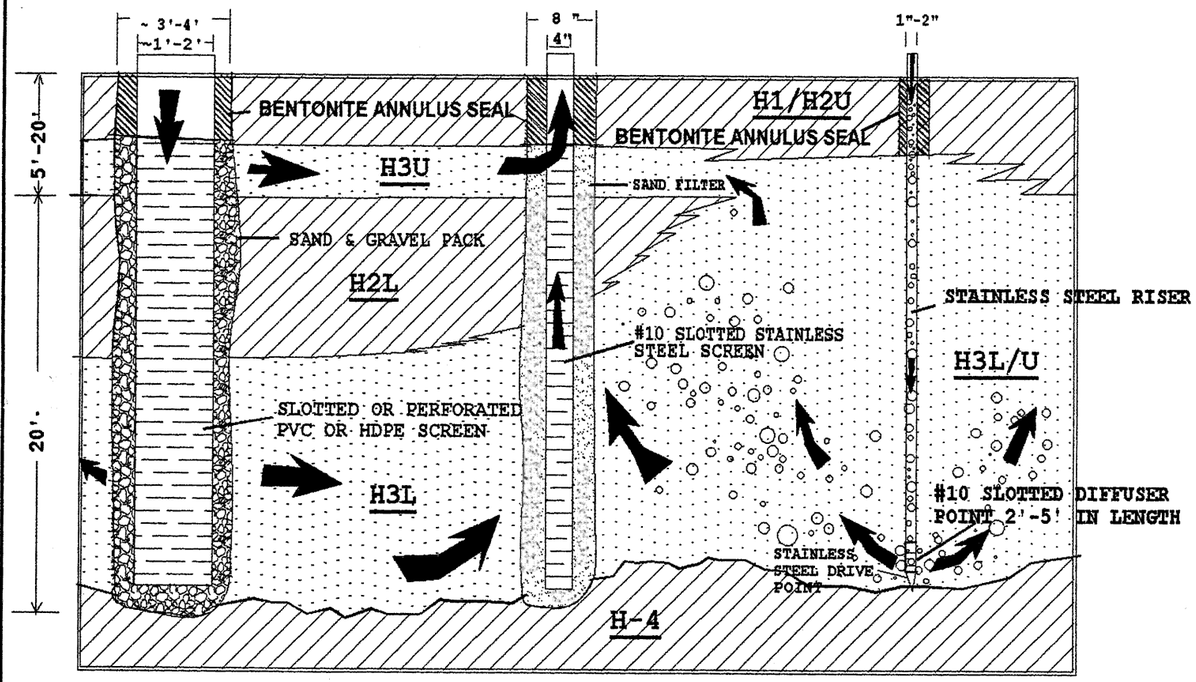
Proposed Injection, Recovery, Air Sparging Wells, and Infiltration Trenches

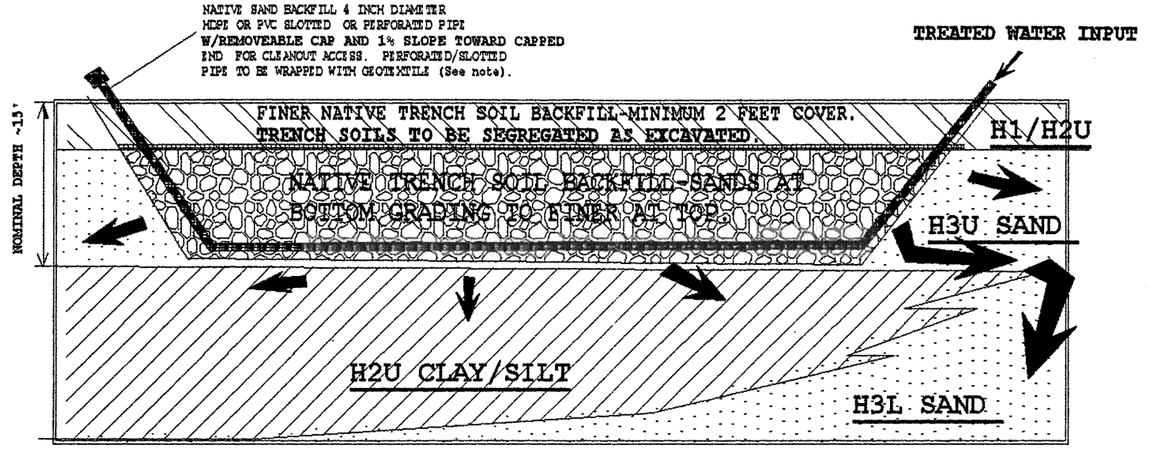
Scale as shown Date: 04/05/95	APPROVED BY	Drawn by: J. Webb, P.G.

CAVENHAM FOREST INDUSTRIES INC.

Gulfport, Mississippi — DRAWING NUMBER

INJECTION WELL RECOVERY WELL AIR SPARGING WELL





TYPICAL INFILTRATION TRENCH

(NOTE:BOTTOM OF TRENCH MAY BE WITHIN H2L CLAY OR H3U/L SAND)

TYPICAL WELLS

LEGEND

AIR FLOW

FLOW/INFILTRATION DIRECTIONS

GEOTEXTILE OR "BENTOMAT"(Optional)

Note: ~1,000 CY of clean filter sand will be stockpiled at the site as potential trench replacement sand filter backfill.

(NOT TO SCALE)

Figure 11

TYPICAL INJECTION, RECOVERY, AIR SPARGING WELLS AND INFILTRATION TRENCHES		
Scale: None DATE: APRIL 28, 1995	APPROVED BY: CwR	DRAWN BY: J.WEBB, P.G.
CAVENHAM FOREST INDUSTRIES INC.		
GULFPORT, MISSISSIPPI		DRAWING NUMBER

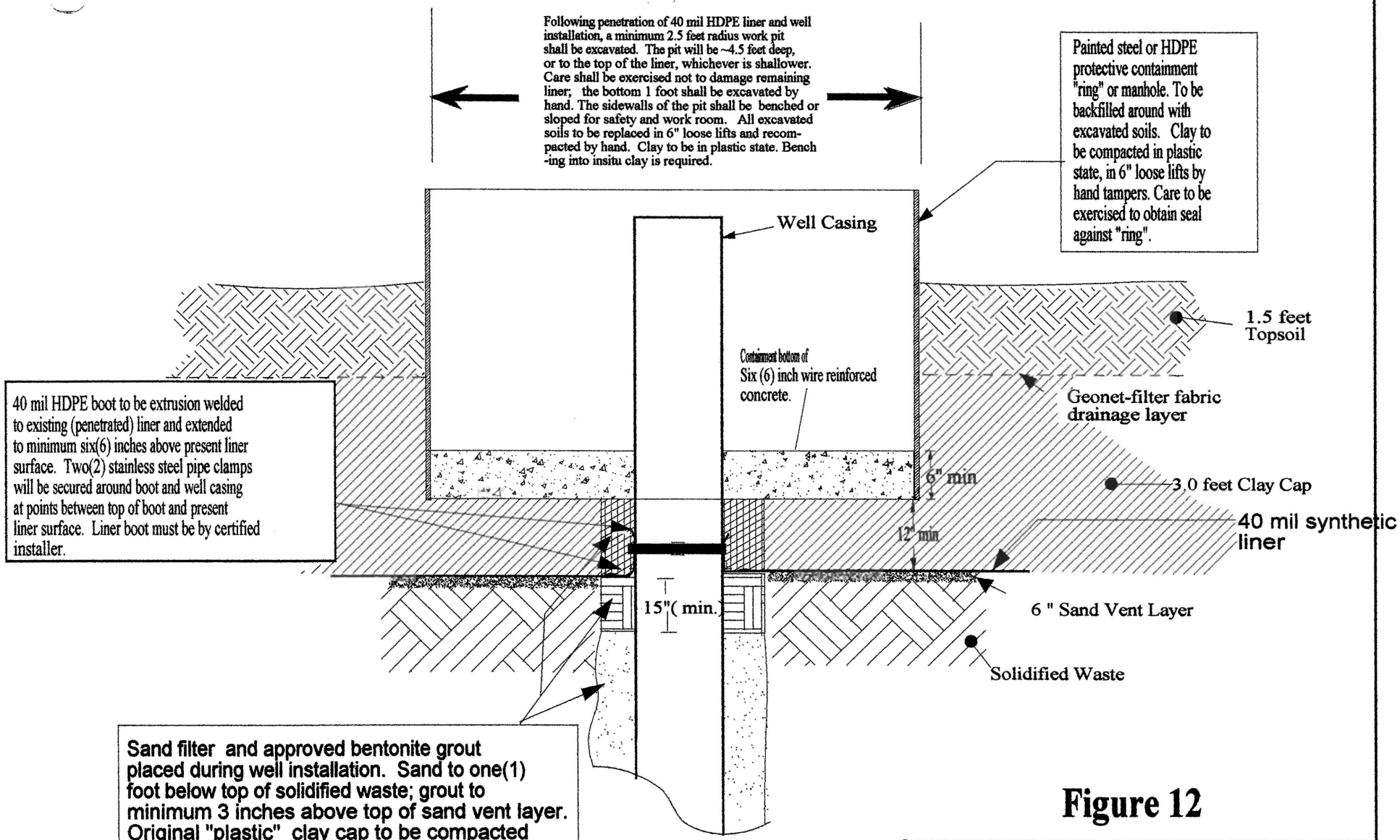


Figure 12

RCRA Cap Well Installation Repair Detail		
Scale : ~ 1"=2 feet Date: 04/06/95 revised	APPROVED BY	DRAWN BY J.WEBB, P.G.
CAVENHAM FOREST INDUSTRIES INC.		
Gulfport, Mississippi		DRAWING NUMBER

Note: Approved bentonite grout may be placed to ground surface above sand filter during well installation and excavated from around well during work pit excavation. Thin plastic remnant of grout adhering to well casing will enhance liner seal to casing.

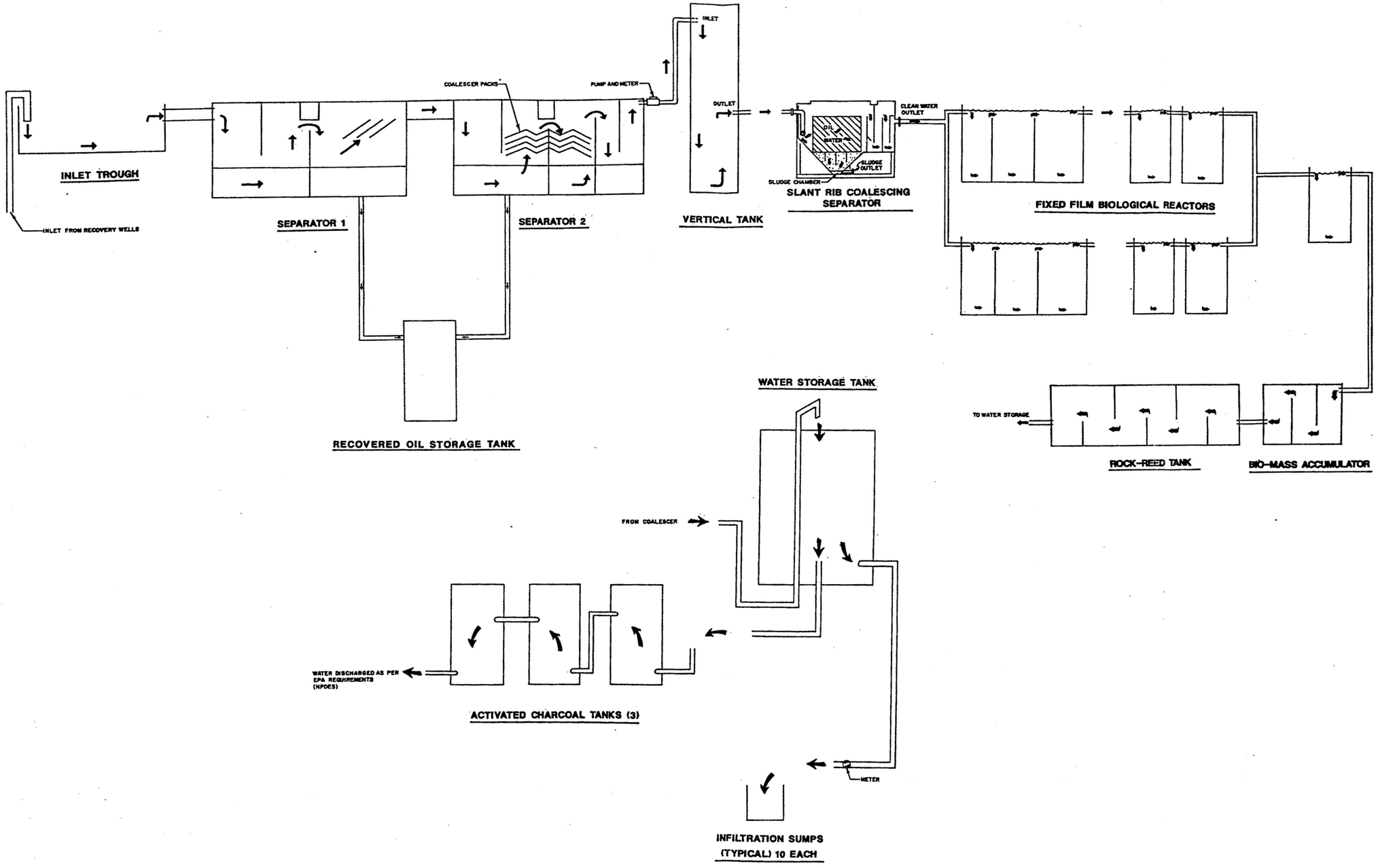


FIGURE 13

REVISED 8/28/91
REVISED 4/18/96

GROUND WATER TREATMENT SYSTEM FLOW SCHEMATIC		
SCALE: NTS	APPROVED BY Cwk	DRAWN BY Y. R. M.
DATE: 11/19/90		
CAVENHAM FOREST INDUSTRIES INC.		
GULFPORT, MS.		DRAWING NUMBER

DWG.NO.00769

TABLES

TABLE 1
CAVENHAM FOREST INDUSTRIES INC.
GULFPORT, MISSISSIPPI
WELL SUMMARY TABLE

WELL No.	TOC ELEV.-ft NVGD[1]	GRND ELEV.-ft[2] NGVD	TOTAL DEPTH ft-bls[3]	AQUIFER [4]	TOP OF SCREEN ft-bls	TOP OF SAND ft- bls	TOP OF SEAL ft-bls	WELL TYPE[6]
MW-1	17.0	13.0	16.0	H-3	11.0	NR[5]	NR	P
MW-2	15.6	12.7	31.2	H-3	26.2	NR	NR	RM
MW-6	5.7	~5.0	117.0	"100 Ft. Sand"	112.0	NR	NR	P
MW-7	5.8	3.9	56.0	H-5	46.0	39.0	37.5	HM
MW-8	5.8	3.9	16.0	H-3	6.0	4.0	2.5	HM
MW-9	6.6	3.9	50.0	H-5	40.0	27.5	25.5	HM
MW-10	6.4	3.9	25.0	H-3	15.0	10.0	8.8	HM
MW-11	9.8	6.6	52.0	H-5	42.0	38.5	36.5	HM
MW-12	9.1	6.6	38.0	H-3	28.0	20.0	18.0	HM
PW-1	9.8	8.0	35.0	H-3	20.0	17.0	14.0	P
PW-2	8.2	6.5	42.0	H-3	27.0	20.0	17.0	P
PW-3	10.7	8.9	37.7	H-3	30.7	NR	NR	RM
PW-4	9.9	6.8	35.0	H-3	20.0	NR	NR	P
PW-4A/RFI-1	9.5	6.1	31.0	H-3	26.0	25.0	23.0	RM
PW-5	8.0	5.2	43.0	H-3	31.5	NR	NR	P
PW-6	13.4	10.8	38.0	H-3	18.0	NR	NR	P
PW-7	8.6	6.8	16.0	H-3	8.0	6.0	4.0	RR
PW-7S	8.3	4.0	12.0	H-3	6.0	4.5	2.5	RM
PW-7W	8.9	5.9	16.0	H-3	10.0	8.5	6.5	RM
PW-8	12.8	10.8	30.0	H-3	19.5	17.5	15.5	RM
DG-1	10.5	6.8	40.0	H-3	15.0	10.0	9.0	P
DG-2	11.4	7.8	34.0	H-3	17.0	16.0	14.0	RM
DG-3	11.4	8.4	38.0	H-3	8.0	NR	NR	P
DG-6A	15.3	13.6	39.0	H-3	18.0	16.0	13.0	RM

[1] TOC=Top of Casing; NGVD=National Geodetic Vertical Datum [2] @ Time drilled
[3] @Time drilled,below land surface [4] Refer to CAP Addendum,11/94 [5] No Record
[6]"HR"=HWSA Recovery;"RR"= RCRA recovery;"I"=Injection;"RM"=RCRA Monitor;"HM"=HSWA Monitor;"P"=Piezometer
FILE:GPWELSUM.WQ1

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WELL NO.	TOC ELEV.-ft NVGD[1]	GRND ELEV.-ft[2] NGVD	TOTAL DEPTH t-bls[3]	AQUIFER [4]	TOP OF SCREEN ft-bls	TOP OFSAND ft- bls	TOP OF SEAL ft-bls	WELL TYPE[6]
RC-1	13.3	11.2	37.0	H-3	15.0	NR[5]	NR	RR,RM
RC-2	11.9	10.2	35.0	H-3	20.0	NR	NR	RM
RC-3	11.0	9.6	38.0	H-3	15.0	NR	NR	RR,RM
RC-5	15.0	NA[7]	32.5	H-3	21.0	8.0	6.0	HM
RC-6	13.8	NA	31.0	H-3	14.0	6.5	4.0	HM
RC-7	17.5	NA	33.5	H-3	22.0	11.0	9.0	HM
RC-8	19.3	NA	37.0	H-3	19.5	14.5	12.5	HM
RFI-2	5.8	6.5	30.0	H-3	20.0	19.0	16.0	P
RFI-3	7.8	5.2	33.0	H-3	23.0	22.0	19.0	P
RFI-4	12.4	10.05	32.0	H-3	22.0	19.0	15.0	P
RFI-5	14.5	11.35	36.0	H-3	21.0	19.0	15.0	P
RFI-6	11.6	9.01	32.0	H-3	22.0	18.0	15.0	P
P-4	12.9	11.0	30.0	H-3	23.0	17.5	15.5	P
P-8	15.7	12.8	30.0	H-3	17.5	18.0	16.0	P
P-9	16.3	13.0	44.5	H-3	32.0	29.0	27.0	P
P-10	11.3	10.0	44.5	H-3	32.0	28.0	26.0	P
RW-1	12.8	11.2	21.5	H-3	10.5	NR	NR	RR,RM
RW-2	12.5	11.5	40.0	H-3	20.0	NR	NR	RR,RM
RW-3	11.7	10.0	40.5	H-3	28.0	NR	NR	RR,RM
RW-4	13.2	11.0	41.0	H-3	29.0	NR	NR	RR,RM
RW-5	12.0	9.6	35.0	H-3	15.0	NR	NR	RR,RM
RW-6	8.3	8.8	36.0	H-3	15.0	NR	NR	RR,RM
RW-7	13.7	12.4	34.0	H-3	16.5	9.0	7.0	RR,RM
RW-8	12.6	12.6	37.0	H-3	19.5	18.0	16.0	RR,RM
RW-9	10.9	9.3	36.5	H-3	24.0	23.0	21.0	RR,RM
RW-10	8.3	8.3	36.5	H-3	19.0	17.0	15.0	RR,RM
RW-11	10.4	7.8	32.5	H-3	15.0	13.0	11.0	RR,RM
RW-12	9.4	10.1	31.0	H-3	18.5	15.0	13.0	RR,RM
RW-13	8.6	7.6	36.5	H-3	19.0	6.0	4.0	RR,RM
RW-14	5.1	4.0	25.0	H-3	5.0	3.5	2.5	HR
RW-15	5.4	4.7	11.0	H-3	6.0	5.0	4.0	HR
RW-16	5.4	4.1	28.5	H-3	18.5	2.5	0.0	HR

[1] TOC=Top of Casing; NGVD=National Geodetic Vertical Datum [2] @ Time drilled
[3] @Time drilled,below land surface [4] Refer CAP Addendum,11/9 [5] No Record
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[7]NA=Not Available at present

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RW-17	6.3	5.6	35.0	H-3	10.0	3.5	2.5	HR
RW-18	7.7	5.6	35.0	H-3	10.0	8.5	7.5	HR
RW-19	9.1	6.4	38.0	H-3	22.0	18.0	17.0	HR
RW-20	8.4	5.8	36.0	H-3	20.0	18.5	17.5	HR
RW-21	8.4	5.7	29.0	H-3	13.0	11.0	10.0	HR
RW-22	7.9	6.7	29.5	H-3	8.0	7.0	6.0	HR
RW-23	5.9	3.7	30.0	H-3	10.0	8.5	7.5	HR
RW-24	5.2	2.8	27.0	H-3	6.0	4.5	3.0	HR
RW-25	8.2	5.0	30.0	H-3	6.8	0.5	0.0	HR
I-1	16.3	13.0	37.0	H-3	25.5	24.0	22.0	I
I-2	15.9	13.7	42.5	H-3	27.5	25.0	23.0	RR,RM
I-3	13.5	10.0	28.5	H-3	13.5	11.0	9.0	I
I-4	14.4	10.4	38.5	H-3	23.5	18.0	16.0	RR,RM
I-5	14.4	10.4	40.5	H-3	25.5	21.0	19.0	RR,RM
I-6	14.7	10.9	44.0	H-3	29.0	25.0	23.0	RR,RM
I-7	15.5	11.3	41.0	H-3	26.0	22.0	20.0	RR,RM
I-8	15.9	12.3	33.5	H-3	23.5	22.0	20.0	I
DW-1(I-9)	9.6	~8.0	19.0	H-3	NR	NR	NR	RR
DW-2(I-10)	13.9	~12.0	15.0	H-3	NR	NR	NR	I
CB-11	16.6	12.9	23.0	H-3	8.0	NR[5]	NR	P
CB-12	15.7	12.2	35.0	H-3	20.0	NR	NR	P
CB-13	15.4	12.5	30.0	H-3	10.0	NR	NR	HM
CB-19	16.9	14.4	13.5	H-3	6.0	NR	NR	P
OPRW-1	21.5	NA	43.0	H-3	24.0	NR	NR	HR
OPRW-2	22.5	NA	18.5	H-3	11.0	9.0	7.0	HR
OPRW-3	24.4	NA	43.0	H-3	30.5	14.0	12.0	HR
OPRW-4	21.0	NA	35.0	H-3	17.5	9.0	7.0	HR
OPRW-5	21.9	NA	18.5	H-3	11.0	9.0	7.0	HR
OPRW-6	25.2	NA	28.5	H-3	16.0	14.0	12.0	HR
OPRW-7	22.4	NA	17.5	H-3	10.0	9.0	7.0	HR
OPRW-8	21.5	NA	17.5	H-3	10.0	9.0	7.0	HR
HGC-1	14.8	11.5	30.0	H-3	19.0	17.0	15.0	
OP SUMP	24.3	17.4	21.5	H-3	NA	NA	NA	HR

[1] TOC=Top of Casing; NGVD=National Geodetic Vertical Datum [2] @ Time drilled
[3] @Time drilled, below land surface [4] Refer to CAP Addendum,11/94 [5] No Record
[6]"HR"=HWSA Recovery;"RR"= RCRA recovery;"I"=Injection;"RM"=RCRA Monitor;"HM"=HSWA Monitor;"P"=Piezometer
[7]NA=Not Available at present

TABLE 2
RCRA Corrective Action Monitoring Schedule
Gulfport, MS

MONITORING PROGRAM	FREQUENCY	ANALYTICAL PARAMETERS
Compliance Monitoring Wells (RC-1, RC-2, RC-3) Effectiveness Monitoring Wells (DG-2, DG-6A. RW-3, RW-7, RW-10) Boundary Control Wells (PW-3, PW-7S, PW-7W, and PW-8) Injection Water	Semi-Annual Semi-Annual Semi-Annual Monthly	Benzene 2,4-Dimethylphenol Pentachlorophenol Naphthalene Acenaphthylene Fluoranthene Benzo(a)pyrene Oil and Grease
Recovery Wells	Semi-Annual	Oil and Grease
Water Level (All Wells)	Quarterly	Water Level
Total Recovery Well Flow	Monthly	Total Flow (Gallons)
Total Injection Well and Infiltration Trench Flow	Monthly	Total Flow (Gallons)
NAPL	Monthly	*NAPL Shipped Off-Site (Gallons)

* Estimated from Manifests

ATTACHMENT F

INSPECTION AND SECURITY PLAN

INSPECTION AND SECURITY PLAN

Cavenham Forest Industries LLC
Gulfport, Mississippi Facility

Prepared by:
Environmental Management Services, Inc.
Hattiesburg, Mississippi

(601) 544-3674
504) 343-7361

January 26, 2006
Revised: October 5, 2010
Revised April 3, 2017

Table of Contents
Gulfport Facility - Cavenham Forest Industries LLC

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2.0 Final Cover Inspection A-1

3.0 Security Fence and Gate Inspection A-2

4.0 Monitor Well Inspection A-3

5.0 Wastewater Treatment System Inspection A-4

6.0 Recordkeeping A-5

List of Tables

Tables	Description
1	SPCC Monthly Inspection Form
2	Quarterly Inspection Form

1.0 Introduction

Presented herein is an Inspection and Security Plan used by and maintained at the Cavenham Forest Industries LLC, site located in Gulfport, Mississippi. Inspections are performed on a regular basis to ensure proper operation and maintenance of monitoring systems; safety and emergency equipment; security devices; and operating structural equipment in order to prevent, detect or respond to environmental or health hazards. Regular inspections also assure the timely identification and correction of problems such as equipment or operator errors, malfunctions or deterioration, which could cause or lead to releases or threats to human health.

Any items that require maintenance will be recorded on the Facility Inspection Form and reported to Environmental Management Services, Inc., (EMS) corporate office. EMS provides contract personnel to CFI. These EMS personnel conduct all on-site inspection and security activities. The Gulfport Environmental Supervisor will take the appropriate actions to remedy the problem in such a way that detected problems do not lead to environmental or human health hazards. If a hazard has already occurred or is imminent, remedial action will be taken immediately, according to procedures detailed in the facility's SPCC Plan and/or in the Contingency Plan.

Although there are no active facilities remaining on the site, certain security equipment will be maintained under 264.117 (b) to protect the integrity of the facility cap and equipment. Access by the public would pose no hazards to human health. Nonetheless, public access is not allowed.

Examples of written inspection schedules that will be completed during regular site inspections are presented as Table 1 and Table 2.

2.0 Final Cover Inspection

Inspection of the final cover will be conducted by a representative of Cavenham Forest Industries according to the following schedule:

Inspection Frequency	Time Period
1/month	First two years of post-closure
1/quarter	Remainder of post-closure period

Inspections of the final cover and its containment structure will also be conducted after any major 25-year, 24-hour storm event and after any hurricane. If any disruptions such as channel diversions or ponding is noticed, proper remedial actions will be initiated. A report shall be filed detailing each inspection and any corrections or repairs that are required and/ or completed. These reports shall include the date and time, the person performing the inspection and the defects observed.

Inspectors shall observe the final cap or cover for such defects as erosion gullies, loss of vegetation, cracking or settlement, burrows or other animal activities, presence of perennial wood vegetation, and slumping or sliding. Any repairs or corrections will be made using topsoil or compacted clay, as required, to return the cap to its original grade. Reseeding will be performed, if needed. Vent pipes will be inspected to ensure that they remain free of any blockages.

3.0 Security Fence and Gate Inspection

To prevent the unknowing entry and minimize the possibility of unauthorized entry of persons or livestock, the closed RCRA units are fenced by a 6-foot high chain-link fence with a 12-inch barbed wire angle attached to the top. The fence is posted at 100-foot centers with warning signs indicating the hazardous nature of the materials buried inside the fenced area.

Gates accessing the site will be locked. The lock on the main gate is pad locked during non-business or non-operational hours. A second gate on the main entrance is operated with magnetic keys, or by automatically opening or closing it from a control in the onsite lab/office building. An emergency exit gate on the southern western boundary will permanently remain locked with a heavy padlock and trees were planted to induce vegetation growth but may be opened as needed. Since only a few essential personnel will possess keys to the closed facility, no formal access control procedures are necessary. All monitor wells are equipped with locking covers to prevent tampering.

The fence and entrance to the closed RCRA units are posted with warning signs bearing the following legend:

"Caution — Hazardous Waste Disposal Area"

This printed warning is legible from a distance of 25-feet. Signs are printed in English and may be seen from any approach.

The sign at the facility's main gate contains the following information:

- Name of the owner/ operator
- Address of the owner/ operator
- 24-hour toll-free emergency telephone number to contact the owner/ operator

The barriers surrounding the closed RCRA units and site property will be inspected following the same schedules outlined above for the final cover. (See Table 2.) Security fences will be inspected to ensure the following:

- All signs are adequately fastened and readable.
- Fence posts are properly anchored and secured into the ground.
- Gates are securely locked, and fastening hardware is in good order.
- Proper tension of fence fabric and lower tension lines are maintained.
- Fence fabric is properly secured to fence posts.
- Fence parapets have proper tension.
- Fence and parapet are adequately secured to fence posts.
- There are no tears in fence fabric.
- Emergency contact phone number and the name and address of the facility's owner/operator are posted on the front gate.

4.0 Monitor Well Inspection

Monitor wells will be inspected following the inspection plan outlined for the final cover and security fence, as well as prior to each sampling event. The inspection of individual monitor wells will consist of:

- Inspection of well riser pipe to assure integrity.
- Inspection of the protective casing, to assure proper protection of the standpipe.
- Inspection of the protective post and concrete pad, to assure protection of the monitor well.

5.0 Wastewater Treatment System Inspection

Visual Inspection of the wastewater treatment systems is conducted on a daily basis by onsite personnel during the course of regular operations. Quarterly inspections are also performed and the results are recorded using CFI inspection checklists. The quarterly inspection of the wastewater treatment system consists of the following:

- Checking for visible defects in tanks, tank supports and secondary containment.
- Checking for evidence of leaks, spills or corrosion.
- Inspecting the truck loading and transfer area for signs of spills. (This is done daily when in use.)

The wastewater treatment system has a dike surrounding the entire system that provides integral countermeasures for run-off control and flood prevention. It ensures that in the event of a leak, no releases will occur, and in the event of normal flooding, the structural integrity and securing of the vessels and equipment within the diked area are not compromised.

The tanks that are part of the treatment system are located within the diked area and may contain liquids and sludges with various concentrations of wood treating constituents. These tanks and the piping leading to and from these tanks are inspected for integrity.

There are two flow meters within this system. The first flow meter details the NPDES discharge and monitors how much clean water is leaving the treatment system. The second flow meter is after the separation stage of the treatment and denotes how much water enters the system. These are important parameters to monitor as they help to determine the quantities being treated in the system.

The site air compressors are used to operate the air lift pumps in the recovery wells. The oil levels and belts on the air compressor are checked quarterly to ensure they are in top operating condition as part of the recorded inspection, but are also checked daily as part of informal inspections.

The automatic pump control mechanism for the API separator determines the amount of feed delivered to the system. This insures that the system neither runs dry or overfeed and kills the biological microorganisms used for treatment. The system is inspected for functionality as well as the secondary system.

The site poses no significant threat for fire, but best management practices dictate that fire extinguishers be kept on hand in the event that any fire breaks out. These fire extinguishers are inspected quarterly to ensure that they have adequate pressure and have been regularly serviced.

The eye wash station is available for emergency use and is checked quarterly for pressure and cleanliness.

The lab storage area is checked quarterly to ensure that it is clean and properlty stocked for emergency situations. The inspection includes an inventory check of the following emergency response items: Two flat, square-edged shovels, tow chemical cartridge respirators with organic vapor cartridges with current expirations dates, two spare organic vapor cartridges with current expiration dates, four disposable impermeable coveralls in size large, four pairs of impermeable rubber gloves, two pairs of steel-toed rubber boots in size 10 and size 12, two plastic hard hats, two pairs of protective eyewear, a completely stocked first-aid cabinet, and two bales of absorbent pads.

In addition, the waste water treatment system is inspected after a hurricane or a major storm event. These systems would not be impacted by heavy rain, but only by significantly high floodwaters or possibly by excessively high winds.

6.0 Recordkeeping

Inspections will be recorded in an inspection log or summary and will be maintained onsite for at least three years after the date of inspection. These records will include:

- Date and time of inspection.
- Inspector's name.
- Notations of observations made.
- Date and nature of repairs or other remedial actions

The inspections will follow the tables found in A-1 and A-2. The person performing the inspections completes the form (either Table A-1 or A-2, depending of the inspection) as part of the inspection. Once it has been completed, the form is bound in a binder dedicated for these inspection forms and retained on-site.

TABLES

TABLE A-1
SPCC MONTHLY INSPECTION FORM
Gulfport Facility - Cavenham Forest Industries, Inc.

Check Either	Yes	No	Name of Facility _____ Description (if yes)
1. Are any defects visible in the following?			
Tanks			
Tank Supports			
Secondary Containment			
2. Is there any evidence of leaks or corrosion at the following?			
A. Transfer Area			
B. WWTS			
Tanks			
Piping			
Valves			
Hose or Nozzle			
3. Are warning signs visible?			
4. Is area clear of paper, trash or other debris?			
5. Is there visible oil accumulation?			
6. Monthly Inventory of Supplies ?			
7. Oil Storage Volume End of Period Start of Period	____ gal. ____ gal.		Date Date
8. Date of Last Transfer			Date
COMMENTS:			
ACTION TAKEN:			

_____ _____ _____

(SIGNATURE) (DATE) (TIME)

TABLE A-2
Quarterly Inspection Form
Cavenham Forest Industries, Inc.
Gulfport, MS

No.	Item	Status		If Failed, Recommended Remedial Action	Description of Remedial Action Performed	Date Completed	Initials
		Pass	Fail				
	Facility Access Road						
1	Road accessible by 2-wheel drive. No soft spots or excessive erosion of rutting.						
2	All caution and speed limit signs present and in good condition						
3	Road ditches unobstructed.						
	Security Fence						
4	Fence within 5% of vertical						
5	Fabric in good condition and all fabric ties present and connected. Top rail and bottom tension wire connected						
6	All linepost, pull posts, and gate posts are structurally sound and free of significant corrosion. Posts do not move significantly.						
7	All compression braces properly tensioned and free from corrosion						
8	Angle arms for barbed wire parapet securely attached to top of fence and free from corrosion. Three (3) continuous strands of barbed wire securely attached to angle arms.						
9	Gates in working order with all components meeting specifications as for fence. Gate kept locked when personel are not on-site.						
10	Warning sign in readable condition spaced a minimum of every 100 feet. Each sign securely attahced near eye level at four (4) points.						
11	Warning sign at gate in readable condition and securely attached.						
12	Fence fabric intact with no tears.						
	Drainage Ditches						
13	All ditches free of excess debris, vegetation, or siltation.						
14	Ditch side slopes free of sloughing, caving, or other signs of excessive erosion. Ditches vegetated above normal water.						
15	Inspect ditch banks for evidence of contaminate seeps.						
16	Inspect facility property and perimeter for any ponding and/or channel diversions.						
17	Inspect run-on and run-off controls for washout or clogging.						
18	Inspect site for ponding or channel diversions.						
	Treated Water Injection System						
19	Check pipes for integrity.						
	Air Sparging System						
20	Check site glasses to ensure that they are intact and functioning properly.						
21	Check pipes for integrity.						
22	Check meter for functionality						
	Facility Cover						
23	Inspect grass for normal appearance (appearance dependent on season). Inspect any brown or bare patches for signs of insect infestation.						

TABLE A-2
Quarterly Inspection Form
Cavenham Forest Industries, Inc.
Gulfport, MS

No.	Item	Status		If Failed, Recommended Remedial Action	Description of Remedial Action Performed	Date Completed	Initials
		Pass	Fail				
24	All areas above normal ditch water elevations vegetated with appropriate cover species.						
25	Inspect cover for signs of any woody vegetation. Immediately remove any woody vegetation over 6" tall.						
26	Inspect cover for signs of failure such as sloughing, cracking, heaving, or other movement.						
27	Inspect cover for signs of excessive erosion such as gullying.						
28	Inspect cover for signs of burrows or animal activities.						
	Gas Venting System						
29	All risers properly installed. Remove risers and use flexible wire or snake to check and, if necessary, clear inside of riser and below ground portions of the vent.						
	Infiltration Trenches						
30	Inspect infiltration trench piping.						
	Benchmarks						
31	Locate all benchmarks and inspect for signs of disturbance. Check to make certain brass caps are present and firmly seated.						
	Creosote Collection Tank, Old Pond						
32	Check for leaks.						
33	Check for line and valve integrity.						
34	Check pumps for oil level, performance, and loose or faulty wire.						
	Creosote Collection Tank, Gulfport						
35	Check for leaks.						
36	Check for line and valve integrity.						
37	Check pumps for oil level, performance, and loose or faulty wire.						
	Creosote Collection Tank, Turkey Creek						
38	Check for leaks.						
39	Check for line and valve integrity.						
40	Check pumps for oil level, performance, and loose or faulty wire.						
	Groundwater Monitoring Wells						
41	Check integrity of protective posts set in ground around monitoring wells. Posts should not move when pushed.						
42	Inspect the well cover. Cover must be free from significant corrosion, properly marked with the well number and firmly set in the concrete pad. The well cover must be locked.						
43	Inspect the concrete pad for accumulated debris, standing water, or signs of failure suck as large cracks.						
44	Inspect well casings for signs of tampering. Check inside of cover for evidence of staining from foreign material. Note unusual odors.						
45	Check condition of pump quick-connections. Clear vent hole in cap, if necessary, by pushing a thin, clean wire through the vent hole.						

TABLE A-2
Quarterly Inspection Form
Cavenham Forest Industries, Inc.
Gulfport, MS

No.	Item	Status		If Failed, Recommended Remedial Action	Description of Remedial Action Performed	Date Completed	Initials
		Pass	Fail				
46	Replace threaded cover: close and relock well cover when inspection is complete.						
47	Well depth measured.						
48	Inspect pumps for oil level, performance, and loose or faulty wire.						
	Groundwater Recovery Well System						
49	Inspect well cover for deterioration.						
50	Inspect air and outflow pipes for leakage at well and at other observation points.						
51	Check pump output by measuring discharge into a graduated container for a given time period.						
52	Inspect pumps in the system for wear, functionality, and wiring.						
	Wastewater Treatment System						
53	Inspect pumps in the system for wear, functionality, and wiring.						
54	Inspect dike around area for cracks or structural deterioration.						
55	Inspect treatment tanks and piping for leakage.						
56	Inspect all lines into, out of the system and in the system for leaks.						
57	Check the flow meter for operational status.						
58	Check air compressor oil level and belts.						
59	Check automatic pump control mechanism for API separator (primary and secondary pump).						
60	Check fire extinguishers for pressure and/or date of service.						
61	Check eye wash station for water pressure and cleanliness.						
62	Lab Storage Area (all equipment unused or in good, clean condition).						
62a	2 flat, square-edged shovels						
62b	2 chemical cartridge repirators with organic vapor cartridges. Check expiration dates on cartridges.						
62c	2 spare organic vapor chartridges. Check expiration dates on cartridges.						
62d	4 disposable impermeable coverals ("large size").						
62e	4 pairs impermeable rubber gloves.						
62f	2 pairs steal-toed rubber boots (1 size 10 and 1 size 12).						
62g	2 plastic hard hats.						
62h	2 pairs protective eyewear.						
62i	First-aid cabinet (see list on cabinet door).						
62j	2 bales of absorbent pads.						
	Heavy Equipment						
63	Inspect back hoe for wear, functionality, and oil levels.						
64	Inspect loader for wear, funcationlity, and oil levels.						
	Date of Inspection: **Inspector:**			**Certification:**	**Time:**		