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# FAX

Date 12/18/97

Number of pages including cover sheet 3

TO: Pat Derosa

FROM: Chuck Dno  
Southern Wood Piedmont  
P. O. Box 5447  
Spartanburg, SC 29304

Phone \_\_\_\_\_  
Fax Phone \_\_\_\_\_

Phone 864-599-1070  
Fax Phone 864-599-1087

CC: \_\_\_\_\_

REMARKS:  Urgent     For your review     Reply ASAP     Please Comment

*Please find signature sheet.  
Call and let's discuss.*

*CD*



M.D.P.  
WHEAT  
L.P. Pied.

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT



JAMES B. HUNT JR.  
GOVERNOR

WAYNE MCDEVITT  
SECRETARY

WILLIAM L. METER  
DIRECTOR

RECEIVED

DEC 10 1997

SOUTHERN WOOD PIEDMONT

VIA UPS NEXT DAY AIR

December 9, 1997

Mr. T.M. Davis, Manager  
Environmental Affairs  
Southern Wood Piedmont Company  
PO Box 5447  
Spartanburg, SC 29304

Subject: Administrative Order on Consent  
Southern Wood Piedmont Company  
NCD 058 517 467  
Wilmington, New Hanover County, NC

Dear Mr. Davis:

Enclosed please find the draft Deferral Administrative Order on Consent (Consent Order) for the subject site, altered as agreed upon during our conference calls on December 2 and 3, 1997. As also agreed on the phone, a signature in the space provided below for Southern Wood Piedmont Company (SWP) will indicate SWP's willingness, upon resolution of the past federal response cost figure referenced in Section V.A. of the Consent Order, to enter into the Consent Order as worded in the attached. We request your response as to your willingness to enter into this order within 7 days of its receipt. If you have any questions regarding this order, please

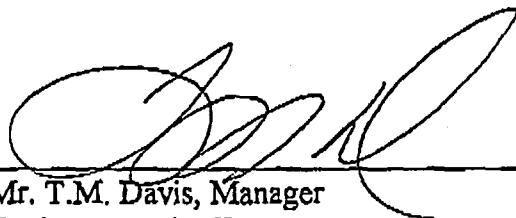
Letter to Mr. T.M. Davis  
December 9, 1997  
page 2

contact me at (919) 733-2801, ext.290.

Sincerely,



Pat DeRosa, Head  
Site Evaluation and Removal Branch  
Superfund Section



Date 12/17/97

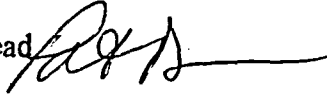
Mr. T.M. Davis, Manager  
Environmental Affairs  
Southern Wood Piedmont Company

Attachment

- cc: Jack Butler  
Rob Gelblum  
Phil Vorsatz  
Layton Bedsole, NC Ports Authority  
Tom Pollard, City of Wilmington

December 17, 1997

TO: Rusty Harris-Bishop, Environmental Engineer  
Superfund Section

FROM: Pat DeRosa, Site Evaluation and Removal Branch Head  
Superfund Section 

SUBJECT: Preparation for Public Notice and Public Meeting  
Southern Wood Piedmont --Wilmington  
NCD 058 517 467  
Wilmington, New Hanover County, NC

I spoke by telephone on December 11, 1997 with Diane Barrett, US EPA Region IV, NC Community Involvement Coordinator, (404) 562-8830, regarding tips on setting up a public meeting and contacts in the Wilmington area. Her suggestions and contact information are listed below.

Information Repository: New Hanover County Public Library  
210 Chestnut Street  
Wilmington, NC 28401

Contact: The director of the library (no name available)  
(910) 341-4394  
Check to see if this is the closest library to the site.

Meeting facilities: New Hanover County Public Library  
(see above)

EPA has held meetings in their upstairs meeting room which Diane estimated holds about 100 people. Again check for proximity to the site. The meeting room will need to be arranged several weeks in advance. See below for room size.

Nearest Public School

Contact: New Hanover County School Board  
Mr. Jackson  
(910) 763-5431

Public Notice: EPA usually puts a display ad in the retail section of the local news portion of the paper, not in the classified ads. She also said they try to place the ad on the day the stores put their coupon ads in. In

Rusty Harris-Bishop  
December 17, 1997  
page 2

Wilmington, they use the Wilmington Morning Star. Check with Pat Williamson on this.

Contact: Tate Bennett  
Wilmington Morning Star  
(910) 343-2342

Diane indicated that EPA usually takes out a 1/4 page ad and she estimated the cost for the Wilmington paper at \$1200. Again, check with Pat Williamson. I'm not sure we need something this big.

Local radio/TV: Diane suggested contacting local radio or TV stations to ask if they could do a PSA for us. Let's talk to Pat Williamson about this too.

Content and timing: Our fact sheet/public notice should be sent out so as to give 14 days notice prior to the meeting/initiation of public comment period. Notice in the paper and on radio should appear during the week preceding the meeting. Stuart is working on a fact sheet. The meeting notice can be part of this. The notice should include the purpose of the meeting as well as the time, date, location, and contacts. The fact sheet should include a simple map showing site location with road names and landmarks. We can copy a city map and highlight the site area and pinpoint the site, for instance.

Mailing list:

Diane recommends that the mailing list include:

Local residents- Pinpoint site on street map. Identify streets and addresses within a 1/4--1/2 mile from the site. No need to cross CF River. Obtain names and addresses for residents (and businesses) from the city directory or from the Emergency Management System (?).

Cape Fear River Watch  
Contact: Bouton Baldrige  
620 Chestnut Street  
(910) 762-5606

Rusty Harris-Bishop  
December 17, 1997  
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Sierra Club--Cape Fear Group

Clean Water Fund

League of Women Voters

Wilmington Chamber of Commerce

Mayor, Don Betz

City Manager, Mary Gornto

City Attorney, Tom Pollard

City council members

County Health Dept., Ray Church, Director (?)

All US Senators/ Representatives for that location

All State Senators/Representatives for that location.

Governor Hunt (??)

US Coast Guard

New Hanover County Engineer, Wyatt Blanchard

County Commissioners

US EPA Region IV, (Phil, Diane, Luis)

Local radio and TV Stations

NC Coastal Federation

PRPs

Diane referred me to a book called "Guide to NC's Environmental Groups" available from UNC Chapel Hill School of Public Health (919) 966-7754. Please find out from Brenda Hunter what we need

Rusty Harris-Bishop  
December 17, 1997  
page 4

to do to purchase this. It costs around \$10.

- Public Meeting:
- Best times: Tuesday or Thursday nights, starting around 6:30 or 7 pm.
- Recording: If we are taking public comment Dianne said we should have a court reporter there. A copy of the transcript should be included in the repository. One possible contact is Cape Fear Court Reporting (910) 763-0576. Check on the State procedures for obtaining such services. (See Pat Williamson, Jill Burton). Dianne said this needs to be arranged several weeks in advance.
- Sign Up Sheet: We should have an attendance sheet at the door and a sign up sheet to get on the mailing list.
- Attire: Diane suggests that presenters dress in work attire, no suits or jeans.
- Set Up: Make sure all AV equipment with backup bulbs will be available and will work for the chosen location. Don't set up table in front with presenters seated behind it. If audience is in theater style setup, can have a podium off to one side for speakers if they need it and have other speakers seated up front and to the side facing the audience.
- Attendance: For the first meeting Diane said if we send out 100 notices we should expect a little over 50 attendees. We will need to have an estimate of this when booking the room.

I would like you to get together with Stuart and start putting together a mailing list for this site as well as checking into a location for the repository and the meeting. I have attached some additional information I received from Tom Pollard with the City of Wilmington as far as contacts for a mailing list. I'd like to have the mailing list and repository set up by mid-January and also have the fact sheet and public notice ready to go by then as well. I told Diane Barrett that you might be calling her for additional information.

attachment

cc: Stuart Parker

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT



JAMES B. HUNT JR.  
GOVERNOR

WAYNE McDEVITT  
SECRETARY

WILLIAM L. MEYER  
DIRECTOR

VIA UPS NEXT DAY AIR

December 9, 1997

Mr. T.M. Davis, Manager  
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Letter to Mr. T.M. Davis  
December 9, 1997  
page 2

contact me at (919) 733-2801, ext.290.

Sincerely,



Pat DeRosa, Head  
Site Evaluation and Removal Branch  
Superfund Section

Date \_\_\_\_\_

Mr. T.M. Davis, Manager  
Environmental Affairs  
Southern Wood Piedmont Company

Attachment

cc: Jack Butler  
Rob Gelblum  
Phil Vorsatz  
Layton Bedsole, NC Ports Authority  
Tom Pollard, City of Wilmington

↙ File Room



**NORTH CAROLINA DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT  
SUPERFUND SECTION**

**IN RE: SOUTHERN WOOD PIEDMONT CO.  
NCD 058 517 467  
WILMINGTON, NORTH CAROLINA  
NEW HANOVER COUNTY**

**ADMINISTRATIVE ORDER  
ON CONSENT PURSUANT TO  
N.C.G.S. 130A-310.9(b) AND  
SUPERFUND STATE DEFERRAL  
MEMORANDUM OF  
AGREEMENT**

**DOCKET NUMBER 97-SF-117**

The following constitutes the agreement of the parties hereto. This Administrative Order on Consent (Consent Order) is entered into pursuant to the Superfund State Deferral Memorandum of Agreement between the US EPA Region IV (EPA) and the State of North Carolina. Southern Wood Piedmont Company concurs with the conclusions of law contained herein solely for purposes of this Consent Order.

**I. JURISDICTION**

This Consent Order is entered into under authority vested in the Secretary of the North Carolina Department of Environment and Natural Resources (Department) by North Carolina's Inactive Hazardous Sites Response Act of 1987 (the Act), which constitutes Part 3, Article 9 of Chapter 130A of the North Carolina General Statutes (N.C.G.S.). N.C.G.S. 130A-310 *et seq.* The Secretary of the Department has delegated this authority to the Director of the North Carolina Division of Waste Management (Director).

**II. STATEMENT OF PURPOSE**

This Consent Order is entered into for the purpose of addressing the hazardous substance or waste disposal site (the Site) defined in Section III. A. of this Consent Order, which the Department has determined endangers public health or the environment. In entering into this Consent Order, the objective of the Division of Waste Management (Division) and Southern Wood Piedmont Company is for Southern Wood Piedmont Company to implement a voluntary remedial action program approved by the Division involving: (1) preparation of a Remedial Investigation Plan to evaluate the extent of contamination related to wood preserving operations conducted on the Site, whether comingled with other contaminants or not; (2) implementation of the Remedial Investigation Plan; (3) completion of a Remedial Action Plan to evaluate alternatives for meeting cleanup standards; and (4) implementation of the approved Remedial Action Plan.

### III. STIPULATIONS OF FACT

- A. "The Site" consists of two contiguous properties, currently owned by the City of Wilmington and the State Ports Authority, respectively, located on Greenfield Street, Wilmington, New Hanover County, North Carolina, and any additional area which has become contaminated as a result of hazardous substances or waste disposed at that property.
- B. Southern Wood Piedmont Company or a predecessor company conducted wood treating operations at the Site from 1932 through 1983. Those operations included the use and application of creosote, pentachlorophenol, and chromated copper arsenate.
- C. Surface soil sampling at the Site has revealed the presence of polynuclear aromatic hydrocarbons, arsenic, and dioxins.
- D. Groundwater sampling at the Site has revealed the presence of volatile organics and polynuclear aromatic hydrocarbons in the groundwater, plus non-aqueous phase liquid creosote product in the subsurface.
- E. Sediment sampling in the site's drainage ditch, and downgradient along Greenfield Creek, has revealed the presence of polynuclear aromatic hydrocarbons characteristic of creosote.

### IV. CONCLUSIONS OF LAW

- A. The substances identified in Sections III. C., D. and E. above are hazardous substances as defined in the Comprehensive Environmental Response, Compensation and Liability Act/Superfund Amendments and Reauthorization Act, 42 U.S.C. Section 9601 *et seq.*, and are thus such substances for purposes of the Act pursuant to N.C.G.S. 130A-310(2).
- B. Disposal of hazardous substances referred to in the preceding paragraph has occurred at the Site within the meaning of N.C.G.S. 130A-310(3) pursuant to N.C.G.S. 130A-290(a)(6).
- C. The Site is an inactive hazardous substance or waste disposal site for purposes of the Act pursuant to N.C.G.S. 130A-310(3).
- D. Southern Wood Piedmont Company is an owner, operator, or other responsible party in relation to the Site within the meaning of N.C.G.S. 130A-310.9, pursuant to N.C.G.S. 130A-310(4), -310(5), -310(9), and -310.7.

- E. This Consent Order is authorized pursuant to the power of the Secretary under N.C.G.S. 130A-310.9(b), and by delegation the Director, to enter into agreements with owners, operators, or other responsible parties for implementation of voluntary remedial action programs as to inactive hazardous substance or waste disposal sites in accordance with remedial action plans approved by the Department.

## V. REIMBURSEMENT OF COSTS

- A. As evidenced by Attachment A hereto, Southern Wood Piedmont Company has paid, or agreed to repay, EPA \$ \_\_\_\_\_ in past federal response costs which EPA determines are owed in relation to the Site. Those costs shall include, but may not be limited to, the costs of activities conducted by the Division and funded under federal Superfund cooperative agreements.
- B. Southern Wood Piedmont Company shall reimburse the Division for all federally funded oversight and enforcement costs the Division incurs pursuant to this Consent Order. The Division will mail Southern Wood Piedmont Company quarterly cost summaries and invoices for these costs. The cost summaries will be of the type provided by the Division to EPA as part of the documentation which the Division provides to EPA for cost recovery purposes. Within sixty (60) days of receiving each invoice, Southern Wood Piedmont Company shall submit full payment to the Division. Payment shall be by certified or cashier's check payable to "NC DENR".

## VI. WORK TO BE PERFORMED

All work performed pursuant to plans approved under this Consent Order shall be under the direction and supervision of a professional engineer or a licensed geologist with expertise in hazardous substance site cleanup and comply with the current U.S. Environmental Protection Agency (EPA) Region IV, Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, May 1996.

- A. Within thirty (30) days after the execution of this Consent Order, Southern Wood Piedmont Company shall submit to the Division two (2) copies of a Remedial Investigation Report organized in sections corresponding to and including at least the items listed below in Sections VI. D. and G.
- B. Within thirty (30) days of receiving notice from the Division of any deficiency in the Remedial Investigation Report, Southern Wood Piedmont Company shall submit to the Division information or material sufficient to correct such deficiency. The Division shall use best efforts to review this submission in a timely manner so that the Division's disapproval or authorization does not affect Southern Wood Piedmont's

ability to meet any time schedule or deadline in connection with any of its obligations under this Consent Order. When the Division determines that the Remedial Investigation is complete, the Division will notify Southern Wood Piedmont Company in writing.

- C. Should additional remedial investigation work phases be necessary, Southern Wood Piedmont Company shall submit the subsequent work phase investigation plan within thirty (30) days of receiving notice from the Division of the additional work phase required. The Division shall use best efforts to review this submission in a timely manner so that the Division's disapproval or authorization does not affect Southern Wood Piedmont's ability to meet any time schedule or deadline in connection with any of its obligations under this Consent Order. The requirements for the submittal and content of plans and reports under Sections VI. D., E., F., G., and H. shall apply to subsequent work plans and reports except where, in the Division's sole discretion, the submission of such would duplicate a previous submittal.
- D. Within thirty (30) days of receiving notice from the Division of the additional work phase required, Southern Wood Piedmont Company shall submit to the Division two (2) copies of a Supplemental Remedial Investigation Plan (Investigation Plan) organized in sections corresponding to the following items and including at least:
1. Site location information including site street address, longitude and latitude, and site and surrounding property land use.
  2. A summary of all management practices employed at the site for hazardous wastes and any wastes managed on site that may have contained hazardous substances, including a list of types and amounts of waste generated (with RCRA waste codes), treatment and storage methods, and ultimate disposition of wastes; a description of the facility's past and current RCRA status; the location and condition of any vessels currently or previously used to store any chemical products, hazardous substances or wastes; and a summary of the nature of all on-site hazardous substance releases, including one-time disposals or spills.
  3. United States Geological Survey topographic maps sufficient to display topography within a one-mile radius of the site.
  4. A site survey plat (prepared and certified by a Registered Land Surveyor) including scale; benchmarks; north arrow; locations of property boundaries, buildings, structures, all perennial and non-perennial surface water features, drainage ditches, dense vegetation, known and suspected spill or disposal areas, underground utilities, storage vessels, existing on-site wells; and identification of all adjacent property owners and land usage.

5. A description of local geologic and hydrogeologic conditions.
6. Inventory and map of all wells, springs, and surface-water intakes used as sources of potable water within a one-half mile radius of the center of the site. If the site is greater than one hundred (100) acres in size, the inventory and map must cover a one-mile radius from the center of each source area.
7. Identification of environmentally sensitive areas on and adjacent to the Site including:

- Marine Sanctuaries
- National and State Parks
- Designated and proposed Federal and State Wilderness and Natural Areas
- Areas identified under the Coastal Zone Management Act
- Sensitive areas identified under the National Estuary Program or the Near Coastal Waters Program
- Critical areas identified under the Clean Lakes Program
- National Monuments
- National and State Historical Sites
- National and State Seashore, Lakeshore, and River Recreational Areas
- Critical habitats and habitats known to be used by State or Federally designated or proposed endangered or threatened species or species under review as to their endangered or threatened status
- National and State Preserves and Forests
- National and State Wildlife Refuges
- Coastal Barriers and Units of a Coastal Barrier Resources System
- Federal land designated for protection of natural ecosystems
- Spawning areas critical for the maintenance of fish/shellfish species within river, lake or coastal tidal waters
- Migratory pathways and feeding areas critical for maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which such fish spend extended periods of time
- Terrestrial areas utilized for breeding by large or dense aggregations of animals
- Rivers State or Federally designated Scenic or Wild
- State lands designated for wildlife or game management
- Areas important to maintenance of unique biotic communities
- State-designated areas for protection or maintenance of aquatic life
- Wetlands

8. A copy of the current owner's(s') deed(s) to the property.
9. A chronological listing of all previous owners and each period of ownership since the property was originally developed from pristine land.
10. Operational history with aerial photographs and Sanborne Fire Insurance maps to support land-use history.
11. A list of all hazardous substances which have been used or stored at the site,

and approximate amounts and dates of use or storage as revealed by available written documentation and interviews with a representative number of former and current employees or occupants possessing relevant information.

12. Site environmental permit history, including copies of all federal, state, and local environmental permits, past and present, issued to Southern Wood Piedmont Company or within Southern Wood Piedmont Company custody or control.
13. A summary of all previous and ongoing environmental investigations and environmental regulatory involvement with the site, and copies of all associated reports and laboratory data.
14. Proposed procedures for characterizing site geologic and hydrogeologic conditions and identifying and delineating each contamination source as to each affected environmental medium, including any plan for special assessment such as a geophysical survey.
15. Proposed methods, locations, depths of, and justification for, all sample collection points for all media sampled, including monitoring well locations and anticipated screened intervals.
16. Proposed field and laboratory procedures for quality assurance/quality control.
17. Proposed analytical parameters and analytical methods for all samples.
18. A contact name, address and telephone number for the principal consultant and laboratory, and qualifications and certifications of all consultants, laboratories and contractors expected to perform work in relation to this work plan. Any laboratory retained must currently be either certified to analyze applicable certifiable parameters under Title 15A of the North Carolina Administrative Code, Subchapter 2H, Section .0800, or be a contract laboratory under the EPA Contract Laboratory Program.
19. Equipment and personnel decontamination procedures.
20. A health and safety plan that conforms to OSHA requirements and assures that the health and safety of nearby residential and business communities will not be adversely affected by activities related to the remedial investigation.
21. A proposed schedule for site activities and reporting.

22. Any other information required by the Division or considered relevant by the remediating party.
  23. If this document includes any work that would constitute the "practice of engineering" as defined by N.C.G.S. 89C, the signature and seal of a professional engineer must be included. If this document includes any work that would constitute the "public practice of geology" as defined by N.C.G.S. 89E, the signature and seal of a licensed geologist is required.
- E. Within thirty (30) days of receiving notice from the Division of any deficiency in the Investigation Plan, Southern Wood Piedmont Company shall submit to the Division information or material sufficient to correct such deficiency. The Division shall use best efforts to review this submission in a timely manner so that the Division's disapproval or authorization does not affect Southern Wood Piedmont's ability to meet any time schedule or deadline in connection with any of its obligations under this Consent Order.
- F. When the Division determines that the Investigation Plan is complete, the Division will notify Southern Wood Piedmont Company in writing. Southern Wood Piedmont Company shall begin the Supplemental Remedial Investigation no sooner than receiving written approval of the Investigation Plan from the Division, nor later than thirty (30) days thereafter.
- G. Within one hundred twenty (120) days of receiving written approval of the Investigation Plan from the Division, Southern Wood Piedmont Company shall submit to the Division two (2) copies of a Supplemental Remedial Investigation Report documenting implementation of the approved Investigation Plan, organized in sections corresponding to the following items and including at least:
1. A narrative description of how the investigation was conducted, including a discussion of any variances from the approved work plan.
  2. A description of groundwater monitoring well design and installation procedures, including drilling methods used, completed drilling logs, "as built" drawings of all monitoring wells, well construction techniques and materials, geologic logs, and copies of all well installation permits.
  3. A map, drawn to scale, showing all soil, surface water and sediment sample locations and monitoring well locations in relation to known disposal areas or other sources of contamination. Monitoring wells must be surveyed to a known benchmark. Soil sample locations must be surveyed to a known benchmark or flagged with a secure marker until after the remedial action is completed. Monitoring well locations and elevations must be surveyed by a Registered Land Surveyor.
  4. A description of all laboratory quality control and quality assurance

procedures followed during the remedial investigation.

5. A description of procedures used to manage drill cuttings, purge water and decontamination water.
  6. A summary of site geologic conditions, including a description of soils and vadose zone characteristics.
  7. A description of site hydrogeologic conditions (if groundwater assessment is determined to be necessary), including current uses of groundwater, notable aquifer characteristics, a water table elevation contour map with groundwater flow patterns depicted, tabulated groundwater elevation data, and a description of procedures for measuring water levels.
  8. Tabulation of analytical results for all sampling (including sampling dates and soil sampling depths) and copies of all laboratory reports (including QA/QC support data referenced to specific samples).
  9. Soil, groundwater, surface water and sediment contaminant delineation maps and cross sections, including scale and sampling points with contaminant concentrations.
  10. A description of procedures and the results of any special assessments such as geophysical surveys, immunoassay testing (EPA SW-846 4000 series methods), soil gas surveys, or test pit excavations.
  11. Copies of all field logs and notes, and color copies of site photographs.
  12. Any other information required by the Division or considered relevant by the remediating party.
  13. If this document includes any work that would constitute the "practice of engineering" as defined by N.C.G.S. 89C, the signature and seal of a professional engineer must be included. If this document includes any work that would constitute the "public practice of geology" as defined by N.C.G.S. 89E, the signature and seal of a licensed geologist is required.
- H. The Division shall use best efforts to review this submission in a timely manner so that the Division's disapproval or authorization does not affect Southern Wood Piedmont's ability to meet any time schedule or deadline in connection with any of its obligations under this Consent Order. Within thirty (30) days of receiving notice from the Division of any deficiency in the Supplemental Remedial Investigation Report, Southern Wood Piedmont Company shall submit to the Division information or material sufficient to correct such deficiency. When the Division determines that the Remedial Investigation is complete, the Division will notify Southern Wood Piedmont Company in writing.



- I. Should additional remedial investigation work phases be necessary, Southern Wood Piedmont Company shall submit the subsequent work phase investigation plan within thirty (30) days of receiving notice from the Division of the additional work phase required. The requirements for the submittal and content of plans and reports under Sections VI. D., E., F. G., and H. shall apply to subsequent work plans and reports except where, in the Division's sole discretion, the submission of such would duplicate a previous submittal.
- J. If the Division determines that hazardous substances or waste disposed at the Site have affected any drinking water wells, Southern Wood Piedmont Company shall, by a deadline established by the Division, provide an alternate drinking water source for users of those wells.
- K. Following Southern Wood Piedmont Company's completion of the Remedial Investigation, the Division will ascertain cleanup standards for each contaminated medium at the Site. The Division shall meet with Southern Wood Piedmont to review the basis for cleanup standards, risk levels, remedial alternatives, design, end use of the site, and institutional controls. Southern Wood Piedmont Company shall use the Division's cleanup standards to develop remedial alternatives in the Remedial Action Plan, as described in Section VI. L. of this Consent Order.
- L. Within ninety (90) days of receiving written notice from the Division that the Remedial Investigation is complete, Southern Wood Piedmont Company shall submit to the Division two (2) copies of its proposed Remedial Action Plan (Action Plan) for all contaminated media at the Site that exceed the cleanup standards ascertained by the Division, organized in sections corresponding to the following items and including at least:
1. A statement of objectives for the Remedial Action.
  2. A listing of potentially applicable technologies.
  3. An evaluation of remedial alternatives using the following feasibility study criteria:
    - a. Protection of human health and the environment, including attainment of remediation goals.
    - b. Compliance with applicable federal, State and local regulations.
    - c. Long-term effectiveness and permanence.
    - d. Reduction of toxicity, mobility and volume.
    - e. Short-term effectiveness: effectiveness at minimizing the impact of the site remediation on the environment and the local community.
    - f. Implementability: technical and logistical feasibility, including an estimate of time required for completion.
    - g. Cost.
    - h. Community acceptance.

4. A detailed description of Southern Wood Piedmont Company's preferred remedial alternative for each contaminated medium, from among the alternatives evaluated, including an evaluation of potential impact to any sensitive environments identified on or near the site and construction designs and specifications (any proposed treatment technology may require on-site testing or bench-scale testing of Site waste to verify its effectiveness).
  5. A description of all activities that are necessary to ensure that the proposed method(s) of remedial action is (are) implemented in compliance with applicable laws and regulations and that cleanup goals established hereunder are met. These activities include, but are not limited to, well installation and abandonment, sampling, run-on/run-off control, and discharge of treated waste streams.
  6. The results of any treatability studies and/or additional site characterization needed to support the remedy.
  7. A description of methods of post-remedial and confirmatory sampling, and any necessary maintenance.
  8. A health and safety plan that conforms to OSHA requirements and assures that the health and safety of nearby residential and business communities will not be adversely affected by activities related to the Remedial Action.
  9. Equipment and personnel decontamination procedures.
  10. A proposed schedule for completion of remedial design and for Remedial Action construction, implementation and periodic sampling and reporting.
  11. If this document includes any work that would constitute the "practice of engineering" as defined by N.C.G.S. 89C, the signature and seal of a professional engineer must be included. If this document includes any work that would constitute the "public practice of geology" as defined by N.C.G.S. 89E, the signature and seal of a licensed geologist is required.
- M. Southern Wood Piedmont Company shall provide to the Division the number of additional copies of the proposed Action Plan determined by the Division to be required for distribution to the local health director, register of deeds, and each public library in the county where the Site is located, if requested by the Division. The Division shall also mail notice of the Action Plan to those who have requested notice that such plans have been developed, as provided in N.C.G.S. 130A-310.4(c)(2). The Division will not approve the Action Plan until at least thirty (30) days after public notice was provided.
- N. Within thirty (30) days of receiving notice from the Division of any deficiency in the Action Plan, Southern Wood Piedmont Company shall submit to the Division

information or material sufficient to correct such deficiency.

- O. Southern Wood Piedmont Company shall begin implementation of the Action Plan no sooner than receiving written approval from the Division nor later than sixty (60) days thereafter.
- P. Any requests for modifications of the approved Action Plan must be submitted in writing to the Division, and may not be incorporated or implemented unless and until approved in writing by the Division.
- Q. Southern Wood Piedmont Company shall provide to the Division: weekly written or telephone progress reports each Friday during the soil and waste remedial action if less than one (1) month in duration; quarterly reports during groundwater remedial action, any soil and waste remedial action greater than one (1) month in duration, and any necessary post-remedial maintenance; and a final report with confirmatory sample data documenting complete implementation of the approved Action Plan. The quarterly reports and final report should include, without limitation, complete "as-built" drawings and specifications of all remedial action systems; tabulated laboratory data; the location and depth of samples collected; a description of all field and laboratory quality control/quality assurance procedures; and legible and complete copies of all records of periodic system inspections, laboratory reports, waste manifests and chain of custody documentation generated during the reporting period. Quarterly reports shall be provided by the tenth day after each quarter concludes, with the first quarter commencing on the date of written approval of the Action Plan by the Division.

The final report shall be provided within one (1) month following complete implementation of the approved Action Plan. The Division shall use best efforts to review this submission in a timely manner so that the Division's disapproval or authorization does not affect Southern Wood Piedmont's ability to meet any time schedule or deadline in connection with any of its obligations under this Consent Order. The report shall include a certification under oath by a corporate official of Southern Wood Piedmont Company in charge of a principal business function stating: "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this certification is true, accurate and complete." If the document includes any work which would constitute the "practice of engineering" as defined by N.C.G.S. 89C, the signature and seal of a professional engineer must be included. If the document includes any work which would constitute the "public practice of geology" as defined by N.C.G.S. 89E, the signature and seal of a licensed geologist is required.

Within thirty (30) days of receiving notice from the Division of any deficiency in the reports required by this paragraph or in the implementation of the plans required by this Consent Order, Southern Wood Piedmont Company shall submit to the Division information or material sufficient to demonstrate correction of such deficiencies.

- R. When the Division determines that the following conditions apply, Southern Wood Piedmont Company shall submit, for the Division's approval, a survey plat for recordation which complies with N.C.G.S. 130A-310.8(a):

<u>Condition</u>	<u>Deadline for Submittal to Division</u>
(1) Remedial action or control of groundwater only is required.	Within thirty (30) days of receiving notice from the Division that the remedial investigation is complete.
(2) Remedial action or control of groundwater and another environmental medium is required.	Within thirty (30) days of receiving notice from the Division that non-groundwater remedial action is complete.
(3) Recordation is appropriate as part of the approved remedy.	Within thirty (30) days of receiving notice from the Division to submit such a plat.

- S. When the Division determines that implementation of the approved Action Plan and the final report is complete, the Division will notify Southern Wood Piedmont Company in writing. Thereafter, if Southern Wood Piedmont Company believes it has remediated the Site to current standards as provided in Part 5, Article 9 of Chapter 130A of the North Carolina General Statutes, it may submit a written request to the Division for such a determination, accompanied by the fee required by N.C.G.S. 130A-310.39(a)(2).

## **VII. SAMPLING, ACCESS, AND DATA/DOCUMENT AVAILABILITY**

- A. The Division or its representatives may take split or duplicate samples of any samples collected by Southern Wood Piedmont Company pursuant to this Consent Order. Southern Wood Piedmont Company shall notify the Division not less than ten (10) days in advance of any sampling, assessment or remediation activities. This notification may be given verbally in the field by Southern Wood Piedmont Company to the Division.
- B. To the extent permitted by law, the Division or its representatives may conduct any field activity it deems appropriate in relation to the Site. Southern Wood Piedmont Company may take split or duplicate samples of any samples collected by the Division during such field activity.
- C. While this Consent Order is in effect, Division personnel and their representatives may, in addition to exercising any related legal rights, enter the Site without notice at all times and, while present: review the progress of activities required by this Consent Order; conduct such tests as the Division deems necessary; verify the data submitted to the Division by Southern Wood Piedmont Company; inspect and copy any and all records, files, photographs, operating logs, contracts, sampling and monitoring data,

and other documents relating in any way to this Consent Order; and otherwise assess Southern Wood Piedmont Company's compliance with this Consent Order. All parties with access to the Site pursuant to this paragraph shall comply with all approved health and safety plans and the current U.S. Environmental Protection Agency (EPA) Region IV, Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, May 1996.

- D. Unless a confidentiality claim covering information provided under this Consent Order is made pursuant to law and adequately substantiated when the information is submitted, such information may be made available to the public by the Division without further notice to Southern Wood Piedmont Company. Southern Wood Piedmont Company agrees that under no circumstances shall analytical data generated pursuant to this Consent Order be considered confidential.
- E. In any government enforcement action brought against Southern Wood Piedmont Company, Southern Wood Piedmont Company waives any objections to the admissibility into evidence (but not objections as to the weight) of the results of any analyses of sampling conducted by or for Southern Wood Piedmont Company at the Site or of other data gathered pursuant to this Consent Order.
- F. If Southern Wood Piedmont Company is unable by reasonable efforts to gain access to other property as necessary pursuant to this Consent Order, the Division shall assist Southern Wood Piedmont Company in obtaining access.

## VIII. DELAY IN PERFORMANCE

As soon as Southern Wood Piedmont Company is aware of the potential for delay, it shall submit to the Division written documentation of the reasons for the delay and the efforts made by Southern Wood Piedmont Company to avoid the delay, as well as a time by which such work can be completed. The Division shall review the documentation and shall promptly approve the new schedule if good cause is shown. Good cause may include, but is not limited to, extraordinary weather, natural disasters and national emergencies. At a minimum, good cause does not include normal inclement weather, increases in the cost of work to be performed under this Consent Order, financial difficulty for Southern Wood Piedmont Company in performing such work, failure by Southern Wood Piedmont Company to satisfy its obligations under this Consent Order (whether evidenced by a notice of deficiency or not), the pendency of dispute resolution, acts or omissions of Southern Wood Piedmont Company's contractors or representatives not otherwise constituting good cause, and failure by Southern Wood Piedmont Company or its contractors or representatives to make complete and timely application for any required approval or permit. The burden of demonstrating good cause for delay, and that the delay proposed is warranted, is Southern Wood Piedmont Company's.

- C. Southern Wood Piedmont Company shall provide a copy of this Consent Order to each contractor or other person or entity retained to perform any work under this Consent Order within seven (7) days after the effective date of this Consent Order or the date of retaining their services, whichever is later. Southern Wood Piedmont Company shall condition any such contracts upon satisfactory compliance with this Consent Order. Notwithstanding the terms of any contract, Southern Wood Piedmont Company is responsible for compliance with this Consent Order and for ensuring that such contractors or other persons or entities comply with this Consent Order. Submittal by Southern Wood Piedmont Company of each document pursuant to this Consent Order shall constitute certification by the signatory and by Southern Wood Piedmont Company of the truth, accuracy and completeness of the information contained in that document.
- D. Subject to the reservation of rights in Section X.E. of this Consent Order, upon payment of the amounts specified in Section V. (Reimbursement of Costs) and upon completion of the work specified in Section VI. (Work to Be Performed) of this Consent Order to the satisfaction of the Division, the Department covenants not to sue or take any other civil or administrative action against Southern Wood Piedmont Company for any and all civil liability for injunctive relief or reimbursement of response costs in relation to the Site.
- E. The covenant not to sue set forth in Section X.D. above does not pertain to any matters other than those expressly specified in Section X.D. above. The Department reserves and the Consent Order is without prejudice to all rights against Southern Wood Piedmont Company with respect to all other matters, including but not limited to, the following:
- (1) claims based on a failure by Southern Wood Piedmont Company to meet a requirement of this Consent Order, including but not limited to Section V. (Reimbursement of Costs), Section VI. (Work to be Performed), Section VII. (Sampling, Access, and Data/Document Availability), and Section X. (Additional Provisions);
  - (2) any liability resulting from past or future releases of hazardous substances, pollutants or contaminants, at or from the Site caused or contributed to by Southern Wood Piedmont Company, its successors, assignees, lessees or sublessees;
  - (3) any liability resulting from exacerbation by Southern Wood Piedmont, its successors, assignees, lessees or sublessees, of contamination at the Site;
  - (4) any liability relating to hazardous substances, pollutants or contaminants not present or existing on or under the Site as of the effective date of this Consent Order;
  - (5) criminal liability;

- (6) liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessment incurred by the Department, to the extent permitted by law; and
  - (7) liability for violations of local, State or federal law or regulations.
- F. In the event the Division determines Southern Wood Piedmont Company is in violation of this Consent Order or requirements established pursuant thereto, the Division may: order Southern Wood Piedmont Company to remedy the violation(s) or temporarily or permanently halt implementation of this Consent Order; conduct part or all of the remediation itself, seek cost recovery; and/or take any other action within the Division's enforcement authority regarding inactive hazardous substance or waste disposal sites. In that event, Southern Wood Piedmont Company shall retain all applicable defenses. The dispute resolution procedure set forth in Section IX. above, in addition to applying to all other decisions made by the Division pursuant to this Consent Order, shall also apply to any determination by the Division that Southern Wood Piedmont is in violation of this Consent Order or requirements established pursuant thereto.
- G. To protect the public health or the environment, the Division may order a temporary or permanent halt to implementation of this Consent Order, or order actions within its authority regarding inactive hazardous substance or waste disposal sites in addition to or other than those required hereunder.
- H. All actions required pursuant to this Consent Order shall be in accordance with applicable local, state and federal laws and regulations, unless an exemption regarding particular state or local laws or regulations is specifically provided in this Consent Order now or later.
- I. Southern Wood Piedmont Company agrees to indemnify and save and hold harmless the State of North Carolina, and its agencies, departments, officials, agents, employees, contractors and representatives, including without limitation the State Ports Authority, from any and all claims or causes of action arising from or on account of acts or omissions of Southern Wood Piedmont Company or its officers, employees, receivers, trustees, agents, or assigns in relation to the Site. The State of North Carolina shall give prompt, written notice to Southern Wood Piedmont Company of all such claims or causes of action. Except to the extent this Consent Order constitutes a contract, neither the State of North Carolina nor any agency or representative thereof shall be held to be a party to any contract involving Southern Wood Piedmont Company relating to the Site.

- J. Southern Wood Piedmont Company shall preserve, for at least six (6) years after termination of this Consent Order, all records and documents in its possession or in the possession of its divisions, employees, agents, accountants, contractors or attorneys which relate in any way to this Consent Order. After this six (6)-year period, Southern Wood Piedmont Company shall notify the Division at least thirty (30) days prior to the destruction of any such records and documents. Southern Wood Piedmont Company shall comply with any written request by the Division, prior to the day set for destruction, to continue to preserve such records and documents or to provide them to the Division. Southern Wood Piedmont Company may assert any available right to keep particular records and documents, other than analytical data, confidential.
  
- K. Except as otherwise provided herein, this Consent Order shall not constitute a satisfaction of, or release from, liability for any claim arising as a result of operation, ownership or use of the Site by Southern Wood Piedmont Company, its agents, contractors, lessees, successors or assigns.
  
- L. This Consent Order may not be modified without the written consent of the parties.
  
- M. Except for obligations under Section X. F., G. and J. above, this Consent Order shall terminate when Southern Wood Piedmont Company receives written notice from the Division that all activities required pursuant to this Consent Order have been completed to the Division's satisfaction.

This Consent Order is entered into on the \_\_\_th day of \_\_\_\_\_ 1997:

\_\_\_\_\_  
 William L. Meyer, Director  
 Division of Waste Management  
 North Carolina Department of Environment  
 and Natural Resources

By: \_\_\_\_\_  
 (Signature)  
 \_\_\_\_\_  
 Name of Signatory, Title  
 \_\_\_\_\_  
 Company

c:\wp60file\deferral\swpfin2.aoc (12/3/97)





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW  
ATLANTA, GEORGIA 30303-8909

RECEIVED  
NOV 21 1997  
SUPERFUND SECTION

NOV 17 1997

4WD-PSB

Ms. Pat DeRosa, Head  
Site Evaluation and Removal Branch  
Superfund Section  
Division of Waste Management  
P. O. Box 27687  
Raleigh, North Carolina 29611

Dear Ms. DeRosa:

This is in response to your recent letter concerning utilization of funds under cooperative agreement #V984018-96-1 for activities at NPL-caliber sites that have been deferred to the State of North Carolina in order to pursue and oversee response actions by Potentially Responsible Parties (PRPs). The process you describe in your letter for tracking the deferral costs, recovering these costs from the PRPs, and repayment to the cooperative agreement appears to be a sound approach and should adequately comply with EPA's cost recovery requirements.

As you stated, all work program/schedule revisions to the cooperative agreement must be coordinated with EPA's North Site Management Branch and all expenditures associated with deferral oversight activities should be reported in the quarterly reports submitted to EPA.

We look forward to working with you as we implement this new initiative.

Sincerely,

Rosemary M. Patton  
Project Officer  
State Programs Section

cc: Phil Vorsatz

State of North Carolina  
Department of Environment,  
and Natural Resources  
Division of Waste Management

James B. Hunt, Jr., Governor  
Wayne McDevitt, Secretary  
William L. Meyer, Director



November 4, 1997

Ms. Rosemary Patton  
CERCLA State Programs  
US EPA Region IV  
Waste Division  
61 Forsyth Street, 11th Floor  
Atlanta, GA 30303

Subject: Proposed drawdown and reimbursement of CA funds used in deferral oversight  
(#V984018-96-1)

Dear Ms. Patton:

As you are aware, the State of North Carolina and US EPA Region IV (EPA) recently entered into a Superfund State Memorandum of Agreement (MOA) which outlines a process by which EPA may defer listing sites on the NPL while the State oversees response actions conducted and funded by the Potentially Responsible Parties (PRPs). Where State staff funded under federal cooperative agreements conduct this oversight, the State shall seek to recover all costs incurred in conducting these site-specific activities from the PRPs as agreed in an Administrative Order on Consent (AOC) signed with the State. The purpose of this letter is to propose a process by which the State will track site-specific deferral costs, seek to recover those costs and reimburse the federal program funds from which the expenditures were charged.

We propose to use staff funded under the site assessment portion of the Consolidated Support Agency and Site Assessment Cooperative Agreement (CA) to oversee activities at sites deferred to the State by EPA. A work program schedule revision will be submitted for EPA approval to substitute deferral oversight for other activities currently listed in the CA. Therefore, resources originally assigned to other site assessment tasks will be reassigned to deferral oversight.

Expenditures associated with site-specific deferral oversight will be tracked by the State staff in the same manner that other site assessment project expenditures are currently tracked. Site-specific activities are tracked on a daily basis and recorded monthly on the attached "cost recovery" forms. These forms are compiled on a quarterly basis and hours spent on specific sites are listed in the quarterly report submitted to EPA. Once a site is formally deferred, site

Ms. Rosemary Patton  
November 4, 1997  
Page 2

expenditures recorded on these "cost recovery" forms will be used to generate an invoice to the PRP(s) who have agreed to reimburse the State for oversight costs. A copy of the invoice mailed to the PRP(s) will be mailed to EPA to document State costs.

As set out in our model AOC, the PRP(s) shall submit full payment within an agreed upon number of days of receipt of each invoice. Upon receipt of payment, the State shall submit a copy of the certified or cashier's check to EPA to document reimbursement. Payment received by the State will then be deposited to the site assessment portion of the CA, thus reimbursing the program fund from which expenditures were originally drawn down.

Please let me know if this proposed process for drawdown and reimbursement of CA funds meets EPA's needs for tracking costs associated with deferral oversight. If you need any additional information, I can be reached at (919) 733-2801, ext. 290.

Sincerely



Pat DeRosa, Head  
Site Evaluation and Removal Branch  
Superfund Section

attachment

cc: Regina Hilliard  
Phil Vorsatz

COST RECOVERY DOCUMENTATION SHEET  
 (SUBMIT TO DONNA KEITH)  
 FEDERAL SITES

SITE NAME \_\_\_\_\_  
 EPA ID# \_\_\_\_\_  
 EMPLOYEE NAME \_\_\_\_\_  
 POSITION \_\_\_\_\_  
 PROJECT LEADER \_\_\_\_\_  
 INVESTIGATION DATES \_\_\_\_\_

CHECK TYPE:  
 PA  
 SI  
 ESI  
 HRS DOC PKG  
 REMOVAL COORDINATION  
 REMEDIAL OVERSIGHT  
 BROWNFIELDS  
 DEFERRAL

DOCUMENTATION FOR: \_\_\_\_\_  
MONTH YEAR

EXPENSES INCURRED

Transportation (In-State) \$ \_\_\_\_\_  
 (Out-State) \$ \_\_\_\_\_  
 Subsistence (In-State) \$ \_\_\_\_\_  
 (Out-State) \$ \_\_\_\_\_

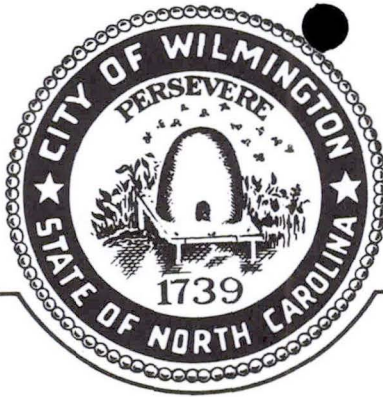
Supplies (Film, Maps, Ice, etc, [attach receipts]) \$ \_\_\_\_\_

Laboratory Samples      Soil: \_\_\_\_\_ organic \_\_\_\_\_ inorganic  
                                     Water: \_\_\_\_\_ organic \_\_\_\_\_ inorganic  
                                     Other: \_\_\_\_\_ organic \_\_\_\_\_ inorganic

ACTIVITY (Attach Daily Breakdown)	DATE(S)	HOURS
1. Background Search, Evaluate Data	_____	_____
2. Prepare Study/Safety Plan	_____	_____
3. Coordinate Site Visit	_____	_____
4. Conduct Field Work:      Field Time	_____	_____
Travel Time	_____	_____
5. Sample Preparation/Lab Delivery	_____	_____
6. Review Analytical Data	_____	_____
7. Perform HRS Scoring	_____	_____
8. Evaluate, Compile and Write Report	_____	_____
9. Supervisor Review	_____	_____
10. Other: _____	_____	_____
	TOTAL:	_____

\_\_\_\_\_  
 Signature of Employee

DATE ENTERED: \_\_\_\_\_



CITY of WILMINGTON  
North Carolina

P.O. BOX 1810  
28402

LEGAL DEPARTMENT  
TDD (910) 341-7873

(910) 341-7820

FAX (910) 341-5824

October 22, 1997

RECEIVED

NOV 05 1997

SUPERFUND SECTION

Ms. Pat DeRosa  
Environmental Supervisor  
Division of Solid Waste Management  
Superfund Section  
North Carolina Department of Environment and  
Natural Resources  
P.O. Box 27687  
Raleigh, North Carolina 27611-7687

Dear Pat:

This will follow-up our discussions concerning groups that might be interested in commenting on any final agreement with Southern Wood Piedmont. For your information, I am attaching a list of groups that the City listed in a Brownfields' application. As we discussed, the City of Wilmington would be interested in receiving a copy of any final agreement and such agreement should be directed to my attention. Thank you for your assistance.

If you have any questions, please let me know.

Sincerely yours,

Thomas C. Pollard  
City Attorney

TCP/jf

Attachment

STAKEHOLDERS IN REDEVELOPMENT  
OF SOUTHERN WOOD PIEDMONT SITE

Nesbitt Courts Residents Association  
Wilmington Housing Authority  
1404 S. 2nd Street  
Wilmington, NC 28401  
(910) 341-7711

Nesbitt Courts Residents Association represents residents of the Nesbitt Courts Apartments which is a project owned and operated by the Wilmington Housing Authority. Nesbitt Courts is located immediately east of the Southern Wood Piedmont site.

\*\*\*\*\*

Long Leaf Homes Good Neighbor Group  
Scott Manning, President  
304 Rutledge Drive  
Wilmington, NC 28412  
(910) 799-3867

Neighborhood based organization serving the Long Leaf Homes area located southeast of North Carolina State Ports and containing approximately 634 housing units. Purpose is to improve Long Leaf Homes neighborhood including upkeep of property and vacant lots, utilizing vacant lots for housing and attracting businesses to vacant industrial and commercial buildings in area.

\*\*\*\*\*

Sunset Park Neighborhood Association  
Hunter Thompson, President  
P.O. Box 274  
Wilmington, NC 28402  
(910) 251-8353

Neighborhood based organization serving the Sunset Park neighborhood located immediately east of the North Carolina State Ports. Purpose is to improve Sunset Park including elimination of State Ports truck traffic through neighborhood.

\*\*\*\*\*

Cape Fear River Watch  
Bouton Baldrige, Riverkeeper  
15 S. Water Street  
Wilmington, NC 28401  
(910) 762-5606

Environmental group organized to improve water quality in  
Cape Fear River.

\*\*\*\*\*

Wilmington Community Coalition  
Rebecca Dunn Reinmann, Executive Director  
P.O. Box 3744  
Wilmington, NC 28406  
(910) 793-1155  
Fax: (910) 395-6008

Umbrella organization created in 1994 to revitalize  
Wilmington's poorest neighborhoods by bringing together  
community members and resource providers (public, private  
and non-profit) to encourage community economic development.  
Membership in the WCC includes representatives from the  
North Fourth Street, Castle Street, Hemingway, Long Leaf  
Park, The Bottom, Dry Pond and Northside/Brooklyn  
neighborhoods.

\*\*\*\*\*

North Fourth Street Partnership, Inc.  
Bolton Anthony, Executive Director  
723 N. 4th Street  
Wilmington, NC 28401  
(910) 251-0731

Organization concerned with the commercial revitalization of  
the North Fourth Street Business District located in the  
Northside/Brooklyn area of the City.

\*\*\*\*\*

The Bottom Neighborhood Association, Inc.  
Mary S. Mosley, President  
1100 Orange Street  
Wilmington, NC 28401  
(910) 762-2884

Organization concerned with the revitalization of The Bottom neighborhood consisting of more than 300 households and 25 places of business. One of its primary functions has been to develop a neighborhood community center at the site of an old bar that was obtained by the City through the Department of Justice's Weed and Seed Program.

012997L/SRSWPS/W



## **AGENDA**

**Expanded Site Investigation (ESI) Meeting  
Southern Wood Piedmont Superfund Site  
Wilmington, North Carolina**

**U.S. EPA Regional Office  
Atlanta, Georgia  
October 7, 1997  
10:30 a.m.**

**1.0 INTRODUCTION**

**2.0 PORTS AUTHORITY PLANS**

**Future plans for the Site**

**3.0 EXPANDED SITE INVESTIGATION (ESI)**

**ESI findings**

**4.0 THE NEXT STEP: AFTER THE ESI**

**Southern Wood Piedmont Plans/Ports Authority Plans/EPA and State Plans**

**5.0 ACTION ITEMS**

10/7/97 ATLANTA MEETING EPA/SWP/BIOGAL/USDA/SPA

ITEM ② S.P.A. PLANS FOR SITE

LAYTON BOSSOLE LOW OF IMPACT DEMAND FOR STORAGE

- HIGH POINTS FOR REGS <sup>NO</sup> SPECIAL PERMITS - PERMS

- PHASED FLEXIBLE DEVELOPMENT

PHASE I EIS NOW BEING DONE IN PA PHASE

(OTHER)

2 YEARS TO EIS AND

1 YEAR PERMITS

1/2 CONTRACTS

} ADD SOME CONCEPT } 3 1/2

CITY PREFERENCE - WHICH PLAN IN PHASE (REMEDIATION) SATISF TO BNL SPA AND CITY

CONDITION - LIMITATION TO INDUSTRIAL USE (HEAVY) CITY ZONING.

ITEM ③ EST RESULTS



GW

? CLEARER FEASIBILITY?

GW ~~CONC~~ <sup>PROXY</sup> SOURCE TO GFC/DUTM

SW

USE AS FRESH?

IS SWP SITE CONTRIBUTING?



Federal  
Trip Notification & Authorization

Prepared by: STUART F PARKER

Today's Date: 10/1/97

\*Use Black Ink or Typewriter only-Staff to fill out first 2 blocks only.

Site Trip

Date of Trip: 10/1/97 through 1/1/98

If trip date changed or cancelled note below:

Trip Date Changed To: \_\_\_\_\_ Cancelled: \_\_\_\_\_

NCD#: NCD 058517467  
City: WILMINGTON

Site Name: SOUTHERN WOOD PIEDMONT - WILMINGTON  
County: NEW HANOVER

Reason for Trip: REMOVAL EVALUATION - SITE VISIT.

Name of Hotel (Overnight Trip): (N) Hotel Telephone Number: ( ) \_\_\_\_\_

Authorized by: [Signature]

Industrial Hygienist

Project Team Leader: STUART PARKER

Assistants: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Attach To Notification Form: 1 copy each: Preliminary Assessment Form (First page only)  
Submit to the Industrial Hygienist Site Map  
PA Transmittal Letter

(Please list appropriate County Health Department contact person to call to advise of trip)

Environmental Supervisor or Health Director to call: Mr. Tom Stich Title: Supervisor <sup>Env. Health</sup>

(Note if Dr., M.P., etc.)

Telephone Number: (910) 343-6666

Notes: Health Department Official Contacted: Tom Stich  
Back Up Letter Required: Yes \_\_\_\_\_ No ✓

Notified Mr. Stich on 10-3-97 (DBL)

Note: Signed original to Data Manager



JERREL J. FREEMAN, P.E.  
Chief Engineer

RECEIVED

SEP 30 1997

SUPERFUND SECTION

September 29, 1997

**MEMORANDUM**

**TO:** Jack Butler, North Carolina Hazardous Section  
Louis Flores, Region IV EPA  
Tom Pollard, City of Wilmington  
Chuck Davis, Southern Wood Piedmont  
Glenn Dunn, POYNER&SPRUILL

**FROM:** Layton Bedsole, Environmental Manager *LB*

**SUBJECT:** North Carolina State Ports Authority  
Conceptual Development Plan  
Former Southern Wood Piedmont Site

Please find attached a conceptual drawing for the development of the City of Wilmington property, formerly operated by Southern Wood Piedmont. This conceptual drawing includes presently undeveloped North Carolina State Ports Authority property located south of the former Southern Wood Piedmont facility.

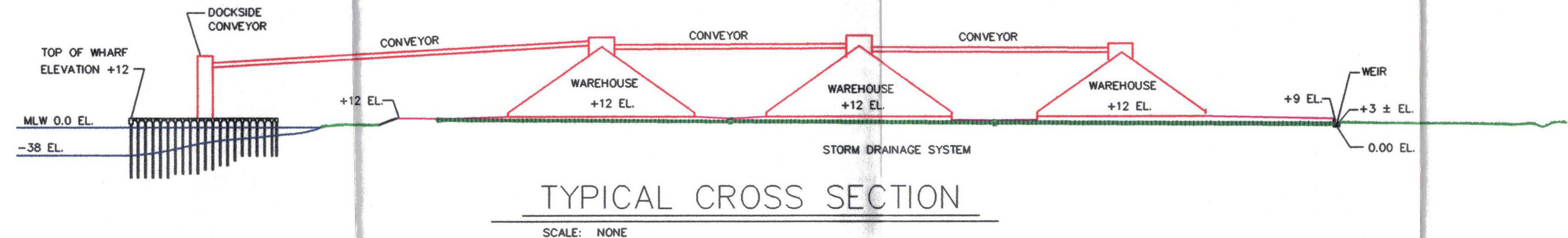
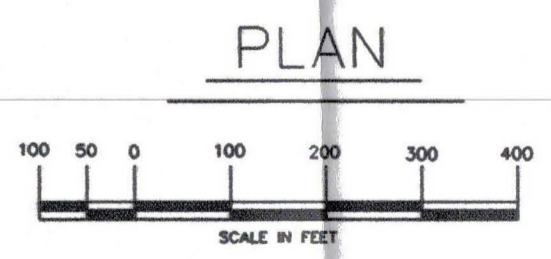
If you have any questions regarding this conceptual drawing prior to the October 7 meeting in Atlanta, please call me at (910) 343-6228.





**LEGEND**

	BUILDINGS
	WATER
	WETLANDS
	LIMIT OF PAVEMENT
	DESIGNATED ROAD ACCESS
	STORMWATER DRAINAGE SYSTEM
	WEIR
	NEW RAIL ACCESS



DEPARTMENT OF ENGINEERING  
 LAND USE STUDY FOR AREA  
 NORTH OF EXIST. PORT FACILITIES

CHIEF ENGINEER  
 JERREL J. FREEMAN, P.E.

PROJ. No. \_\_\_\_\_  
 DESIGNED BY \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 DATE: 9/23/97  
 SCALE: AS SHOWN

SEAL

SHEET 1 OF 1



## MEMORANDUM

To: File  
From: Stuart F. Parker, Hydrogeologist  
Date: September 18, 1997  
Subject: Southern Wood Piedmont  
Wilmington, NC  
NCD 058 517 467  
Summary of Contaminant Distribution

Results of the 1997 Expanded Site Inspection indicate the presence of contaminants in the following areas at the Southern Wood Piedmont site and adjacent surface water pathway:

### Surface Soils:

SVOCs exceed Region III Industrial Soil Ingestion Limits at 6 on-site surface soil locations. These locations include the 1 Landfarm sample, all 3 Creosote/CCA treatment area samples, 1 Area TBS sample 100 feet west of the treatment area, and sample SS-17, adjacent to upper Greenfield Creek (Elevated SVOCs were also detected in other surface soil samples from areas NTA, NTB and TWS, the Track area, the Buried Ditch area, and south of the treatment area, but these concentrations did not exceed the EPA's industrial soil exposure limits).

Dioxin (TCDD Equivalent) exceeded the Region III Industrial Soil Ingestion limit in the Landfarm sample, in 1 of the 3 Creosote/CCA treatment area samples, in the Buried Ditch sample, and in SS-17, adjacent to upper Greenfield Creek (Levels less than the industrial limit were detected in 2 surface soil locations in the undeveloped southern half of the site).

Inorganics analysis detected arsenic concentrations in excess of the industrial limits in all surface soil samples from the Landfarm, the Track area, the Creosote/CCA area, in samples SS-10, SS-12, and SS-20 south and west of these areas, and in sample SS-03, upstream of the Greenfield Creek RR crossing (Elevated Arsenic was also present in Area NTB and Buried Ditch soil samples).

### Subsurface Soils:

Elevated SVOCs were detected in Area NTB, in Creosote/CCA area and adjacent to the dirt road to the south (SB-12), beneath former Petroleum Storage Tank area (SB-11), and adjacent to the Cape Fear River waterfront (SB-20).

### Sediments:

SVOCs exceeded 3x background in drainage ditch and Greenfield Creek sediments from SD-06 (on-site) down to SD-19 (upstream of the tidal gate). SVOCs did not exceed 3x background in Cape Fear River sediments, or in interior wetlands in the south portion of the site (exception: anthracene detected in SD-14, near Greenfield Creek).

Inorganics analysis detected elevated copper and chromium in the drainage ditch and in sediment along the Cape Fear River waterfront, but not in lower Greenfield Creek. No elevated arsenic was detected in these samples.

### Surface Water:

PCBs were reported in 2 surface water samples from upper Greenfield Creek, downstream of the RR crossing. PCBs not detected in the on-site source areas.

### Conclusions:

Surface soil contamination by SVOCs exceeds EPA industrial soil ingestion limits primarily in or adjacent to the site's Creosote/CCA Treatment area, the Buried Ditch, the Landfarm, and at 1 point adjacent to Greenfield Creek. Dioxin exceeds the limits in smaller portions of these same areas. Lower SVOC levels were detected in the other formerly active areas of the site, and lower dioxin levels occurred in 2 non-wetland soil samples on the southern property. SVOCs were confirmed in drainage ditch and Greenfield Creek sediments upstream of the tidal gate and the Cape Fear River, indicating contamination on the uppermost segment of the surface water pathway.

Arsenic concentrations exceed the industrial limits in soils from several formerly active areas of the site, but are not elevated within the surface water pathway. Attribution of PCBs in 2 Greenfield Creek water samples to the site is uncertain.

In summary, concentrations of TCDD-equivalent dioxins, arsenic and creosote remnants exceed Federal limits for industrial use in several surface soil samples at the site. The contaminant levels, particularly in the north-central portion of the site, indicate the need for additional remedial action prior to further site development.

H. Glenn Dunn  
Partner

Direct Dial: 919/783-2842

September 12, 1997

MEMORANDUM

VIA FACSIMILE

TO: Pat Dekosa  
Jack Butler  
Bill Meyer  
Richard Whisnant  
Dennis Meyers  
T.M. "Chuck" Davis  
Raymond Knox  
Greg Kuntz

FROM: Glenn Dunn *Glenn*

RE: September 4, 1997 Meeting Re: Pursuing EPA Deferral and  
Brownfields Remediation for City of Wilmington Property  
Adjacent to Ports Authority, Wilmington, NC

I apologize for the belatedness of this memorandum. The following is a summary of what I believe to be the key points in the above-referenced meeting.

- Concerning the Draft ESI, Black & Veatch's ESI, which was to include review of assessment data provided by Southern Wood Piedmont (SWP), has been completed and circulated by EPA. It was generally agreed that the ESI confirms the assessment provided by SWP and identifies surface water sediment as the primary concern.

- Concerning remediation as a Brownfields project under the new Brownfields Redevelopment Act, Richard Whisnant stated that a prospective developer must meet two criteria to qualify. It cannot have caused or contributed to the contamination and must be a prospective seller or purchaser of the property. Since the SPA already holds title to a substantial area of the contaminated property, there is concern that the SPA may not qualify as a purchaser. Richard stated that he will look further into this issue and determine how much flexibility is allowed under the statute.



## POYNER &amp; SPRUILL, LLC

September 12, 1997

Page 2

There was discussion of the SPA's ability to commit to an adequately specific development design to satisfy brownfields remedial criteria, and to convince EPA to defer the site. Everyone agreed that it is unfeasible for the SPA to present a firm, detailed plan or schedule for development of the site. Dennis Meyers stated that Ports Authority engineers are working on a "conceptual plan" which he expects will be ready by mid-October. It was generally agreed that the "conceptual" site design plan should include with the greatest specificity feasible (1) the range of substances to be handled, (2) the areas that would be filled and paved or otherwise covered with impervious surfaces and the nature of those surfaces, (3) areas that would remain undeveloped, particularly for purposes of stormwater retention, and (4) the projected timing for implementation of development of the site.

- Concerning deferral, Pat DeRosa and Jack Butler stated that the three options for the property are (1) for the EPA to proceed to score the site, which will almost surely then go on the NPL, (2) for appropriate parties to enter into an Administrative Order on Consent (AOC) with the EPA to avoid its being listed on the NPL, or (3) to obtain deferral from the EPA and the appropriate parties sign an AOC with the DWM. The parties were in agreement that the third option is still the approach that should be pursued.

There is concern that the EPA might task the site for HRS scoring in the near future, which would make it too late for deferral. It was agreed that the DWM would take the lead in urging EPA to delay tasking the site.

- Followup steps.

- SPA will prepare conceptual design within the next four to six weeks along the lines stated above.

- Jack Butler will contact his contact at the EPA as soon as possible to inform him that we will be pursuing deferral in a brownfields approach and to request that EPA delay tasking the HRS.

- DWM will review the ESI and any other data necessary to form its own opinion about its adequacy. SWP will provide DWM any overlays or other analysis that it has developed in comparing the ESI with formally developed assessment data.

- DWM will schedule a meeting with RPA in the latter part of September to discuss all assessment data for the site and its adequacy to support deferral and a brownfields approach. Subsequent to the meeting with EPA, DWM will report the outcome of the meeting to the SPA.

# POYNER & SPRUIELL LLP

September 12, 1997  
Page 3

the City of Wilmington, and SWP. At this point, we can discuss the status of the SPA's conceptual design plan for the property and a schedule for the next steps that need to be taken.

/jsh

Southern Wood Piedmont  
Wilmington Site Meeting

9-4-97

<u>Name</u>	<u>Representing</u>	<u>Phone</u>
Pat DeRosa	NC Superfund	(919) 733-2801 x 290
Greg Kuntz	Schnabel Eng. Assoc.	(803) 796-6240 x 14
Raymond Knox	Schnabel Eng. Assoc.	803 796-6240 x 13
RICHARD WATSWANT	DE <del>NR</del>	919 715-4146
Jack Butler	N.C. Superfund	(919) 733-2801 x 293
Ken Meyer	DWM	. 733-4996-202
T.M. "Chuck" Davis	SWP	864-599-1070 ext 105
Glenn Dunn	SWP (P&S)	783-2842
Dennis Myers	NC Atty Gen	733-7408

North Carolina Department of Environment, Health, and  
Natural Resources

William L. Meyer, Director  
Solid Waste Management Division

To: Jack Butler

Date: 2/3/97

Please:

- |  |  |
|--|--|
| <input type="checkbox"/> Draft a reply for my signature          | <input type="checkbox"/> For your information    |
| <input type="checkbox"/> Take appropriate action                 | <input type="checkbox"/> See me about attached   |
| <input type="checkbox"/> Approve                                 | <input type="checkbox"/> Handle and report to me |
| <input type="checkbox"/> Note and return attached material to me |  |

Remarks:

Chuck Davis Southern Wood Piedmont

- INITIATED bio remediation on disposal pits-lagoons on Gulf State will send copy of their clean up efforts, are not asking us to do anything - it is a vol. effort/clean on their part - just wanted us to know they feel that they can do it without our help.
- stated that EPA had established more than 20 wells, most at the same locations of existing wells, it is his suspicion that EPA is repeating and assisting rather than fill in the gaps - AND SWP will ultimately fight like heck if EPA attempts to request require them to pay for ours or rather than fill in data gaps (ie not accept their previous work) also stated that EPA told them it would be approximately a year before the data would be available

MEMORANDUM

To: File  
From: Stuart F. Parker, Hydrogeologist *SFP*  
Date: November 22, 1996  
Subject: Southern Wood Piedmont - Wilmington  
NCD 058 517 467  
Expanded Site Inspection - State Oversight

SFP returned to the site on Thursday, 11/21/96, arriving at 14:30. The drilling rig was inactive and the drillers were steam-cleaning auger sections. Louis Florez was absent, but Andrew Grimmke of Black & Veatch was observing the steam cleaning process. He reported that all but 2 of the existing wells had been sampled by Monday, and that Kevin Brown and Frankie Jewell had finished sampling and left the site on Tuesday.

The drillers had arrived and set up by Tuesday, and had completed their first well cluster, MW-40, MW-41, and MW-42, at Landfarming Areas 1 and 2. The presence of a shallow groundwater table necessitated minor adjustments to the monitoring well specifications, in order to get the screened shallow interval as close to the water table as possible. The drillers were anticipated to begin setting up at the next station in approximately 1 hour. SFP left for the Old ATC Refinery site at 15:11, but was not able to manage a return to the SWP site that day.

MEMORANDUM

To: File  
From: Stuart F. Parker, Hydrogeologist  
Date: November 18, 1996  
Subject: Southern Wood Piedmont - Wilmington  
NCD 058 517 467  
Expanded Site Inspection - State Oversight

SFP spoke with Cindy Gurley on the morning of Friday, 11/15/96. She reported that Louis Florez was overseeing activities at the site. Already, fish tissue, surface soil and subsurface soil sampling had been completed. Sampling of the existing monitoring wells was projected to be completed by 11/18 or 11/19. Black & Veatch was having a problem with their drilling contractor, but monitor well drilling was projected tentatively to begin between Thanksgiving and Christmas. Cindy had decided not to visit the site because LF was already there overseeing.

SFP arrived onsite at 14:00, en route to the Old ATC Refinery site. Black & Veatch personnel Kevin Brown and Frankie Jewell were securing samples for overnight shipment to the contract laboratory. Louis Florez had already left the site.

Robert Joe of B&V had caught the fish for tissue sampling during the previous week (11/4-8). KB and FJ had sampled most of the existing monitoring wells designated in the ESI workplan, and expected to finish on Monday after working through the weekend. MW-11A reportedly had a petroleum-like odor

In the absence of the drilling contractor, Environmental Explorations, split spoon soil samples had been collected manually from the surface and from 2-4 feet deep at the designated test boring areas. Unexpectedly, it turned out that the drillers were returning to the site the following Monday, 11/18/96. Robert Mangum, Carter Helm, or Joe Slackerman could be reached at 1-800-350-6590. SFP continued on to the Old ATC Refinery site at 14:30.

MEMORANDUM

To: File  
From: Stuart F. Parker, Hydrogeologist  
Date: October 31, 1996  
Subject: Southern Wood Piedmont - Wilmington  
NCD 058 517 467  
Expanded Site Inspection - State Oversight

*SFP 11/4*

SFP spoke with Cindy Gurley, USEPA Region IV regarding the planned remedialization to the site and the ESI workplan. She projected that ESD would be at the site to collect fish tissue samples beginning on Monday, 11/4. Louis Florez from EPA would be at the site for the collection of surface soil, subsurface soil, and surface water samples on 11/11-11/16. No work was planned from 11/16 to 11/29. Drilling was scheduled to begin in Early December.

Cindy clarified the workplan at SFP's request:

- Dioxin testing was planned for on-site soils, but not for the aquatic tissue samples.
- Tissue samples get VOC, Semi-VOC, and inorganic analysis.
- She will send me the calendar once it is fax-transmittable.



State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



October 31, 1996

Mr. Tom Stitch  
Environmental Health Supervisor  
New Hanover County Health Department  
2029 S. 17th Street  
Wilmington, NC 28401

FILE COPY

RE: Expanded Site Investigation  
Southern Wood Piedmont  
NCD 058 517 467

Dear Mr. Stitch:

David Lilley of the NC Superfund Section left a message on your voice mail today to notify you that the US EPA will conduct a site inspection of the subject site located in New Hanover County, North Carolina. The inspection will be conducted from November 1, 1996 through February 1, 1997 by Cindy Gurley of the US EPA Region IV.

The purpose of the inspection is to determine if the site poses a hazard to public health or the environment because of releases of contaminants to soil, surface water, groundwater, or air. You may want to have your representative meet the inspection team at the site. If so, please contact Cindy Gurley at (404) 562-8817 and she will coordinate a meeting. I am enclosing background data on the site for your information.

If the inspection indicates the need for future study of the site, we will contact your office to advise. If you have any questions, please don't hesitate to call David Lilley or me at (919) 733-2801.

Sincerely,

Pat DeRosa, Head  
Site Evaluation and Removal Branch  
NC Superfund Section

Enclosures

cc: Phil Prete  
Doug Holyfield  
Pat Williamson  
Scott Ross  
David Lilley  
Donna Keith

P.O. Box 27687,  
Raleigh, North Carolina 27611-7687  
Voice 919-733-4996.



FAX 919-715-3605  
An Equal Opportunity Affirmative Action Employer  
50% recycled/10% post-consumer paper



Federal  
Trip Notification & Authorization

Prepared by: SF Parker

Today's Date: 10/29/96

\*Use Black Ink or Typewriter only-Staff to fill out first 2 blocks only.

~~AFM~~ Nov. 1 - Feb 1, 1997 Site Trip.  
Date of Trip: November ~~October 20~~  
If trip date changed or cancelled note below:  
Trip Date Changed To: \_\_\_\_\_ Cancelled: \_\_\_\_\_  
NCD#: 058517467 Site Name: Southern Wood Piedmont Wilmington  
City: Wilmington County: New Hanover  
Reason for Trip: Expanded Site Inspection - Oversight

Name of Hotel (Overnight Trip): \_\_\_\_\_ Hotel Telephone Number: ( ) \_\_\_\_\_  
Authorized by: David B. Kelly  
Industrial Hygienist  
Project Team Leader: Cindy Gurley EPA REGION IV (404) 562 8817  
Assistants: SF Parker (oversight only)

Attach To Notification Form: 1 copy each: Preliminary Assessment Form (First page only)  
Submit to the Site Map  
Industrial Hygienist PA Transmittal Letter

(Please list appropriate County Health Department contact person to call to advise of trip)  
Environmental Supervisor or Health Director to call: Mr. Tom Stich Title: Env. Health Supervisor  
(Note if Dr., M.P., etc.)  
Telephone Number: (910) 343-6666

Notes: Health Department Official Contacted: Tom Stich's voice mail  
Back Up Letter Required: Yes  No \_\_\_\_\_  
Notified Mr. Stich via voice mail on  
10-31-96 (DBL)  
Note: Signed original to Data Manager

October 16, 1996

TO: Jack Butler  
FROM: Stuart F. Parker *S.F.P.*  
RE: Addendum to Chronology of Events  
Southern Wood Piedmont, Wilmington  
May 31, 1996 - October 10, 1996

May 31, 1996 Letter from Arnoll, Golden & Gregory (SWP Attorney) to EPA, requesting 30-day extension of existing 60-day negotiation moratorium on EPA response activity at SWP site.

June 6, 1996 Letter from NC State Ports Authority notifying Secretary Jonathan B. Howes of Ports Authority interest in purchasing City of Wilmington parcel of SWP site.

June 12, 1996 Letter from USEPA Region IV (Rolando Bascomb) notifying SWP Attorney of EPA's decision to undertake Expanded Site Inspection at SWP site.

June 18, 1996 Fax transmission from NC Superfund Section (Jack Butler) to EPA Region IV (Bernie Hayes): Copy of Letter from Jonathan B Howes, NCDEHNR, to John Hankinson, EPA Regional Administrator, RE: Brownfields Initiative.

June 19, 1996 NC Superfund Section memorandum (SFP) summarizing comments on Chemrisk Risk Assessment Reports, ViroGroup Site Assessment report, and Remedial Action Plan presented May 1996.

September 25, 1996 Letters from EPA to NC State Ports Authority and City of Wilmington, summarizing ESI sampling schedule and start date.

October 3, 1996 ESI contractor mobilizes drilling equipment onto site; EPA (C Gurley) and NC Superfund Section (SFP) personnel visit site.

October 10, 1996 EPA (Cindy Gurley) informs NC Superfund Section (SFP) that ESI sampling suspended due to flood conditions at site. ESI sampling to be rescheduled after budget revisions completed by EPA.

Pat./Stuart



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
100 ALABAMA STREET, S.W.  
ATLANTA, GEORGIA 30303-3104

RECEIVED  
SEP 27 1996  
SUPERFUND SECTION

September 25, 1996

4WD-WPB

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Layton Bedsole  
North Carolina State Port Authority  
Post Office Box 9002  
Wilmington, North Carolina 28402

SUBJ: Southern Wood Piedmont  
Wilmington, New Hanover County, North Carolina  
EPA ID No.: NCD 058 517 467

Dear Mr. Bedsole:

The United States Environmental Protection Agency (EPA), pursuant to the authority and requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42, U.S.C. §9601 et seq., as amended by the Superfund Amendments and Reauthorization Act (SARA), Public Law 99-499, is planning to conduct an investigation of the above-referenced site.

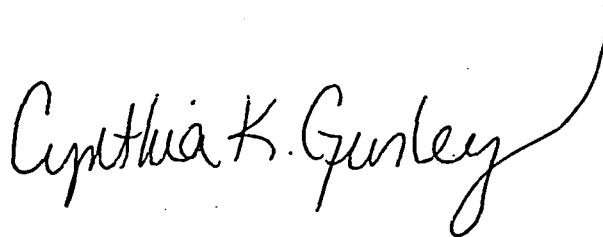
As per our telephone conversation on September 25, 1996, EPA was granted permission for access to the Southern Wood Piedmont site beginning on October 2, 1996 and continuing through the completion of the investigation or around November 30, 1996. Activities to be conducted during the investigation include:

1. Inspect, sketch and photograph the premises;
2. Collect sediment, surface soil, subsurface soil, groundwater and biological samples;
3. Drilling of holes and installation of monitoring wells for subsurface investigation;
4. Transporting equipment onto and over the property, including trucks, drill rigs, and sampling equipment as necessary to accomplish the activities described above;
5. Conducting any other activity deemed necessary by the EPA.

The above sampling activity will be conducted by personnel from EPA Region IV's Alternative Remedial Contracting Strategy (ARCS) contractor. Mr. Robert Mangum of Black & Veatch Waste Science, Inc., will pick up the property keys on October 2, 1996 from the City Attorneys office and can be contacted at (770) 643-2305. As per our conversation split samples were made available, but were declined. A copy of the proposed sampling plan is enclosed.

If you have any questions, please contact me at (404) 562-8817  
Your cooperation in this matter is appreciated.

Sincerely,

A handwritten signature in black ink that reads "Cynthia K. Gurley". The signature is written in a cursive style with a long, sweeping flourish at the end.

Cynthia K. Gurley  
NC Project Officer

Enclosure

cc: Rolando Bascumbe, EPA  
Robert Mangum, BVWST  
Pat DeRosa, NCDEHNR

**Southern Wood Piedmont  
Wilmington, New Hanover County, NC**

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Sep 29, '96					Oct 6, '96								
							M	T	W	T	F	S	S	M	T	W	T	F		
1	First mobilization	1d	10/2/96	10/2/96		Andrew, Franki, Robert														
2	Surface, subsurface sampling	8d	10/3/96	10/12/96	1	Andrew, Franki, Robert														
3	1st 1/2 sediment sampling.	8d	10/3/96	10/12/96		Andrew, Franki, Robert														
4	1st 1/2 Monitoring well installa	8d	10/3/96	10/12/96		Andrew, Franki														
5																				
6	Second mobilization.	1d	10/16/96	10/16/96		Eric, Joe, Paul, Franki														
7	2nd 1/2 Monitoring well install	8d	10/17/96	10/26/96	6	Eric														
8	2nd 1/2 sediment sampling.	8d	10/17/96	10/26/96		Paul, Joe, Franki														
9	Surface water sampling.	8d	10/17/96	10/26/96		Paul, Joe, Franki														
10	1st 1/2 Groundwater sampling	8d	10/17/96	10/26/96		Paul, Joe, Franki														
11																				
12	Third mobilization.	1d	10/30/96	10/30/96		Robert, Ben, Franki														
13	2nd 1/2 Groundwater samplin	8d	10/31/96	11/9/96	12	Robert, Ben, Franki														
14	Biological sampling.	8d	10/31/96	11/9/96		Robert, Ben, Franki														
15	QA/QC sampling.	8d	10/31/96	11/9/96		Robert, Ben, Franki														
16	Target information research.	8d	10/31/96	11/9/96		Robert, Ben, Franki														
17	Surveying oversight.	8d	10/31/96	11/9/96		Robert														

**RECEIVED**  
**SEP 27 1996**  
**SUPERFUND SECTION**

Project: SWP, Wilmington, NC Date: 9/25/96	Task		Summary		Rolled Up Progress	
	Progress		Rolled Up Task			
	Milestone		Rolled Up Milestone			

SPL 20 20 03-44711 BLDG

P. 2

Southern Wood Piedmont  
Wilmington, New Hanover County, NC

Oct 13, '96							Oct 20, '96							Oct 27, '96							Nov 3, '96							Nov 10, '96						
S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F
Andrew, Frankl, Robert																																		
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Project: SWP, Wilmington, NC Date: 9/25/96	Task		Summary		Rollled Up Progress	
	Progress		Rollled Up Task			
	Milestone		Rollled Up Milestone			





# South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.  
2600 Bull Street, Columbia, SC 29201  
Phone: (803) 734-5200  
Emergency & Holidays: (803) 253-6488

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050-0039. Expires 9-30-96

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. N   C   D   0   5   8   5   1   7   4   6   7		MANIFEST DOCUMENT NO. 0   0   5   3   4		2. Page 1 of 1		Information in the shaded areas is not required by Federal law, but is by State law.	
3. Generator's Name and Mailing Address Southern Wood Piedmont Company-Wilmington Foot of Greenfield Street Wilmington, NC 28401		4. Generator's Phone		6. US EPA ID Number		A. State Manifest Document Number		B. State Generator's ID	
5. Transporter 1 Company Name Laidlaw Environmental Services (IG) Inc.		7. Transporter 2 Company Name		8. US EPA ID Number		C. State Transporter's ID		D. Transporter's Phone 864-587-1999	
9. Designated Facility Name and Site Address Laidlaw Environmental Services of South Carolina, Inc. Route 1, Box 255 Pinewood, South Carolina 29125		10. US EPA ID Number		11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No. Type		13. Total Quantity	
				14. Unit Wt/Vol		15. Waste No.			
				a. R.Q. Hazardous Waste, Solid, n.o.s. (PPE, Plastic and Debris contaminated with F032), 9, NA3077, PGIII		0 0 2 D M		1910046	
				b. R.Q. Hazardous Waste, Liquid, n.o.s. (Water contaminated with F032) 9, NA3082, PGIII		0 0 5 D M		120100165	
				c.					
				d. 24 HR EMERGENCY CONTACT CHEM TREC 1-800-424-9300					
				j. Additional Descriptions for Materials Listed Above		k. Handling codes for wastes listed above			
				P   W   0   0   1   7   3   4   0   0   1		P   W			
				P   W   0   0   1   7   3   5   0   0   1		P   W			
				15. Special Handling Instructions and Additional Information W0# 208969				ON-SITE INSPECTOR S.C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL	
				16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.				Date 10/18/96	
		Printed/Typed Name HENRY O. PHILLIPS JR		Signature <i>Henry Phillips</i>					
		17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>William Jackson</i>				Date 10/18/96	
		Printed/Typed Name WILLIAM JACKSON		Signature <i>William Jackson</i>					
		18. Transporter 2 Acknowledgement or Receipt of Materials		Signature				Date	
		Printed/Typed Name		Signature					
		19. Discrepancy Indication Space 14, P		a. 900 lbs.		b. 2010 lbs.			
		20. FACILITY Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.		Signature <i>C. Moses</i>				Date 10/18/96	
		Printed/Typed Name C. Moses		Signature <i>C. Moses</i>					

POYNER & SPRUILL, L.L.P.  
ATTORNEYS AT LAW

3600 Glenwood Avenue  
Raleigh, North Carolina 27612  
Mailing Address:  
Post Office Box 10096  
Raleigh, North Carolina 27605-0096  
919/783-6400  
Fax: 919/783-1075  
Offices:  
Raleigh/Rocky Mount/Charlotte

H. Glenn Dunn  
Partner

Direct Dial: 919/783-2842

August 25, 1997



Mr. William L. Meyer, Director  
Department of Environment,  
Health, and Natural Resources  
Division of Solid Waste Management  
Post Office Box 27867  
Raleigh, NC 27611-7687

Re: Brownfields - City of Wilmington Property Adjacent to State Ports Authority

Dear Bill:

I am writing this letter to reinitiate discussions regarding State Ports Authority's ("SPA") possible acquisition of the above-referenced property in the context of a brownfields agreement. The SPA remains very interested in purchasing the property, and the City of Wilmington is willing to sell it. As you probably remember, representatives of the SPA, Wilmington and Southern Wood Piedmont ("SWP"), a former occupant of the property, met with you and representatives of the EPA at the Ports Authority offices on May 24, 1996. During that meeting, we discussed the potential for developing the property as a brownfields project or otherwise applying flexible remedial standards and providing the SPA liability protection. The EPA stated that it first wanted to make sure that assessment of the contamination performed by SWP's contractor was adequate. Since that time, the EPA has been provided all assessment reports and data. We have been told that the results of the review should be available within the next few weeks.

In the interim, House Bill 1121, the *Brownfields Property Reuse Act*, has been passed by the General Assembly. The SPA, Wilmington and SWP plan to meet soon to discuss applicability of the Act to this property and the SPA's tentative plans for its development. As you and I discussed by phone, the public benefits of such a project are great and it otherwise seems to be a high-priority candidate for a brownfields agreement, particularly since the request was made and discussions began well over a year ago.

Please accept this letter as expression of the above parties' continued interest in a possible brownfields agreement and their desire to further discuss it with the Division of Waste Management. After we have met and, preferably, after receiving EPA's analysis of the assessment reports, we will contact you to discuss the matter further. In the interim, if you have



Mr. William L. Meyer  
August 25, 1997  
Page 2

any criteria or procedures for considering Brownfields candidates, I would appreciate your sending them to me.

We look forward to discussing this matter further with you.

Sincerely,

A handwritten signature in cursive script, appearing to read "H. Glenn Dunn".

H. Glenn Dunn

HGD/jsh

cc: Chuck Davis  
Tom Pollard

MEMORANDUM

To: File  
From: Stuart F. Parker, Jr. *Stuart*  
Date: June 19, 1996  
Subject: Southern Wood Piedmont - Wilmington  
NCD 058 517 467  
Review and Comment on May 1996 Submittals:  
ViroGroup Assessment Report;  
ChemRisk Risk Assessment Reports;  
ViroGroup Remedial Action Plan

ViroGroup has completed several groundwater, soil and surface water sampling investigations at the project site, results of which are summarized in the NC Superfund Section's 1995 Site Inspection Prioritization (SIP) report. Subsequent assessment activities at the site are summarized in ViroGroup's May 1996 report.

Post-SIP activity by ViroGroup included resampling of landfarm area soils at the site, in order to evaluate the decay of PAH semi-volatiles, dibenzofurans, and dibenzodioxins. Additional residual soil sampling was completed at the former Treated Wood Storage (TWS) Area B, and at the site's former Production Area. ViroGroup sampled surface water in the site's drainage ditch and Greenfield Creek, south of the site, and collected sediment samples at intervals along the Cape Fear River, both upstream and downstream of the site.

In May, 1996, ChemRisk (a division of McLaren Hart) of Portland, Maine, published a human health and ecological risk assessment report on the site. The risk assessments utilized Virogroup and other historical sampling data from the site, but also drew extensively on the SIP report for historical and other background information regarding the facility. Based on the data, and ChemRisk's assumptions, the risk assessment concluded that the site contaminants pose no significant risk of human exposure or impact on fisheries or the local environment.

ViroGroup has completed a Remedial Action Plan for the site, based on the risk assessment report and the accumulated analytical data. Their recommendation is that the site be developed for industrial use by the State Ports Authority, with no additional remediation activity other than filling and/or paving, plus site security.

SFP reviewed the above 3 reports, copies of which were submitted to the NC Superfund Section earlier this month. The purpose of the review was

1. To identify any discrepancies between reported site conditions and findings made in the course of Superfund Section and EPA Region IV assessment activities.
2. To comment on Virogroup's and ChemRisk's interpretations of data and conclusions regarding recommended site disposition.
3. To identify any additional data collection requirements during ongoing assessment of the site.

What follows is my collection of comments on specific passages in each of the 3 reports:

I ViroGroup Assessment Report :

Page 3, Par 1: V concludes that inorganics at area TWS B are at background level, based on a USGS report. However, no comparable off-site surface or subsurface soil samples have been collected to corroborate this. Sample SS-3 is a ditch sediment sample. Although it was used in the SIP report, additional background surficial soil sampling is necessary to characterize site conditions.

Page 4, Par 2: V elected not to sample the Production Area and TWS B soils for polychlorinated dibenzodioxins (PCDD) or polychlorinated dibenzofurans (PCDF) because none of the area samples contained detectable pentachlorophenol. No background samples have been collected for these analytes, however, for comparison to the landfarm areas.

Page 8, Par 1: The data bear out the continuing decay of many PAH species at the landfarms. However, 5 PAH species remain above the State Inactive Sites Branch's Remediation Goals (RG's) for soil.

PP 9-10: PCDD and PCDF levels in the landfarm soils have remained relatively steady over time. Hexa-CDF, Hepta-CDF, penta-CDD, Hexa-CDD, and Hepta-CDD are above their established RGs.

Page 11: Sediment sample SS-1 in Greenfield Creek has been described as a background sample because of its location. However, the creek's history of tidal backflow calls this into question, especially because the sample is close to the mouth of the site's drainage ditch, and adjacent to a creosote-treated railroad bridge. SS-1 may not be representative of background conditions in the waterway, which may be better represented farther upstream. Similarly, the location of NUS background sediment sample SWP-BK-51, collected in the creek in 1985, was not recorded precisely enough to rule out back-contamination.

Page 12, Par 1: Repeat sediment sample SS-10A had lower PAH levels than sample SS-10. However, SS-10A's chromium, copper, and arsenic levels are still elevated.

Page 12, Par 3: 1992 sediment samples observed to be stained/discolored run from the old ditch, down to Greenfield Creek, and to location SS-11, supporting release attribution to the site.

Page 13, Par 1: Staining and PAH detection in Cape Fear River sediment sample SS-14, located at the Highway 74 bridge, was interpreted to indicate that tetra- and pentacyclic PAH compounds, pyrogenic species characteristic of coal tar and creosote operations, are ubiquitous upstream of the site in the waterway. However, additional samples closer to the site contained much lower levels of PAH. Note also that SS-14 is directly downriver of the Wilmington Coal Gas Plant Site (NCD 986 188 910). The Superfund preliminary assessment of this site, which still contains an estimated 8798 cu. yd. of coal tar, indicated visible coal tar spillage adjacent to the river. SS-14 is therefore considered to be non-representative of background conditions in the Cape Fear River, since its pyrogenic PAH content suggests localized contamination by the coal gas site.

Page 13, Par 1: From the discussion of the 1984 USGS report, it is not clear whether their study included river sediments as well as soils.

Page 14, Par 2: Virogroup concludes that multiple potential PAH sources exist around the site. While this is true, the data also indicate that SWP is a contributing party. This is supported by the distribution of pyrogenic (4-5 ring) PAH compounds in Greenfield Creek, which I described in the SIP report.

## II ChemRisk Risk Assessment Report - Human Health:

General: This risk assessment report uses the NC Superfund Section's SIP report extensively as a reference source. Dave Lilly, the NC Superfund Section's Industrial Hygienist, has separately reviewed the report for risk assessment methodology and appropriate use of quantitative data.

Page 2-3, Par 3: CR correctly cites the SIP conclusion that multiple sources for total PAH are present in the vicinity of the site. However, the passage neglects to mention that the pyrogenic PAH species were detected both onsite and in Greenfield Creek during sediment sampling activities in 1992.

Page 2-7, Par 2: On-site soil sampling: Area NTA is assumed to have been inactive throughout the site's history, and therefore suitable as a background sample location. This does not account for site use predating SWP, nor for incidental contamination potentially occurring during site activity or closure. Also, New Jersey may not be the most appropriate standard for ambient soil PAH.

Page 2-8: Cites EPA's 12/94 report: "Equilibrium Partitioning Approach to Predicting Metal Bioavailability in Sediments and the Derivation of Sediment Quality Criteria for Metals. (EPA 822-D-94-002)(EPA Office of Water/EPA Office of Research and Development).

Page 2-8, Par 3; Page 3-1, Par 1; Page 4-10, Par 2: References are incorrectly cited; Reference dates don't match.

Pp. 4-2 to 4-3: Incorrectly states that no water-supply wells operate within 4 miles of the site.

Table 4-5: Soil Contaminant Maxima: Some of the soil contaminant levels cited by ChemRisk match those listed in SIP Table 4 (Soil and Sediment Contaminant Summary), while others (e. g., benzo-a-pyrene) are lower. This may be due to the assessment differentiating between soil contaminant maxima in surface versus subsurface soil samples. Dave Lilly is spot-checking specific data usage in the RA process.

Appendix B - Risk Profiles, is missing pages 1, and 3 through 10.

### III ChemRisk Risk Assessment Report - Environment:

Page 4-2: Tidal gate at mouth of Greenfield Creek reportedly was repaired in 1993, restricting tidal backflow into the creek from the river, and thereby restricting biotic community of the creek. However, large fish and evidence of fishing (litter, crab pots) were observed in the creek by EPA personnel as recently as Spring 1995. Significant backflow of river water to the creek was observed during rising tide when NCDEHNR personnel revisited the site in May 1996, though passage of adult fish did appear to be prevented by chain link on both sides of the control structure. The risk assessment assumes that no fishing takes place along the creek.

Page 4-8, Par 1: The passage parallels the distinction, presented in the SIP, between 2-3 ring and 4-6 ring PAH species, the former (petrogenic) representing petroleum and the latter (pyrogenic) associated with creosote / coal tar. The paragraph then argues that pyrogenic PAH in sediment sample SS-2 demonstrates the ubiquity of pyrogenic PAH within the waterway. However, the position of SS-2, along with the historical occurrence of tidal backflow, makes this sample questionable as a background.

Page 4-8: Cites Cape Fear River sediment sample SS-14, located at the Highway 74 bridge, as compelling evidence of ubiquitous pyrogenic PAH upstream of the site. As described in reply to the post-SIP ViroGroup assessment, however, SS-14 is directly downriver of the Wilmington Coal Gas Plant Site (NCD 986 188 910), where residual coal tar and surface spillage is indicated. SS-14 is therefore considered to be non-representative of background conditions in the Cape Fear River, since its pyrogenic PAH content suggests localized contamination by this site.

Pp 4-21, 4-23: Again, contradictory evidence regarding the biotic community and possible fishery on Greenfield Creek.

Page 4-23: Study assumes piscivorous mammals are rare in the creek system, despite the observed presence of raccoon tracks.

Page 4-25: ... and (5) this is a large, long-lived, endangered, bottom feeding fish.

Table 4-3: See previous comments on sample SS-14.

Pp. 5-3 to 5-4: Distribution of pyrogenic versus petrogenic PAH in ditch and Greenfield Creek. Exceedences of benchmarks may show a pattern, as described in the report. However, both petro-PAH (fluoranthene, phenanthrene) and pyro-PAH (benzo(a,h)anthracene, benzo-a-pyrene, and benzo-b-fluoranthene) increase from sample SS-7 (ditch) to SS-9 (creek). If petroleum interference existed, only the petro-PAH would increase. If other pyro-PAH sources contributed, then only pyro-PAH would be expected.

Page 5-4, Section 5.1.2: Bioavailability: Sediment samples collected from the creek by ViroGroup in December 1992 were analyzed for SEM/AVS ratio. According to page 9.9 of the 1994 EPA report on bioavailability, this time of year would correspond to the seasonal minimum of available volatile sulfide, and therefore the maximum bioavailability of inorganic contaminants to interstitial water and uptake by organisms. At other times of the year, the available sulfide would increase and the ratio would fall as more metals were bound into insoluble sulfides.

### III ViroGroup Remedial Action Plan :

Page ES-1, Par 3: No mention of the DNAPL layer, which ranges up to approximately 5 feet in thickness.

Page ES-2, Par 3: Site-specific parameters: What about benzo(a)pyrene ? Dibenzofurans ? Dibenzodioxins ?

Page ES-3: In addition to the a locking vehicle gate and site security monitoring, the site should be equipped with a fence sufficient to prevent trespassing by pedestrians.

Page 2: Installation of sheet piling: Report indicates this may or may not be undertaken.

Page 3, Par 3: Note that railroad ties, suggesting unexcavated soils, are still visible in or near the former production area.

Page 5, Section 2.1.2: Discolored soils previously reported in areas NTA and NTB indicate that some incidental contamination has occurred at these areas. Therefore, soil samples from there may not yield background concentrations of site contaminants, as was also claimed in the Virogroup assessment report.

Page 6, Par 1: The NC Inactive Hazardous Waste Site Branch's soil cleanup goal for arsenic is 4.6 mg/kg.

Page 7: NUS background sample on Greenfield Creek: How far upstream of the ditch/creek junction was it ? Sample SS-1, reported to be a background sample, was very close to the junction, and might have been contaminated by tidal flow reversal in the creek.

Page 7, Par 2: Sediment sample SS-14 contaminants probably originated from nearby Wilmington Coal Gas Plant Site. Pyro-PAH not at background levels.

Page 9: Site is not fenced sufficiently to keep out pedestrians or bicycles.

Page 12: How continuous will the sheet piles be ? What about cement/bentonite grouting to seal around the piling ?

Table 5: What about chlorodibenzofurans and chlorodibenzodioxins ?

Summary: Based on the review of these 3 reports, the following key points are evident:

1. EPA and ChemRisk evidence disagree on the status of Greenfield Creek as a fishery. This possibility is not addressed in the risk assessment.
2. ChemRisk cites EPA studies and existing sampling data to argue that inorganics in Greenfield Creek sediments are generally not bioavailable. They also claim that organics would not bioaccumulate in potentially impacted food chain or environmental species. Evaluation of these considerations is outside the scope of the HRS.
3. ViroGroup and ChemRisk have presented questionable arguments regarding ambient levels of PAH in the Greenfield Creek and Cape Fear River systems, apparently attempting to challenge even partial attribution of semi-volatile organic contaminants to the site. Only partial attribution is required for HRS purposes. Additional background sampling in the Greenfield Creek system may be indicated.
4. Chlorodibenzodioxin and chlorodibenzofuran species persist at the landfarm but have not been sampled in the source areas. The lack of good background soil samples, both for these and for all of the other site-specific parameters, is also a significant data gap at this site.

cc: Jack Butler  
Pat DeRosa



**GOVERNOR AND SECRETARY LOG LETTERS**

TO: Jack Butler

DATE: 6/26/96

FROM: Pat Williamson

RESPOND BY: 7/8/96

Please:

- Draft a reply for Governor's signature and return to me
- Reply, noting the letter was referred to the division by the Governor. Prepare response for William L. Meyer's signature (copy to Governor and Secretary)
- Draft a reply for Secretary's (or Deputy or Asst. Secretary) signature and return to me
- Reply, noting the letter was referred to the division by the Secretary (or Deputy or Asst. Secretary). Prepare response for William L. Meyer's signature (copy to Secretary or as appropriate)

**Format Instructions for Governor**

Date - center 3 spaces below Office of the Governor

Indent paragraphs 5 spaces

Ragged right margin - no justified right margin

Last paragraph, last sentence - My warmest personal regards

Sincerely, (5 spaces to right of center)

James B. Hunt Jr. (on 4th line, no comma between Hunt and Jr.)

Reference initials JBH:wlm

If enclosure - on this line

cc: William L. Meyer, Director  
Division of Solid Waste Management

**Format Instructions for Secretary (Deputy and Asst. Secretary)**

Date - center at top

Indent paragraphs 5 spaces

Ragged right margin - no justified right margin

Sincerely, (5 spaces to right of center)

Jonathan B. Howes (on 4th line)  
Secretary

Reference initials JBH:wlm

If enclosure - on this line

cc: William L. Meyer, Director  
Division of Solid Waste Management

**General Instructions**

Use abbreviations in address based on postal directions (i.e., PO Box, NC, ST, AVE, etc.)

Type draft response on plain white paper, put in folder with original letter and return to Pat Williamson. Also put draft response on the "i" drive of computer in "for pat" folder. Pat will do any necessary editing, get division approval, and prepare final letter on letterhead.

*Jack - this doesn't necessarily require a written response, but let me know what your "action" is by 7/8/96. Thanks Pat W.*

*Pat, it's in EPA's hands now. Jack 7-2-96*

**Jonathan B. Howes**  
**Secretary of Environment,**  
**Health, and Natural Resources**



TO: Rumer DATE: 6-13

RESPOND BY: \_\_\_\_\_

- PLEASE:
- Draft a reply for my signature and return to me.
  - Reply, noting the letter was referred to you by me (copy to Secretary's Office).
  - Draft a reply for the Governor's signature and return to me.
  - Reply, noting the letter was referred to you by Governor Hunt (copy to Secretary's Office)
  - For your information.
  - Take appropriate action.
  - Note and file.
  - Note and return to me.
  - Note and see me about this.
  - Your comments and/or recommendations.

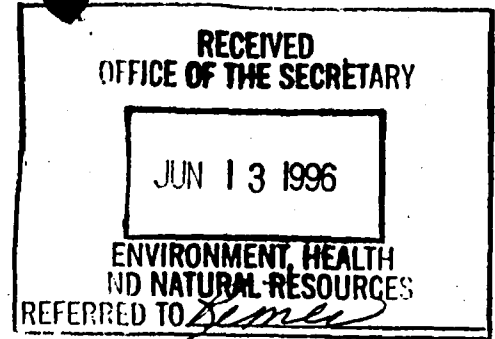
REMARKS:

Send Bill Meyer \$

RECEIVED  
Solid Waste  
JUN 20 1998  
MANAGEMENT DIV.



ERIK STROMBERG  
Executive Director



June 6, 1996

The Honorable Jonathan B. Howes  
Secretary  
Department of Environment, Health  
and Natural Resources  
Archdale Building  
512 North Salisbury Street  
Raleigh, North Carolina 27604-1148

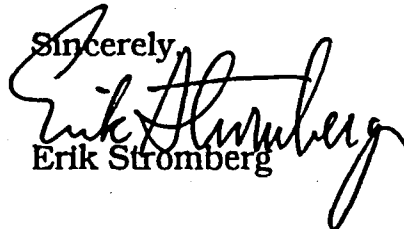
Re: Southern Wood Piedmont Superfund Site  
Wilmington, North Carolina

Dear Secretary Howes:

I have reviewed a draft of the proposed letter from you to Mr. Richard D. Green, from the U. S. Environmental Protection Agency. The North Carolina State Ports Authority fully supports any effort to culminate clean-up and regulatory review of the Southern Wood Piedmont site, currently owned by the City of Wilmington.

We have been actively working with Southern Wood Piedmont and with the City of Wilmington on this effort. We hope to purchase the property in question from the City and return it to a useful purpose as part of the State Port Facilities at Wilmington. Our purchase is in the form of a two-year option because of uncertainties in resolving environmental regulatory issues. Our successful purchase directly depends on there being a workable environmental remediation plan in place. Any assistance you can provide in this regard would be greatly appreciated.

Sincerely,

  
Erik Stromberg

ES/ple

cc: Mary Gornto  
City Manager, Wilmington, N. C.

NORTH CAROLINA STATE PORTS AUTHORITY

P.O. Box 9002 • Wilmington, NC 28402 • Tel: (910) 343-6232 • Fax: (910) 343-6237





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

JUN 12 1996

VIA FACSIMILE AND U.S. MAIL

Mr. William H. Kitchens  
Arnall Golden & Gregory  
2800 One Atlantic Center  
1201 West Peachtree Street  
Atlanta, Georgia 30309-3450

Re: General and Special Notice Letter for Remedial  
Investigation/Feasibility Study (RI/FS) for the Southern  
Wood Piedmont, Superfund Site, New Hanover County, N.C.  
(the Site)

Dear Mr. Kitchens:

Thank you for your letter dated May 31, 1996, and accompanying attachments. In your letter you propose that EPA extend the moratorium for an additional 30 days. EPA, however, does not believe a full 30 day extension of the moratorium is needed, given Southern Wood Piedmont's (SWP) stated view that it does not believe a RI/FS is necessary. Nevertheless, EPA will extend the moratorium until June 27, 1996, to give SWP another opportunity to submit a marked-up copy of the draft Administrative Order on Consent (AOC), sent to SWP on March 25, 1996, as an attachment to the Special Notice Letter. If, however, we do not receive this marked-up AOC, no further extension of the moratorium will be granted.

I would like to call to your attention the May 21, 1996 meeting in Wilmington, North Carolina, wherein local counsel represented to EPA and the State that a marked-up AOC would be forth coming on or about May 29th. Therefore, this two week extension should be adequate.

In the meantime, and in an effort to expedite the assessment of the Site, EPA will resume the Expanded Site Investigation (ESI), which was suspended at the inception of these negotiations.

EPA concurs with SWP that available data, which helps identify and characterize the scope and nature of the potential risk to human health and the environment posed by the Site,

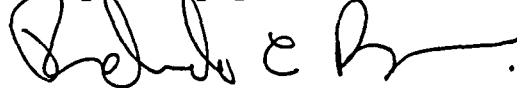
should be considered in the formulation of a remedial response. Despite your representation to the contrary, EPA communicated to SWP at meetings on May 24, 1995, and May 21, 1996, and through conversations with local counsel, that EPA intends to review, evaluate, and incorporate, where appropriate, the remedial work performed by SWP.

At the May 24th meeting, EPA also communicated to SWP the need to reach an agreement, as required by statute, under which EPA could provide proper oversight of the investigatory and assessment activities reported in the three reports submitted with your May 31st letter. Thus, the process of evaluating the data submitted, by necessity, must include some measure of independent verification since SWP elected to prepare these three reports without any involvement by EPA. The resumption of the ESI will serve this purpose. Should the results of our sampling and analyses confirm the SWP-generated data, EPA will use all such data in the evaluation of the need for and scope of any future remedial work at the Site.

Regarding your statement on the possibility of a delay in implementing a final remedial action or development of the Site, any resulting delay would not be due to EPA's decision to follow the settlement process as set forth in the statute. As noted above, EPA met with SWP in May 1995, over one year ago, in an attempt to begin this process. It was clear to EPA at that time, and to others present at the meeting, that SWP had no interest in entering into any agreement that contained many of the standard provisions prescribed by Agency guidance. Moreover, SWP has had knowledge of the potential risks posed by the Site as early as 1980, when it began the excavating and landfarming activities on site. Yet, preliminary data gathered by EPA indicates that the Site may still pose a potential risk to human health and the environment.

Again, EPA thanks SWP for the reports it has submitted, and we look forward to reviewing them. Please do not hesitate to call me should you have any questions. I can be reached at (404) 347-2641, extension 2275.

Very truly yours,

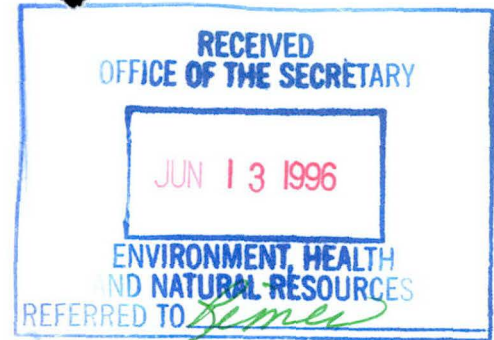


Rolando E. Bascumbe

cc: Jack Butler, NCDEHNR



ERIK STROMBERG  
Executive Director



June 6, 1996

The Honorable Jonathan B. Howes  
Secretary  
Department of Environment, Health  
and Natural Resources  
Archdale Building  
512 North Salisbury Street  
Raleigh, North Carolina 27604-1148

Re: Southern Wood Piedmont Superfund Site  
Wilmington, North Carolina

Dear Secretary Howes:

I have reviewed a draft of the proposed letter from you to Mr. Richard D. Green, from the U. S. Environmental Protection Agency. The North Carolina State Ports Authority fully supports any effort to culminate clean-up and regulatory review of the Southern Wood Piedmont site, currently owned by the City of Wilmington.

We have been actively working with Southern Wood Piedmont and with the City of Wilmington on this effort. We hope to purchase the property in question from the City and return it to a useful purpose as part of the State Port Facilities at Wilmington. Our purchase is in the form of a two-year option because of uncertainties in resolving environmental regulatory issues. Our successful purchase directly depends on there being a workable environmental remediation plan in place. Any assistance you can provide in this regard would be greatly appreciated.

Sincerely,

Erik Stromberg

ES/ple

cc: Mary Gornto  
City Manager, Wilmington, N. C.

NORTH CAROLINA STATE PORTS AUTHORITY

P.O. Box 9002 ▪ Wilmington, NC 28402 ▪ Tel: (910) 343-6232 ▪ Fax: (910) 343-6237

# ARNALL GOLDEN & GREGORY

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

2800 ONE ATLANTIC CENTER  
1201 WEST PEACHTREE STREET • ATLANTA, GEORGIA 30309-3450  
TELEPHONE (404) 873-8500 • FACSIMILE (404) 873-8501

FIRST LIBERTY BANK TOWER  
SUITE 1000  
201 SECOND STREET  
MACON, GEORGIA 31201  
(912) 745-3344

WRITER'S DIRECT DIAL NUMBER  
(404) 873-8644

WRITER'S DIRECT DIAL FACSIMILE  
(404) 873-8645

May 31, 1996

## VIA TELECOPY AND U.S. MAIL

Mr. Rolando E. Bascumbe  
Assistant Regional Counsel  
U.S. Environmental Protection Agency  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Re: Southern Wood Piedmont, New Hanover County, N.C.

Dear Mr. Bascumbe:

We represent Southern Wood Piedmont Company (SWP) and this letter is in response to the General and Special Notice Letter for Remedial Investigation/Feasibility Study (RI/FS), dated March 25, 1996, sent to SWP in connection with the above-referenced site in New Hanover County, N.C. (the Site). SWP notified EPA of its intent to enter negotiations regarding remediation of the Site by letter from counsel in Raleigh, North Carolina dated April 24, 1996.

In furtherance of its attempts to discuss this matter with the Agency in good faith, SWP arranged a meeting on May 21, 1996 between representatives of EPA, the North Carolina State Ports Authority, the City of Wilmington, North Carolina, the State of North Carolina Department of Environment, Health and Natural Resources, Division of Solid Waste Management, and SWP. At that meeting, SWP explained the vast amount of investigation, analysis, remediation and documentation that it has undertaken at the Site since 1981. The Site activities conducted by SWP include remedial work performed in accordance with an Administrative Consent Order signed with NCDEHNR, groundwater, surface water, sediment and soil sampling and assessment, and the preparation of more than 14 comprehensive reports. All of this work was conducted voluntarily by SWP, upon its own initiative, at considerable expense and in coordination with the State of North Carolina.

At SWP's request, ViroGroup prepared a Soil, Sediment, and Surface Water Assessment Report and a Remedial Action Plan for the Site, both dated May 1996. ChemRisk, another consultant retained by SWP, prepared a Human Health and Ecological Risk Assessment for the

Mr. Rolando E. Bascumbe  
May 31, 1996  
Page 2

Site dated May 29, 1996. These three reports were summarized at the meeting on May 21 and copies are enclosed herewith for the Agency's review. All three reports were prepared in conformance with EPA guidance, protocols and requirements and similar guidance from NCDEHNR. Significantly, the Risk Assessment clearly concludes that, even using overly conservative assessment methodology, human health and ecological risks associated with the Site are insignificant. Certainly this Site does not present any potential for imminent and substantial endangerment to the public health or welfare or the environment.

EPA will clearly need some time to review the vast amount of data submitted herewith. Any consent agreement to perform additional work at the Site, should additional work be required, should take into account all of the data already developed and the substantial work already performed. However, the current draft of the Administrative Order proposed by EPA contemplates initiation of an RI/FS from the very beginning, when every component required by EPA for an RI/FS has already been prepared by SWP. We, thus, take issue with the apparent scope and timing of the process and actions under consideration by the Agency. EPA's insistence that a standard Administrative Order by Consent for RI/FS be signed by SWP before the Agency will review the substantial work conducted by SWP and the reports prepared relative to assessment and remediation is inconsistent with its obligation to tailor these activities to the nature of the problems that exist at the Site and the response alternatives that are currently appropriate. 40 C.F.R. § 300.430(a)(2). Moreover, because remedial actions at Superfund Sites are to be implemented as soon as site data and information makes it possible to do so, 40 C.F.R. § 300.430(a)(1), we disagree with a process that will only serve to delay any final remedial action and redevelopment of the Site, and will be clearly wasteful, inconsistent with regulatory authority and EPA guidance, and arbitrary and capricious.

We also call your attention to the recent publication by EPA of an Advance Notice of Proposed Rulemaking concerning corrective action for releases from solid waste management units at hazardous waste management facilities. 61 Fed. Reg. 19,432-464 (May 1, 1996). Although this notice primarily relates to the Resource Conservation and Recovery Act corrective action program, EPA acknowledges that "[a]s a general philosophy . . . the RCRA and CERCLA remedial programs should operate consistently and result in similar environmental solutions . . . ." *Id.* at 19,439. In the same notice, EPA reinforces its encouragement for voluntary corrective actions and its viewpoint that it should take steps to address the concern that procedural barriers have delayed cleanups that the regulated community is willing to undertake voluntarily. *Id.* at 19,442. EPA also references a number of administrative initiatives it has recently taken to streamline the Superfund program and increase the fairness, effectiveness, and efficiency of CERCLA cleanups, including the formulation of realistic assumptions regarding future land use and the recognition that land use assumptions should influence risk assessment, development of remedial alternatives, and remedy selection. *Id.* The Agency specifically states



Mr. Rolando E. Bascumbe  
May 31, 1996  
Page 3

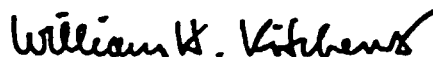
that when investigations or studies have been completed under one program, there should be no need to review or repeat those investigations or studies under another program. Id. at 19,441.

We respectfully suggest that EPA's response to SWP's voluntary corrective actions should be consistent with these recent Agency initiatives. Accordingly, it appears prudent to extend the moratorium at least an additional 30 days, as contemplated in the Special Notice Letter, allowing SWP, EPA and the State of North Carolina to continue to work together to determine the terms of a more appropriate strategy for completing remediation at the Site. Although another RI/FS is not necessary, SWP is willing to discuss the need for additional actions, such as long-term monitoring or other protective work at the Site and appropriate financial assurance for such activity.

SWP has spared no resources in ensuring that the Site does not present any risk to human health and the environment. SWP would like to continue to negotiate with EPA and the State of North Carolina in complete good faith with respect to any further work that may be appropriate at the Site. The company reiterates its willingness to meet with the Agency to explain and discuss the three reports referenced above and any other data already generated. Further, SWP is willing to meet with the Agency to discuss whether particular tasks may be necessary to supplement the efforts already expended. However, SWP does not agree that the significant work already conducted should be repeated and it will not consider reimbursing EPA for doing so, unless the Agency can explain a rational and legally justifiable basis therefor.

Please let me know if EPA is agreeable to the proposed extension of time and to continued discussions. I look forward to hearing from you.

Yours sincerely,



William H. Kitchens

WHK/ams

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JUN 03 1996  
SUPERFUND SEC

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 fine and imprisonment for knowing violations.

Date: \_\_\_\_\_

5/30/96

\_\_\_\_\_  
T. M. Davis

Manager, Environmental Affairs

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JUN 03 1996

## RI/FS Comparison Chart - SWP Wilmington, NC SUPERFUND SITE

DOCUMENT	ABBREVIATION
State of North Carolina DEHNR Site Inspection Prioritization Report (1/31/95)	SIP
ETE Letter to Southern Wood Piedmont Regarding Recommendations and Cost Proposal for Phase II Groundwater Quality Assessment (8/13/92)	Aug. 10, 1992 letter - Recommendations for Phase II
ViroGroup, Inc. - Soil, Sediment, and Surface Water Workplan (2/96)	SSSW Workplan - February 1996
ViroGroup, Inc. - Remedial Assessment Plan (6/96)	RAP
ViroGroup, Inc. - Phase III Groundwater Quality Assessment (7/94)	Phase III
ViroGroup, Inc. - Phase II Groundwater Quality Assessment (2/93)	Phase II
ChemRisk - Human Health and Ecological Risk Assessments (6/96)	ChemRisk - 1996
ViroGroup, Inc. - Soil, Sediment, and Surface Water Assessment Report (4/96)	SSSW Assessment Report
Geraghty and Miller, Inc. - Comparison of 1990 & 1991 Soil and Groundwater Data (3/92)	Geraghty and Miller - March 1992
ETE - Groundwater Quality Assessment (6/92)	Phase I
To Be Determined	TBD

**RI/FS Comparison Chart - SWP Wilmington, NC**  
**5/31/96 Draft**

<b>RI / FS ELEMENT</b>	<b>SWP DOCUMENT</b>	<b>COMMENT</b>
(Citation from USEPA RI/FS Guidance 10/88)	(Section/page)	
<b>2.0 Scoping the RI/FS</b>		
<b>2.3 - Deliverables and Communication</b>		
<b>2.3.1 - Workplan</b>	Aug. 10, 1992 letter - Recommendations for Phase II NCDEHNR SIP 1/3/95 Ref. 11, Ref. 9 SSSW Workplan - February 1996	
<b>2.3.2 - Sampling and Analysis Plan</b>	RAP Attachment K	
<b>2.3.2.3 - Field Sampling Plan</b>	SSSW Workplan - February 1996	
<b>2.3.2.4 - Quality Assurance Project Plan (QAPP)</b>	SSSW Workplan - February 1996	
<b>2.3.3 - Health and Safety Plan</b>	SSSW Workplan - February 1996	
<b>2.3.4 - Community Relations Plan</b>	N/A	
<b>3.0 Site Characterization</b>	NCDEHNR SIP 1/3/95 - Executive Summary RAP 1996	
<b>3.2 Field Investigation Methods</b>		
<b>3.2.2 - Investigate Site Physical Characteristics</b>		
<b>3.2.2.1 - Surface features</b>	Phase III Sec. 1, p.1, Figs. 1,2,3. Phase II Sec.1.0,1.1, p.1	
<b>3.2.2.2 - Geology</b>	Phase III Sec. 3.3, p.16 NCDEHNR SIP 1/3/95 ,Sec.4.1, p.10 NCDEHNR SIP 1/3/95 Refs. 21,22,23	
<b>3.2.2.3 - Soils and the vadose zone</b>	NCDEHNR SIP 1/3/95 ,Ref. 24 SSSW Workplan - February 1996	
<b>3.2.2.4 - Surface water hydrology</b>	Phase III Sec. 2.6, p.12 NCDEHNR SIP 1/3/95 ,Refs.36, 37, 38, 39 SSSW Workplan - February 1996	

**RI/FS Comparison Chart - SWP Wilmington, NC**  
**5/31/96 Draft**

3.2.2.5 - Hydrogeology	NCDEHNR SIP 1/3/95 ,Sec.4.1, p.10 NCDEHNR SIP 1/3/95 ,Refs.21, 22, 23, 26, 27
3.2.2.6 - Meteorology	NCDEHNR SIP 1/3/95 ,Sec.2.1, p.1 NCDEHNR SIP 1/3/95 Refs.4, 5, 55
3.2.2.7 - Human populations and land uses	NCDEHNR SIP 1/3/95 ,Fig.1 NCDEHNR SIP 1/3/95 Refs. 31, 32, 56 ChemRisk - 1996
3.2.2.8 - Ecological investigations	NCDEHNR SIP 1/3/95 Sec.5.2, p.21 NCDEHNR SIP 1/3/95 Table 3 NCDEHNR SIP 1/3/95 Refs. 40, 43, 45, 46, 47, 48 ChemRisk - 1996
3.2.3 - Define Sources of Contamination	Phase III Fig. 4 NCDEHNR SIP 1/3/95 Sec. 2.3, p.4 NCDEHNR SIP 1/3/95 Sec. 3.2, p.9 NCDEHNR SIP 1/3/95 Refs. 60
3.2.4 - Determine the Nature and Extent of Contamination	NCDEHNR SIP 1/3/95 Sec. 3.6, p.8 SSSW Workplan - February 1996
3.2.4.1 - Ground water	Phase III Sec. 3.6, p.25 NCDEHNR SIP 1/3/95 Sec. 4, p.5; Sec. 4.3, p.13
3.2.4.2 - Soil	Phase III Sec. 3.5, p.23 NCDEHNR SIP 1/3/95 Sec. 6.3, p.28 SSSW Assessment Report 1996 Sec. 2.1, p.1; Sec. 2.2, p. 4
3.2.4.3 - Surface water	Phase III Sec. 2.6, p.12; Sec. 3.7, p.29 NCDEHNR SIP 1/3/95 Sec. 5.1, p.18; Sec. 5.5, p.26 SSSW Assessment Report 1996 Sec. 2.3, p.10
3.2.4.4 - Sediments	SSSW Assessment Report 1996 Sec. 2.4, p.11
3.2.4.5 - Air	NCDEHNR SIP 1/3/95 Sec. 6, p.27; Sec. 6.5, p.30

5/31/96 Draft

<b>3.3 Laboratory Analyses</b>	NCDEHNR SIP 1/3/95 Ref. 49	
	Geraghty and Miller- March 1992 Appendix A	
	Phase I Appendix 3	
	Phase II Attachment E; Attachment F	
	Phase III Attachment F; Attachment G	
	SSSW Assessment Report 1996 - Attachment G	
<b>3.4 Data Analyses</b>		
<b>3.4.1 - Site Characteristics</b>		
<b>3.4.1.1 - Site physical characteristics</b>	Phase III Sec. 2.5.3, p.9; Sec. 2.5.4, p.9; Sec. 2.5.5, p.10	
<b>3.4.1.2 - Source characteristics</b>	Phase III Figure 4 Phase III Sec. 4, p. 29	
<b>3.4.1.3 - Nature and extent of contamination</b>	Phase III Attachment A; Attachment F; Attachment G SSSW Assessment Report 1996 - Figures 1 - 14 RAP 1996 Sec. 2.2, p.5; Sec. 2.4, p.8; Sec. 2.6, p.11	
<b>3.4.1.4 - Contaminant fate and transport</b>	Phase III Sec. 4, p. 29 SSSW Assessment Report 1996 Sec. 3, p.17	
<b>3.4.2 - Baseline Risk Assessment</b>	ChemRisk 1996	
<b>3.4.2.2 - Components of the baseline risk assessment</b>	ChemRisk 1996	
<b>3.5 Data Management Procedures</b>		
<b>3.5.1 - Field Activities</b>	SSSW Workplan Attachment A	
<b>3.5.2 - Sample Management and Tracking</b>	SSSW Workplan Attachment A	
<b>3.5.3 - Document Control and Inventory</b>	N/A	
<b>3.6 Community Relations Activities During Site Characterization</b>	N/A	

**RI/FS Comparison Chart - SWP Wilmington, NC**  
**5/31/96 Draft**


<b>3.7 Reporting and Communication During Site Characterization</b>	N/A	
<b>3.7.1 - Information for ARAR Identification</b>	RAP 1996 Sec. 4.0, p.14	
<b>3.7.2 - Preliminary Site Characterization Summary</b>	RAP 1996 Sec. 2.0, p.2	
<b>3.7.3 - Draft RI Report</b>	Phase III 1995 SSSW Assessment Report 1996	
<b>4.0 Development and Screening of Alternatives</b>		
<b>4.1.2.1 - Development and screening of alternatives</b>	RAP 1996 Sec. 3, p.14; Sec. 5, p.18	
<b>4.1.2.2 - Detailed analysis of alternatives</b>	RAP 1996 Sec. 5, p.18	
<b>4.2 Alternative Development Process</b>		
<b>4.2.1 - Develop Remedial Action Objectives</b>	RAP 1996 Sec. 3, p.14	
<b>4.2.3 - Identify Volumes or Areas of Media</b>	RAP 1996 Sec. 2, p. 2	
<b>4.2.4 - Identify / Screen Remedial Technologies &amp; Process Options</b>	RAP 1996 Sec. 5.1, p.19	
<b>4.3 Alternative Screening Process</b>	RAP 1996 Sec. 5.2, p.20	
<b>4.4 Community Relations During Alternative Development and Screening</b>	N/A	
<b>4.5 Reporting and Communication During Alternative Development and Screening</b>	N/A	
<b>5.0 Treatability Investigations</b>	N/A	
<b>6.0 Detailed Analysis of Alternatives</b>		
<b>6.2.1 Alternative Definition</b>	RAP 1996 Sec. 5.3, p.24	
<b>6.2.2 - Overview of Evaluation Criteria</b>	RAP 1996 Attachment G	

**RI/FS Comparison Chart - SWP Wilmington, NC**  
**5/31/96 Draft**

6.2.3 - Individual Analysis of Alternatives	RAP 1996 Sec. 5.2, p.21	
6.2.3.1 - Overall protection of human health and the environment	RAP 1996 Attachment G	
6.2.3.2 - Compliance with ARARs	RAP 1996 Attachment G	
6.2.3.3 - Long-term effectiveness and permanence	RAP 1996 Attachment G	
6.2.3.4 - Reduction of toxicity, mobility or volume through treatment	RAP 1996 Attachment G	
6.2.3.5 - Short-term effectiveness	RAP 1996 Attachment G	
6.2.3.6 - Implementability	RAP 1996 Attachment G	
6.2.3.7 - Cost	RAP 1996 Attachment G	
6.2.3.8 - State (support agency) acceptance	TBD	
6.2.3.9 - Community acceptance	TBD	
<b>6.3 Post RI/FS Selection of the Preferred Alternative</b>	TBD	



May 23, 1996

TO: Jack Butler  
FROM: Pat DeRosa   
RE: Chronology of events  
Southern Wood Piedmont, NCD 058 517 467  
Wilmington, New Hanover County, NC

1930's--1983 Wood treatment occurred on site using pentachlorophenol, creosote, and CCA. Wastes listed in 1980 RCRA notification include K001(sludge from wood preserving process wastewaters), D004 (arsenic) and D007 (chromium).

June 28, 1983 NC Hazardous Waste Section rep. meets with SWP to discuss RCRA closure plan. Closure plan requested in letter from Ray Church, July, 8, 1983.

October 27, 1983 NC Hazardous Waste Section (William Paige) meets with SWP to discuss remedial alternatives.

July 24, 1984 CERCLA PA completed by William Paige. Surface water, groundwater and soil contamination was indicated at that time. RCRA addressing only some areas of concern, not all.

May 20, 1985 State signs AOC with SWP. SWP agrees to limited landfarming of visibly contaminated soils and removal or onsite treatment of soils exceeding EP Toxicity for arsenic (.5 ppm). Also agrees to limited groundwater and surface water monitoring.

January-1985 SI conducted by EPA contractors.

March 10, 1989 Letter from NC Hazardous Waste Section (Gary Babb) to City of Wilmington re: use of portions of property not identified as Superfund areas.

March 27, 1990 SWP still completing work on site. NC Hazardous Waste Section expects to receive a completion report/risk assessment by end of 1990.

April 20, 1990 NC Superfund and RCRA staff meet with SWP. Work still in progress. Site will need Superfund review after final report to RCRA.

Memo to Jack Butler  
May 23, 1996  
page 2

1990--1991                      Sampling conducted by Geraghty and Miller for SWP.

1992--1994                      Sampling conducted by Virogroup for SWP.

January 3, 1994                SWP submits completion report to NC Hazardous Waste Section. Report includes risk assessment (for landfarm area only) and proposed scope of work for additional investigation.

January 31, 1995               Superfund Section completes SIP report to EPA recommending the site for further action under CERCLA based on evidence of creosote residuals in the ditch and Greenfield Creek. Greenfield Creek includes a fishery and wetland. Also, dioxin contamination of soils has not been thoroughly investigated.

February 3, 1995               Memo from Doug Holyfield to Pat DeRosa re: dissolving of AOC with SWP limited risk evaluation by Luanne Williams.

May 24, 1995                   EPA, SWP, State Ports Authority, City of Wilmington and Superfund Section reps. meet in Wilmington to discuss site.

May 31, 1995                   EPA letter documenting recreational fishing in Greenfield Creek.

Feb.7, 1996                    SWP distributes copies of its assessment workplan notifying EPA, the State etc. that field activities included in the workplan will begin on or before February 19, 1996.

February 16, 1996               EPA response letter from Bernie Hayes notifying SWP that it was planning to proceed with the ESI and would be sending a draft AOC to SWP.

March 25, 1996                EPA sends notice letters and draft AOC to EPA beginning 60-day review and response period.

April 22, 1996                State Superfund Section meets with SWP at their request for presentation of results to date. Report and risk assessment promised.

April 24, 1996                SWP responds to EPA notice letter indicating intent to negotiate.

May 21, 1996                   All parties meet in Wilmington to discuss site.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

February 16, 1996

4WD-NSRB

Mr. T.M. Davis, Manager, Environmental Affairs  
Southern Wood Piedmont Company  
P.O. Box 5447  
Spartanburg, South Carolina 29304

SUBJ: Southern Wood Piedmont Facility, Wilmington, North  
Carolina

Dear Mr. Davis:

Thank you for your letter of February 7, 1996, regarding the work plan that Southern Wood Piedmont (SWP) has prepared for additional investigations at the Wilmington facility. EPA welcomes any additional information that may be generated regarding the nature and extent of contamination at this site, and we look forward to seeing the results of your investigation. Since this investigation and subsequent assessment will not be conducted with proper oversight by EPA, and without an enforceable agreement between SWP and EPA, we will not be reviewing the work plan or providing any comments regarding its contents.

EPA has tasked one of our contractors with conducting an Expanded Site Investigation (ESI) for the Wilmington facility, and the scoping activities for that ESI are underway. The information gathered during the ESI will be used to prepare a Hazard Ranking System score for the site so that, should the score be high enough, the site can be proposed for inclusion on the National Priorities List (NPL). Based on data we have already obtained, EPA believes that the site will generate a sufficiently high score, and that NPL listing will be proposed.

In our meeting last May 24th, as referred to in your letter, our position was that without an enforceable agreement between EPA and SWP to conduct a Remedial Investigation and Feasibility Study at the site, EPA would proceed to conduct an ESI using Federal funds. As in any such case, this agreement would have to be formulated in such a manner as would be acceptable to EPA (including our Offices of Regional Counsel and General Counsel) and to the Department of Justice (DOJ). It was clear to me at that time, and to others attending the meeting with whom I have spoken, that SWP had no interest in entering into any agreement that contained many of the provisions necessary to make it acceptable to EPA and DOJ.

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FEB 20 1996

SUPERFUND SECTION

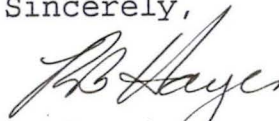


EPA's position has not changed. EPA prefers that the work be performed by SWP, and we are willing to enter into an agreement with SWP to that end. That agreement must contain, however, those provisions regarding EPA oversight, approval rights, payment of past and future costs, and requirements for additional work that SWP apparently found objectionable in the May 24th meeting. Any work conducted or data gathered by SWP in the absence of such an agreement may not be useable by EPA for the purposes of HRS ranking or for the assessment of risk. As such, any work conducted prior to entering into an enforceable agreement with EPA, and without proper oversight and quality control, will be conducted at your own risk.

In reviewing my notes from the May 24, 1995, meeting, it was my impression at the time that SWP would shortly submit a work plan to EPA, and that EPA would then in turn provide a draft Administrative Order on Consent (AOC) and statement of work as a basis for negotiations. Since we did not receive a work plan until very recently (after we had tasked our contractor with preparations for an ESI) we had not provided you with a draft AOC, but we will do so in the very near future. Until such time as an acceptable agreement is entered into by SWP, however, preparations for the ESI will continue. Once field activities have been scheduled, we will contact SWP, the City of Wilmington, and the North Carolina Ports Authority regarding access to the site for our contractors.

Again, thank you for your letter and for the copy of the work plan you have prepared. Once you receive the draft AOC and have had a chance to review it, please contact me if SWP wishes to enter into negotiations to conduct a Remedial Investigation and Feasibility Study at the site. My telephone number is (404) 347-7791, extension 2048.

Sincerely,



R. Bernie Hayes  
Remedial Project Manager  
North Superfund Remedial Branch

cc: Pat DeRosa, NCDEHNR  
Rolando Bascumbe, EPA/ORC



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

MAR 25 1996

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MAR 28 1996

SUPERFUND SECTION

4RC

GENERAL AND SPECIAL NOTICE LETTER FOR  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)  
URGENT LEGAL MATTER--PROMPT REPLY REQUESTED  
CERTIFIED MAIL--RETURN RECEIPT REQUESTED

Southern Wood Piedmont Company  
c/o T.M. Davis  
P.O. Box 5447  
Spartantburg, South Carolina 29304

SUBJ: Southern Wood Piedmont, Superfund Site, New Hanover  
County, N.C. (the Site)

Dear Mr. Davis:

The purpose of this letter is to notify Southern Wood Piedmont ("Southern-Wood") of the potential liability, as defined by Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9607(a), as amended, that Southern-Wood may have incurred with respect to the above-referenced Site. This letter also notifies Southern-Wood that a 60-day period of formal negotiations with the Environmental Protection Agency (EPA) regarding the performance and funding of upcoming response activities at the Site begins upon receipt, which EPA deems to be seven (7) calendar days from the date of this letter. In addition, this letter provides general and site-specific information to assist Southern-Wood in these negotiations, specifically a draft Administrative Order on Consent and a Scope of Work.

The Site is located on Greenfield Street in downtown Wilmington, New Hanover County, North Carolina. The Site is owned by the City of Wilmington and the North Carolina Ports Authority. The Site consists of fifty-two (52) acres of vacant land on the Cape Fear River waterfront. The Site is located in a light industrial area and was formerly the site of a wood treatment and storage facility operated by the Southern-wood.

Southern-Wood began operating the wood-treating facility at the Site in 1964. The facility ceased operating in May 1983. From 1964 through 1972, Southern-Wood used creosote as the primary wood preserving agent in its operations at the facility.

During an investigation by the State of North Carolina Department of Human Resources (NCDHR), a state representative observed soil stained with what appeared to be creosote. Subsequent tests results obtained confirmed this initial assessment. The tests results have documented the presence of several semi-volatile organic compounds (SVOCs) in the soil at the Site. Southern-Wood has undertaken an active program to identify and remediate soil contaminated with creosote and SVOCs. The program included excavation, treatment and land farming of contaminated soils at the Site.

The United States Environmental Protection Agency (EPA) has documented the release or threatened release of hazardous substances, pollutants and contaminants at the above-referenced Site. EPA has spent public funds and is considering spending additional public funds on actions to investigate or control such releases or threatened releases at the Site. Unless EPA reaches an agreement under which Southern-Wood will properly perform or finance such actions, EPA may perform these actions pursuant to Section 104 of CERCLA, 42 U.S.C § 9604. By this letter, EPA notifies Southern-Wood of the opportunity to perform the response activities outlined below.

#### NOTICE OF POTENTIAL LIABILITY

Potentially responsible parties under CERCLA include: the current owners or operators of the Site; persons who at the time of disposal of hazardous substances owned or operated the Site; persons who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for disposal or treatment of hazardous substances; and persons who accept or accepted any hazardous substance for transport to disposal facilities and selected such facilities. Under CERCLA and other laws, PRPs may be liable for all funds expended by the United States Government in responding to any release or threat of release at the Site, including planning, investigation, cleanup and enforcement activities associated with the Site. In addition, PRPs may be required to pay damages for injury to natural resources or for their destruction or loss, together with the cost of assessing such damages.

Based on information received during the investigation of the Site, EPA believes that Southern-Wood, as the former operator of the Site at the time of disposal of hazardous substances thereon, may be a responsible party under Section 107 of CERCLA, 42 U.S.C. § 9607(a). Before the United States Government undertakes further response actions, EPA requests that Southern-



Wood voluntarily perform the work necessary to address any releases or threatened releases of hazardous substances from the Site.

SPECIAL NOTICE AND NEGOTIATION MORATORIUM

EPA has determined that a period of negotiation would facilitate settlement between EPA and Southern-Wood. Therefore, pursuant to 42 U.S.C. § 9622(e), a 60-day moratorium on certain EPA response activities at the Site will begin seven (7) calendar days from the date of this letter. During this 60-day period, Southern-Wood is invited to submit a good faith offer to EPA to conduct the RI/FS. The contents of an acceptable good faith offer are set forth below. Upon the submission of a good faith offer, formal negotiations between the parties towards a settlement providing for Southern-Wood to conduct or finance the RI/FS may begin. These negotiations will continue for the remaining days of the initial 60-day period, if the offer is submitted prior to the 60th day, and for an additional 30 days, if necessary. If a settlement is reached between EPA and Southern-Wood within the 90-day moratorium period, the settlement will be embodied in an Administrative Order on Consent.

Pursuant to Section 122(e)(4) of CERCLA, 42 U.S.C. § 9622(e)(4), if a good faith offer is not received within the 60-day notice period, EPA may take appropriate action at the Site. However, EPA reserves the right to take action at the Site at any time in the event that a significant threat requiring EPA's immediate response arises.

A good faith offer is a written proposal which demonstrates Southern-Wood's qualifications and willingness to conduct or finance the RI/FS. A good faith offer to conduct or finance the RI/FS will include the following elements:

1. A statement by Southern-Wood of its willingness to conduct or finance the RI/FS which is consistent with the enclosed draft Administrative Order on Consent and Scope of Work and which provides a sufficient basis for further negotiations.
2. A paragraph by paragraph response to the draft Administrative Order on Consent and Scope of Work.
3. A demonstration of Southern-Wood's technical capability to carry out the RI/FS including the identification of the firm(s) that would be used to conduct the work or a description of the process they will use to select the firm(s).
4. A demonstration of Southern-Wood's capability and willingness to finance the RI/FS.

5. A statement by Southern-Wood of its willingness to reimburse EPA for costs incurred in overseeing its conduct of the RI/FS.
6. The name, address and telephone number of the party who will represent Southern-Wood in these negotiations.

In addition, the good faith offer should indicate whether the Southern-Wood is willing to reimburse EPA for the Agency's past costs.

#### ADMINISTRATIVE RECORD

Pursuant to Section 113(k) of CERCLA, 42 U.S.C. § 9613(k) EPA will establish the administrative record file which will contain documents that will form the basis of EPA's decision on the selection of a response action for the Site. This administrative record will be open to the public for inspection and comment.

#### PRP RESPONSE AND EPA CONTACT PERSON

Section 122(e) of CERCLA, 42 U.S.C. § 9622(e), provides that Southern-Wood has 60 days from the receipt of this notice to make a good faith offer to EPA. However, Southern-Wood is requested to provide EPA with a letter of intent within 20 calendar days of receipt of this letter. The letter of intent should state whether Southern-Wood is willing to enter into negotiations to perform and finance the RI/FS, and whether Southern-Wood is willing to reimburse EPA for past response costs. The letter of intent should include the appropriate name, address and telephone number for further contact with Southern-Wood.

If EPA does not receive a timely response, EPA will assume that Southern-Wood does not wish to negotiate a resolution of its liabilities in connection with the response, and that Southern-Wood has declined any involvement in performing these response activities. Southern-Wood may be held liable under Section 107 of CERCLA, 42 U.S.C. § 9607, for the cost of the response actions which EPA performs at the Site and for any damages to natural resources.

Southern-Wood's response to this notice letter should be sent to:

Mr. Rolando E. Bascumbe  
Assistant Regional Counsel  
U.S. Environmental Protection Agency  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

If you have any legal questions pertaining to this matter,



please direct them to Mr. Rolando E. Bascumbe, at 404/347-2641, extension 2275. Please direct any technical questions which you may have to Mr. Bernie Hayes, Remedial Project Manager, at 404/347-7791, extension 2048.

Due to the seriousness of the problem at the Site and the legal ramifications of Southern-Wood's failure to respond promptly, EPA strongly encourages you to give this matter your immediate attention and to respond within the time specified above.

Thank you for your cooperation in this matter.

Sincerely,



Richard D. Green  
Acting Director  
Waste Management Division

Enclosures

cc: Jack Butler, Chief  
CERCLA Branch, North Carolina Department of Environment,  
Health, and Natural Resources

James Lee, United States Department of Interior

Bonnie Ray Albritton, Property Administrator  
North Carolina Ports Authority

Tom Pollard, City Attorney  
City of Wilmington

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

IN THE MATTER OF: )  
 )  
Southern Wood Peidmont ) Proceeding under Sections 104,  
Company ) 122(a) and 122(d)(3) of the  
P.O. Box 5447 ) Comprehensive Environmental  
Spartanburg, S.C. 29304 ) Response, Compensation  
 ) and Liability Act of 1980,  
 ) as amended, 42 U.S.C.  
Respondent ) §§ 9604 and 9622.  
 )  
 )  
 )  
 )  
 ) EPA Docket No.:  
 )

ADMINISTRATIVE ORDER BY CONSENT  
FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

I. JURISDICTION

This Administrative Order by Consent (Consent Order) is entered into by the United States Environmental Protection Agency (EPA) with the Southern Wood Peidmont Company (Respondent), pursuant to the authority vested in the President of the United States by Sections 104, 122(a) and 122(d)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9604, 9622(a) and 9622(d)(3). This authority was delegated by the President to the Administrator of the EPA by Exec. Order No. 12580, dated January 23, 1987, 52 Fed. Reg. 2923 (Jan. 29, 1987), and was further delegated to the Regional Administrator of Region IV EPA and re-delegated to the Director, Waste Management Division.

Respondent agrees to undertake all actions required by the terms and conditions of this Consent Order for the conduct and implementation of the Remedial Investigation and Feasibility Study (RI/FS). Respondent consents to and will not contest EPA jurisdiction regarding this Order.

II. PARTIES BOUND

This Consent Order shall apply to and be binding upon EPA and Respondent, its agents, successors, assigns, officers, directors, and principals. The signatories to this Consent Order certify that they are authorized to execute and legally bind the parties they represent to this Consent Order. No change in the ownership

or corporate status of Respondent shall alter its responsibilities under this Consent Order.

Respondent shall provide a copy of this Consent Order to any subsequent owners or successors before ownership rights are transferred. Respondent shall provide a copy of this Consent Order to all contractors, subcontractors, laboratories, and consultants which are retained to conduct any work performed under this Consent Order, within fourteen (14) days after the effective date of this Consent Order or the date of retaining their services, whichever is later. Respondent shall condition any such contracts upon satisfactory compliance with this Consent Order. Notwithstanding the terms of any contract, Respondent is responsible for compliance with this Consent Order and for ensuring that its subsidiaries, employees, contractors, consultants, subcontractors and agents comply with this Consent Order.

### III. STATEMENT OF PURPOSE

In entering into this Consent Order, the mutual objectives of EPA and Respondent are: (A) with respect to the Remedial Investigation (RI), to determine fully the nature and extent of the threat to the public health or welfare or the environment caused by the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Southern Wood Piedmont, Wilmington, New Hanover Superfund Site (the Site) into the environment; and (B) with respect to the Feasibility Study (FS), to develop and evaluate alternatives for remedial action to prevent, mitigate or otherwise respond to the migration or the release or threatened release of hazardous substances, pollutants, or contaminants from the Site; and (C) to recover response and oversight costs incurred by EPA with respect to this consent order.

The activities conducted pursuant to this Consent Order will be consistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300, et seq., and will be subject to the express EPA approvals as set forth below.

### IV. FINDINGS OF FACTS

The following constitutes an outline of the facts upon which this Consent Order is based:

- A. The Southern Wood Piedmont, Wilmington Site, is located on Grainfield Street in downtown Wilmington, New Hanover County, North Carolina. The Site is owned by the City of Wilmington and the North Carolina Ports Authority. The Site consists of fifty two (52) acres of vacant land on the Cape Fear River waterfront. The Site is located in a light industrial area and formerly was the site of

a wood treatment and storage facility operated by the Respondent.

- B. The Respondent, Southern Wood Piedmont, (formerly known as Southern Wood Preserving), is a wholly owned subsidiary of Rayonier, Inc.
- C. The Respondent began operating the wood-treating facility at the Site in 1964. The facility ceased operating in May 1983.
- D. From 1964 through 1972, the Respondent used creosote as the primary wood preserving agent in its operations at the facility. In 1972, the Respondent began to use chromated copper arsenate (CCA), and later added pentachlorophenol (PCP) to the process.
- E. On August 10, 1984, the State of North Carolina Department of Human Resources (NCDHR) completed a Preliminary Assessment (PA) of the Site. During the investigation, NCDHR personnel observed soil stained with what appeared to be creosote. Tests results obtained confirmed the initial assessment. Tests results have also documented the presence of several semi-volatile organic compounds (SVOCs) in the soil at the Site. Among the organic compounds detected were acenaphthene, acenaphthylene, benzo(a)anthracene and chrysene. The sampling results also indicated that a plume of contaminated groundwater exists beneath the Site.
- F. Contaminants found at the Site include constituents of creosote known as polynuclear aromatic hydrocarbons (PAHs), as well as chromium, copper, arsenic, and pentachlorophenol. PAHs have been shown to be toxic to humans and other biological receptors, and a number of PAH compounds are classified by EPA as Class B2 carcinogens, i.e., potential human carcinogens based on animal studies. PAHs are bio-accumulative and will bio-magnify in higher trophic levels on the food chain, potentially increasing exposure to predator species such as migratory birds. Chromium, copper and arsenic are also known to have toxic effects on humans and other biological receptors. Arsenic is also classified by EPA as a potential human carcinogen. Pentachlorophenol is likewise toxic to human and biological receptors.
- G. The Site lies within the alluvial plain of the Cape Fear River. The soils underlying the Site are sands and silty sands normally associated with shallow alluvial deposits and allow rapid infiltration of rainfall to ground waters beneath the Site. Ground water beneath

the Site is encountered at a depth of three to five feet below land surface and flows radially from the center of the Site in a southerly, easterly and westerly direction towards surface drainage features bordering the Site, including Greenfields Creek and the Cape Fear River. Ground waters beneath the Site discharge into these surface waters, including Greenfields Creek and the Cape Fear River.

- H. Contaminants at the Site pose a current or potential risk to human populations living in the vicinity of the Site, trespassers, and persons consuming fish or shellfish from Greenfields Creek and the Cape Fear River. Contaminants at the Site also pose a risk to non-human receptors inhabiting the Site, migratory birds, and aquatic receptors inhabiting adjacent surface water bodies, including a number of threatened or endangered species, e.g., the American alligator and the Florida manatee.
- I. Actual or threatened releases of hazardous substances from the Site pose an unacceptable level of risk to human and/or biological receptors. Releases of hazardous substances to the adjacent surface waters is a continuous and on-going phenomenon.
- J. The Respondent has undertaken an active program to identify and remediate soil contaminated with creosote and SVOCs. The program included excavation, treatment and landfarming of contaminated soils at the Site.

#### V. CONCLUSIONS OF LAW

- A. The Site is a facility within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
- B. Respondent is a person as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
- C. Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
- D. Contaminants found at the Site as described in Section IV above are hazardous substances within the meaning of Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or constitute a pollutant or contaminant that may present an imminent and substantial danger to the public health or welfare under Section 104(a)(1) of CERCLA, 42 U.S.C. 9604(a)(1).
- E. The hazardous substances described have been released into the environment and its potential migration

pathways constitute both an actual release and threatened release within the meaning of Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

#### VI. DETERMINATIONS

Based on the Findings of Fact and Conclusions of Law set out above, EPA has determined that:

- A. The actual and/or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health or welfare or the environment.
- B. The actions required by this Consent Order are necessary to protect the public health and/or welfare and/or the environment.
- C. In accordance with Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1), EPA has determined that the work to be performed pursuant to this Consent Order, if performed according to the terms of this Order, will be done properly and promptly by Respondent. EPA has also determined that Respondent is qualified to conduct such work.

#### VII. WORK TO BE PERFORMED

All aspects of the Work to be performed by Respondent pursuant to this Consent Order shall be under the direction and supervision of a qualified contractor who shall be a qualified professional engineer or geologist with expertise in hazardous site cleanup, the selection of which shall be subject to approval by EPA. Within fifteen (15) days after the effective date of this Consent Order, Respondent shall submit to EPA in writing the name, title, and qualifications of any supervising contractor(s) proposed to be used in carrying out the RI/FS to be performed pursuant to this Consent Order. EPA shall notify Respondent of its approval or disapproval in writing, within twenty (20) calendar days of its receipt of this submission by Respondent.

If EPA disapproves of the selection of any contractor, Respondent shall submit a list of alternate contractors to EPA within fifteen (15) days of receipt of EPA's disapproval of the contractor previously selected. EPA shall, within twenty (20) calendar days of receipt of the list, provide written notice of the names of the contractors that it approves. Respondent may at their election select any one from that list. Respondent shall notify EPA of the name of the contractor selected within fifteen (15) calendar days of EPA's notice of the approved contractors.



If, at any time thereafter, Respondent proposes to change any contractor, Respondent shall give written notice to EPA and shall obtain approval from EPA before the new contractor performs any work under this Consent Order.

Based on the foregoing, it is hereby AGREED TO AND ORDERED that the following work will be performed:

A. Within forty-five (45) calendar days of the effective date of this Consent Order, Respondent shall submit to EPA a plan for a complete Remedial Investigation and Feasibility Study (RI/FS Work Plan). The RI/FS Work Plan shall be developed and submitted in conjunction with a Sampling and Analysis Plan and a Health and Safety Plan, although each plan may be delivered under separate cover. These plans shall be developed in accordance with the National Contingency Plan and the attached Scope of Work (SOW) (Attachment 1) which is hereby made a part of this Consent Order as if fully set forth herein. The RI/FS Work Plan shall include a comprehensive description of the work to be performed, the medias to be investigated (i.e., air, groundwater, surface water, surface and subsurface soils and sediments, etc.), the methodologies to be utilized, and the rationale for the selection of each methodology. A comprehensive schedule for completion of each major activity required by this Consent Order and including the submission of each deliverable listed in the RI/FS Scope of Work shall also be included. Such schedule shall reflect submittal of the Draft Feasibility Study within 300 calendar days of the effective date of this Consent Order.

The Sampling and Analysis Plan (SAP) shall include procedures to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data generated will meet the Data Quality Objectives (DQOs) established. The SAP provides a mechanism for planning field activities and consists of a Field Sampling and Analysis Plan (FSAP) and a Quality Assurance Project Plan (QAPP).

The FSAP shall define in detail the sampling and data-gathering methods that shall be used on the project. It shall include sample objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, and sample handling and analysis. The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the desired DQOs.

A Health and Safety Plan shall be prepared in conformance with the Respondent's health and safety program and OSHA regulations and protocols.

B. Respondent will implement the RI/FS Work Plan approved by EPA. The EPA approved RI/FS Work Plan and any EPA approved

amendments thereto will be attached to and incorporated in this Consent Order as Attachment 2. The RI/FS will be conducted in accordance with the schedule contained in the RI/FS Work Plan as approved by EPA.

C. Within seven (7) calendar days of the approval of the RI/FS Work Plan by EPA, Respondent will commence work on Task 1 of the RI/FS Work Plan.

D. Respondent shall perform the Baseline Risk Assessment. The major components of the Baseline Risk Assessment include contaminant identification, exposure assessment, toxicity assessment, and human health and ecological risk characterization. Respondent shall prepare the baseline risk assessment in accordance with pertinent EPA guidance, including Risk Assessment Guidance for Superfund (RAGS), EPA/540/1-89/002, December 1989.

Respondent shall prepare a Baseline Risk Assessment Report based on the data collected during the Site Characterization. EPA will release this Report to the public at the same time it releases the final RI Report. Both reports will be put into the administrative record for the Site.

EPA will respond to all significant comments on the Baseline Risk Assessment that are resubmitted during the formal comment period in the Responsiveness Summary of the Record of Decision.

E. Respondent shall submit to EPA written monthly progress reports which: (1) describe the actions which have been taken toward achieving compliance with this Consent Order during the previous month; (2) include all results of sampling and tests and all other data received by Respondent during the course of the work; (3) include all plans and procedures completed under the Work Plan during the previous month; (4) describe all actions, data, and plans which are scheduled for the next month, and provide other information relating to the progress of the work as deemed necessary by EPA; and (5) include information regarding percentage of completion, unresolved delays, encountered or anticipated, that may affect the future schedule for implementation of the Scope of Work and/or RI/FS Work Plans, and a description of efforts made to mitigate those delays or anticipated delays. These progress reports are to be submitted to EPA by the fifth day of every month following the effective date of this Consent Order.

F. Deliverables, including reports, plans or other correspondence to be submitted pursuant to this Consent Order, shall be sent by regular certified mail, express mail or

overnight delivery to the following addresses or to such other addresses as the EPA hereafter may designate in writing:

Bernie Hayes  
Remedial Project Manager  
EPA - Region IV  
Waste Management Division  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

The number of copies to be submitted to EPA for each deliverable is identified in the RI/FS Scope of Work.

For informational purposes documents (two copies) shall be sent to:

Mr. Jack Butler  
North Carolina Superfund Section  
P.O. Box 27687  
Raleigh, NC 27611-4811

Documents to be submitted to Respondent's Project Coordinator should be sent to:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

G. EPA may determine that other tasks, including remedial investigatory work and/or engineering evaluation, are necessary as part of a RI/FS in addition to EPA-approved tasks and deliverables, including reports, which have been completed pursuant to this Consent Order. Respondent shall implement any additional tasks which EPA determines are necessary as part of the RI/FS and which are in addition to the tasks detailed in the RI/FS Work Plan. The additional work shall be completed in accordance with the standards, specifications, and schedule determined or approved by EPA.

VIII. SUBMISSIONS REQUIRING AGENCY APPROVAL

A. EPA reserves the right to comment on, modify and direct changes for all deliverables. Upon receipt of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Order, EPA shall either: (1) approve the submission; or (2) disapprove the submission, notifying Respondent of deficiencies. If such submission is disapproved, EPA shall either: (1) notify Respondent that EPA will modify the submission to cure the deficiencies; or (2) direct Respondent to modify the submission to cure the deficiencies.

B. Upon receipt of a notice of disapproval and notification directing modification of the submission, Respondent shall, within thirty (30) days, cure the deficiencies and resubmit the plan, report, or other item for approval. Notwithstanding the notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission.

C. In the event of approval or modification of the submittal by EPA, Respondent shall proceed to take any action required by the plan, report, or other item, as approved or modified.

D. If, upon resubmission, the plan, report, or item is not approved, Respondent shall be deemed to be in violation of this Consent Order and stipulated penalties shall begin to accrue pursuant to Section XVI of this Consent Order. EPA retains the right to seek stipulated or statutory penalties, to require the amendment of the document, to perform additional studies, to conduct a complete RI/FS pursuant to its authority under CERCLA, and to take any other action, including, but not limited to, enforcement action to recover its costs pursuant to its authority under CERCLA.

E. Neither failure of EPA to expressly approve or disapprove of Respondent's deliverables within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Respondent is responsible for preparing and submitting deliverables acceptable to EPA.

F. Respondent shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct and completion of the RI/FS. In addition to the discussion of the technical aspects of the RI/FS, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

G. The provisions of this Consent Order shall govern all proceedings regarding the RI/FS work conducted pursuant to this Consent Order. In the event of any inconsistency between this Consent Order and any required deliverable submitted by Respondent, the inconsistency will be resolved in favor of this Consent Order.

#### IX. DESIGNATED PROJECT COORDINATORS

A. On or before the effective date of this Consent Order, EPA and Respondent will each designate a Project Coordinator and an Alternate Project Coordinator. The "Project Coordinator" for EPA will be the Remedial Project Manager (RPM) or the On-Scene Coordinator (OSC) responsible for this Site. Each Project Coordinator will be responsible for overseeing the implementation of this Consent Order. The EPA Project Coordinator will be EPA's

designated representative at the Site. To the maximum extent possible, communications between Respondent and EPA, including all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, will be directed through the Project Coordinators.

B. EPA and Respondent each have the right to change their respective Project Coordinator. Such a change will be accomplished by notifying the other party in writing at least five (5) calendar days prior to the change.

C. The EPA designated Project Coordinator will have the authority vested in an RPM or OSC by the National Contingency Plan, 40 C.F.R. Part 300, as amended. This includes the authority to halt, conduct, or direct any work required by this Consent Order, or any response actions or portions thereof when he or she determines that conditions may present an immediate risk to public health or welfare or the environment.

D. The absence of the EPA Project Coordinator from the Site shall not be cause for the stoppage or delay of work.

E. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. 9604(a). The oversight assistant may observe work and make inquiries in the absence of EPA, but is not authorized to modify the work plan.

#### X. QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS

A. Respondent shall use quality assurance, quality control, and chain of custody procedures in accordance with EPA's "Interim Guidelines and Specifications For Preparing Quality Assurance Project Plans" (QAMS-005/80) and the "EPA Region IV Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual (U.S. EPA Region IV, Environmental Services Division, February 1, 1991), and subsequent amendments to such guidelines. Prior to the commencement of any monitoring project under this Consent Order, Respondent shall submit for review, modification and/or approval by EPA, a Quality Assurance Project Plan ("QAPP") that is consistent with applicable guidelines. Sampling data generated consistent with the QAPP(s) shall be admissible as evidence, without objection, in any proceeding under Section XIV of this Consent Order. Respondent shall assure that EPA personnel or authorized representatives are allowed access to any laboratory utilized by Respondent in implementing this Consent Order.

B. Respondent shall make available to EPA the results of all sampling and/or tests or other data generated by Respondent with respect to the implementation of this Consent Order and

shall submit these results in monthly progress reports as described in Section VII.E. of this Consent Order.

C. At the request of EPA, Respondent shall allow split or duplicate samples to be taken by EPA, and/or their authorized representative, of any samples collected by Respondent pursuant to the implementation of this Consent Order. Respondent shall notify EPA not less than fourteen (14) days in advance of any sample collection activity. In addition, EPA shall have the right to collect any additional samples that EPA deems necessary.

D. Respondent shall ensure that the laboratory utilized by Respondent for analyses participates in a EPA quality assurance/quality control program equivalent to that which is followed by EPA and which is consistent with EPA document QAMS-005/80. In addition, EPA may require submittal of data packages equivalent to those generated in the EPA Contract Laboratory Program (CLP) and may require laboratory analysis of performance samples (blank and/or spike samples) in sufficient number to determine the capabilities of the laboratory.

E. Notwithstanding any provision of this Consent Order, the EPA hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA, and any other applicable statute or regulation.

#### XI. ACCESS

A. From the date of execution of this Consent Order until EPA provides written notice of satisfaction of the terms of the Order, the EPA and its authorized representatives and agents shall have access at all times to the Site and any property to which access is required for the implementation of this Consent Order, to the extent access to the property is controlled by or available to Respondent, for the purposes of conducting any activity authorized by or related to this Consent Order, including, but not limited to:

1. Monitoring the RI/FS work or any other activities taking place on the property;
2. Verifying any data or information submitted to the United States;
3. Conducting investigations relating to contamination at or near the Site;
4. Obtaining samples;
5. Evaluating the need for or planning and implementing additional remedial or response actions at or near the Site; and



6. Inspecting and copying records, operating logs, contracts, or other documents required to assess Respondent's compliance with this Consent Order.

B. To the extent that the Site or any other area where work is to be performed under this Consent Order is owned or controlled by persons other than Respondent, Respondent shall secure from such persons access for Respondent, as well as for EPA and authorized representatives or agents of EPA, as necessary to effectuate this Consent Order. Copies of such access agreements will be provided to EPA prior to Respondent's initiation of field activities. If access is not obtained within thirty (30) days of the effective date of this Consent Order, Respondent shall promptly notify the EPA. The United States may thereafter assist Respondent in obtaining access. Respondent shall, in accordance with Section XVII herein, reimburse the United States for all costs incurred by it in obtaining access, including but not limited to, attorneys' fees and the amount of just compensation and costs incurred by the United States in obtaining access.

C. Notwithstanding any provision of this Consent Order, the EPA retains all of its access authorities and rights under CERCLA, RCRA and any other applicable statute or regulations.

#### XII. CONFIDENTIALITY OF SUBMISSIONS

A. Respondent may assert a confidentiality claim, if appropriate, covering part or all of the information requested by this Consent Order pursuant to 40 C.F.R. § 2.203(b). Such an assertion will be adequately substantiated when the assertion is made. Analytical data will not be claimed as confidential by Respondent. Information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Respondent.

B. Respondent waives any objection to the admissibility into evidence (without waiving any objection as to weight) of the results of any analyses of sampling conducted by or for them at the Site or of other data gathered pursuant to this Consent Order that has been verified by the quality assurance/quality control procedures established pursuant to Section X.

#### XIII. RECORD PRESERVATION

EPA and Respondent agree that each will preserve, during the pendency of this Consent Order and for a minimum of six (6) years after its termination, all records and documents in their possession or in the possession of their divisions, employees, agents, accountants, contractors, or attorneys which relate in

any way to the Site, despite any document retention policy to the contrary. After this six year period, Respondent will notify EPA within ninety (90) calendar days prior to the destruction of any such documents. Upon request by EPA, Respondent will make available to EPA such records or copies of any such records. Additionally, if EPA requests that documents be preserved for a longer period of time, Respondent will comply with that request.

#### XIV. DISPUTE RESOLUTION

Any disputes arising under this Consent Order shall be resolved as follows: If the Respondent objects to any EPA notice of disapproval or decision made pursuant to this Consent Order, Respondent shall notify EPA's Project Coordinator in writing of its objections within 14 calendar days after receipt of the decision. Respondent's written objections shall define the dispute, state the basis of Respondent's objections, and be sent certified mail, return receipt requested. EPA and Respondent then have an additional fourteen (14) calendar days to reach agreement. If agreement cannot be reached within fourteen (14) calendar day period, the EPA Waste Management Division Director shall provide a written statement of the decision and the reasons supporting that decision to Respondent. The Division Director's determination is EPA's final decision. If Respondent does not agree to perform or does not actually perform the task in dispute as determined by EPA's Division Director, EPA reserves the right to conduct the work itself, to seek reimbursement from Respondent, and/or to seek other appropriate relief.

Respondent is not relieved of its obligations to perform and conduct any work required by this Consent Order while a matter is pending in dispute resolution.

#### XV. FORCE MAJEURE

A. "Force Majeure" is defined for the purposes of the Consent Order as an event arising from causes entirely beyond the control of Respondent and of any entity controlled by Respondent including its contractors and subcontractors, which could not have been overcome by due diligence which delays or prevents the performance of any obligation under this Consent Order. Examples of events which may constitute force majeure events include extraordinary weather events, natural disasters, and national emergencies. Examples of events that are not force majeure events include, but are not limited to, normal inclement weather, increased costs or expenses of the Work to be performed under this Consent Order, the financial difficulty of Respondent to perform such tasks, the failure of Respondent to satisfy its obligation under this Consent Order, acts or omissions not otherwise force majeure attributable to Respondent's contractors or representatives, and the failure of Respondent or Respondent's

contractors or representatives to make complete and timely application for any required approval or permit.

B. When circumstances occur which may delay or prevent the completion of any phase of the Work Plan or access to the Site or to any property on which part of the Work Plan is to be performed, whether or not caused by a force majeure event, Respondent shall notify the EPA Project Coordinator orally of the circumstances within forty-eight (48) hours of when Respondent first knew or should have known that the event might cause delay. If the EPA Project Coordinator is unavailable, Respondent shall notify the designated alternate or the Director of the Waste Management Division, EPA Region IV. Within seven (7) calendar days after Respondent first became aware of such circumstances, Respondent shall supply to EPA in writing: (1) the reasons for the delay; (2) the anticipated duration of the delay; (3) all actions taken or to be taken to prevent or minimize the delay; (4) a schedule for implementation of any measures to be taken to mitigate the effect of the delay; and (5) a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare, or the environment. Respondent shall exercise best efforts to avoid or minimize any delay and any effects of a delay. Failure to comply with the above requirements shall preclude Respondent from asserting any claim of force majeure.

C. If EPA agrees that a delay is or was caused by a force majeure event, the time for performance of the obligations under this Consent Order that are directly affected by the force majeure event shall be extended by agreement of the parties, pursuant to Section XXIII, for a period of time not to exceed the actual duration of the delay caused by the force majeure event. An extension of the time for performance of the obligation directly affected by the force majeure event shall not necessarily justify an extension of time for performance of any subsequent obligation.

D. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, or does not agree with Respondent on the length of the extension, the issue shall be subject to the dispute resolution procedures set forth in Section XIV of the Consent Order. In any such proceedings, to qualify for a force majeure defense, Respondent shall have the burden of proof that the delay or anticipated delay was or will be caused by a force majeure event, that the duration of the delay was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondent complied with the requirements of paragraph B of this Section. Should Respondent carry this burden, the delay at issue shall be deemed not to be a violation by Respondent of the affected obligation of the Consent Order.

XVI. STIPULATED PENALTIES

Unless excused under the provisions of Sections XIV or XV, the Respondent shall pay into the Hazardous Substance Superfund administered by EPA, the sums set forth below as stipulated penalties.

Stipulated penalties shall accrue as follows:

A. For each day during which Respondent fails to perform, in accordance with the schedules contained in this Consent Order and in the various plans and reports required under this Consent Order incorporated by reference herein, any of the following activities:

1. for failure to timely submit the RI/FS Work Plan, Sampling and Analysis Plan, draft RI Report and draft FS Report required under this Consent Order;

2. for failure to timely submit any modifications requested by EPA or its representatives to the RI/FS Work Plan, Sampling and Analysis Plan, draft RI Report and draft FS Report as required under this Consent Order; and

3. for failure to timely submit payment of oversight costs as provided in Section XVII.

Respondent shall be liable to EPA for stipulated penalties in the following amounts:

<u>Period of Failure to Comply</u>	<u>Penalty Per Violation Per Day</u>
1st through 14th day	\$1,500
15th through 44th day	\$2,500
45th day and beyond	\$5,000

B. If Respondent fails to submit a monthly progress report by its due date, Respondent shall be liable to EPA for stipulated penalties in the amount of \$500 per violation for each day during which Respondents fail to submit and, if necessary, modify monthly reports.

C. Respondent shall be liable to EPA for stipulated penalties in the amount of \$500 per violation for each day during which Respondent fails to comply with all other requirements of this Consent Order including, but not limited to, any implementation schedule, payment requirement, notification requirement or completion deadline.

All stipulated penalties begin to accrue on the day the violation occurs or on the day following Respondent's failure to comply with any schedule or deadline or the terms, conditions, or

requirements contained in this Consent Order and/or Work Plan. Stipulated penalties shall continue to accrue until Respondent's violation ends or until Respondent complies with the particular schedule or deadline.

Payment of stipulated penalties shall be due and owing within fifteen (15) days from the receipt of a written notice from EPA notifying Respondent that penalties have been assessed. Interest shall accrue on any unpaid amounts, beginning at the end of the fifteen day period, at the rate established by the Department of Treasury under 31 U.S.C. § 3717. Respondent shall pay a handling charge of one percent to be assessed at the end of each 31 day period, and a six percent per annum penalty charge, to be assessed if the penalty is not paid in full within 90 days after it is due. The check and transmitted letter shall identify the Name of the Site, the Site identification number and the title of this Order. A copy of the transmittal letter should be sent simultaneously to the EPA Project Coordinator.

Payment shall be made to:

U. S. Environmental Protection Agency  
Region IV  
Superfund Accounting  
P. O. Box 100142  
Atlanta, Georgia 30384  
ATTENTION: (Collection Officer for Superfund)

Respondent may dispute EPA's right to the stated amount of penalties by invoking the Dispute Resolution procedures under Section XIV of this Order. Penalties shall accrue but need not be paid during the dispute resolution period. If Respondent does not prevail upon resolution, all penalties shall be due to EPA within 30 days of resolution of the dispute. If Respondent prevails upon resolution, no penalties shall be paid.

In the event that EPA provides for corrections to be reflected in the next deliverable and does not require resubmission of that deliverable, stipulated penalties for that interim deliverable shall cease to accrue on the date of such decision by EPA.

Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Order.

The stipulated penalties set forth in this Section do not preclude EPA from electing to pursue any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Consent Order. Such remedies and sanctions may include a suit for statutory penalties up to the amount authorized by law, a federally-funded response action, and a suit for reimbursement of costs incurred by the United States.

XVII. REIMBURSEMENT OF OVERSIGHT AND RESPONSE COSTS

In accordance with Section 104(a)(1) of CERCLA, as amended, 42 U.S.C. § 9604(a)(1), Respondent agrees to reimburse the Hazardous Substance Superfund for all response and oversight costs incurred by EPA or its authorized representatives in oversight of Respondent's performance of work under the Consent Order.

At the end of each fiscal year, EPA will submit to Respondent an accounting of all response and oversight costs incurred by the U.S. Government with respect to this Consent Order. Oversight costs shall include all direct and indirect costs of EPA's oversight arrangement for the RI/FS, including, but not limited to, time and travel costs of EPA personnel and associated indirect costs, contractor costs, compliance monitoring, including the collection and analysis of split samples, inspection of RI/FS activities, site visits, interpretation of Consent Order provisions, discussions regarding disputes that may arise as a result of this Consent Order, review and approval or disapproval of reports, the costs of redoing any of Respondent's tasks, and any assessed interest.

EPA's certified Agency Financial Management System Summary data (SCORES Reports) and any other necessary documents, shall serve as the basis for payment demands.

Failure to submit an accounting in one fiscal year does not prevent EPA from submitting an accounting for that year in a subsequent fiscal year. Respondent shall, within thirty (30) calendar days of receipt of each accounting, remit a certified or cashiers check for the amount of those costs made payable to the Hazardous Substance Superfund. Interest shall begin to accrue on the unpaid balance from that date. Checks should specifically reference the identity of the Site and should be sent to:

U. S. Environmental Protection Agency  
Region IV  
Superfund Accounting  
P. O. Box 100142  
Atlanta, Georgia 30384  
ATTENTION: Collection Officer for Superfund

A copy of the transmittal letter should be sent simultaneously to the EPA Project Coordinator.

Respondent agrees to limit any disputes concerning costs to accounting errors and the inclusion of costs outside the scope of this Consent Order. Respondent shall identify any contested costs and the basis of its objection. All undisputed costs shall be remitted by Respondent in accordance with the schedule set out above. Disputed costs shall be paid by Respondent into an escrow



account while the dispute is pending. Respondent bears the burden of establishing an EPA accounting error and the inclusion of costs outside the scope of this Consent Order.

EPA reserves the right to bring an action against Respondent pursuant to Section 107 of CERCLA to enforce the response and oversight cost reimbursement requirements of this Consent Order and to collect stipulated penalties assessed pursuant to section XVI of this Consent Order.

#### XVIII. RESERVATION OF RIGHTS

Notwithstanding compliance with the terms of this Consent Order, the Respondent is not released from liability, if any, for any actions beyond the terms of this Consent Order taken by EPA regarding this Site. EPA reserves the right to take any enforcement action pursuant to CERCLA or any other available legal authority, including the right to seek injunctive relief, monetary penalties, and punitive damages for any violation of law or this Consent Order.

Except as otherwise provided herein, EPA and Respondent expressly reserve all rights and defenses that they may have, including EPA's right both to disapprove of work performed by Respondent and to require that Respondent perform tasks in addition to those detailed in the RI/FS Work Plan, as provided in this Consent Order. In the event that Respondent declines to perform any additional or modified tasks, EPA will have the right to undertake any RI/FS work. In addition, EPA reserves the right to undertake removal actions and/or remedial actions at any time. In either event, EPA reserves the right to seek reimbursement from Respondent thereafter for such costs which are incurred by the United States and Respondent reserves all rights to contest or defend against such claims or actions.

Following satisfaction of the requirements of this Consent Order, Respondent shall have resolved its liability to EPA for the performance of the RI/FS that is the subject of this Order. Respondent is not released from liability, if any, for any actions taken beyond the terms of this Order regarding removals, other operable units, remedial design/remedial action (RD/RA), or activities arising pursuant to section 121(c) of CERCLA.

#### XIX. OTHER CLAIMS

Nothing in this Consent Order constitutes a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous wastes,

pollutants, or contaminants found at, taken to, or taken from the Site.

EPA reserves the right to bring an action against Respondent pursuant to Section 107 of CERCLA for recovery of all response and oversight costs incurred by the United States related to this Consent Order and not reimbursed by Respondent, as well as any other past and future costs incurred by the United States in connection with response activities conducted pursuant to CERCLA at this site.

This Consent Order does not constitute a preauthorization of funds under Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).

In entering into this Consent Order, Respondent waives any right to seek reimbursement under Section 106(b)(2) of CERCLA, 42 U.S.C. § 9606(b)(2), for any past costs associated with this Site, or any costs incurred in complying with this Order.

Respondent shall bear its own costs and attorney fees.

#### XX. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order will be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations unless an exemption from such requirements is specifically provided in this Consent Order, or made a part of this Consent Order by being incorporated herein at some later date.

#### XXI. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Respondent agrees to indemnify and save and hold harmless the United States, its agencies, departments, officials, agents, employees, contractors, or representative, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent, its officers, employees, receivers, trustees, agents, or assigns, in carrying out the activities pursuant to this Consent Order. The United States Government or any agency or authorized representative thereof shall not be held to be a party to any contract involving Respondent at or relating to the Site.

#### XXII. PUBLIC COMMENT

Upon submittal to EPA of the Feasibility Study Final Report, EPA will make both the Remedial Investigation Final Report and the Feasibility Study Final Report and EPA's Proposed Plan available to the public for review and comment for, at a minimum, a thirty (30) day period, pursuant to EPA's Community Relations Plan and the NCP. Following the public review and comment period, EPA

will notify Respondent of the remedial action alternative selected for the Site.

XXIII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

In consideration of the communications between Respondent and EPA prior to the issuance of this Consent Order concerning its terms, Respondent agrees that there is no need for a settlement conference prior to the effective date of this Consent Order. Therefore, the effective date of this Consent Order will be the date on which it is signed by EPA. This Consent Order may be amended by mutual agreement of EPA and Respondent. Such amendments will be in writing and will have, as the effective date, that date on which such amendments are signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Consent Order.

Any reports, plans, specifications, schedules, and attachments required by this Consent Order are, upon approval by EPA, incorporated into this Consent Order. Any noncompliance with such EPA approved reports, plans, specifications, schedules, and attachments will be considered a failure to achieve the requirements of this Consent Order and will subject the Respondent to the provisions included in the "Force Majeure" and "Stipulated Penalties" sections (Sections XV and XVI) of this Consent Order.

No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondent will be construed as relieving Respondent of its obligation to obtain such formal approval of EPA as may be required by this Consent Order.

XXIV. NOTICE TO THE STATE

EPA has notified the State of North Carolina regarding the requirements of this Consent Order.

Upon completion of the RI/FS, pursuant to the requirements of Section 104(c)(2) of CERCLA, 42 U.S.C. § 9604(c)(2), EPA will notify the State of North Carolina before determining the appropriate remedial action to be taken at the Site.

XXV. TERMINATION AND SATISFACTION

This Consent Order shall terminate when Respondent demonstrates in writing and certifies to the satisfaction of EPA that all activities required under this Consent Order, including any additional work, payment of past costs, response and oversight costs, and any stipulated penalties demanded by EPA, have been performed and EPA has approved the certification. This notice

shall not, however, terminate Respondent's obligation to comply with Sections XIII, XVII, and XVIII of this Consent Order.

The certification shall be signed by a responsible official representing Respondent. The representative shall make the following attestation: "I certify that the information contained in or accompanying this certification is true, accurate, and complete." For purposes of this Consent Order, a responsible official is a corporate official who is in charge of a principal business function.

IT IS SO AGREED:

BY: \_\_\_\_\_ Date \_\_\_\_\_  
(Respondent)  
(Title)

IT IS SO AGREED AND ORDERED:

BY: \_\_\_\_\_ Date \_\_\_\_\_  
Richard D. Green  
Acting Director  
Waste Management Division  
Region IV  
U.S. Environmental Protection Agency

SCOPE OF WORK FOR THE  
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY  
AT THE SOUTHERN WOOD PIEDMONT SITE

INTRODUCTION

The primary objectives of the Remedial Investigation/Feasibility Study are to investigate the nature and extent of all contamination associated with the Southern Wood Piedmont Site (the Site), assess the current and potential risk to public health, welfare, and the environment, and to develop and evaluate potential Remedial Action Alternatives for the Remedial Action at the Site. The Remedial Investigation (RI) and Feasibility Study (FS) are interactive and shall be conducted concurrently so that the data collected in the RI influences the development of Remedial Action Alternatives in the FS, which in turn affects the data needs and the scope of Treatability Studies needed for implementation of the Remedial Action.

The Respondents shall conduct the RI/FS, the Baseline Risk Assessment, and produce an RI and an FS Report that are in accordance with this Scope of Work, the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, (Interim Final) (U.S. Environmental Protection Agency (EPA) Office of Emergency and Remedial Response, October 1988) (RI/FS Guidance), the National Oil and Hazardous Substances Pollution Contingency Plan (March 8, 1990), Risk Assessment for Superfund (December, 1989) and other guidance used by EPA in conducting an RI/FS (the primary sources of guidance are listed in Attachment A), as well as any additional requirements in the Administrative Order on Consent (AOC). The RI/FS Guidance describes the report formats and the required report content. Pertinent RI/FS Guidance section numbers are denoted in parenthesis throughout this Scope of Work. The Respondent shall furnish all necessary personnel, materials, and services needed, or incidental to, performing the RI/FS, except as otherwise specified in the AOC.

At the completion of the RI/FS, EPA shall be responsible for the selection of a remedy to be implemented for the Site. EPA will document this selection of a remedy in the Record of Decision (ROD).

Section 121 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9621, as amended by the Superfund Amendment Reauthorization Act of 1986 (SARA), P.L. 99-499, requires that the remedial alternative

selected for the Site will be protective of human health and the environment, will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws or regulations, and will address the statutory preference for on-site treatment which permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants as a principal element. The Final RI/FS Reports, as adopted by EPA, and the Baseline Risk Assessment will, with the remainder of the Administrative Record, form the basis for the selection of the remedy to be implemented for the Site and will provide the information necessary to support the development of the ROD.

As specified in CERCLA Section 104(a)(1), 42 U.S.C. § 9604(a)(1), EPA must provide oversight of the Respondent's activities throughout the RI/FS. The Respondent shall support EPA's initiation and conduct of activities related to the implementation of oversight activities. However, the primary responsibility for conducting an adequate RI/FS, in order to enable EPA to select and support a remedy, shall lie with the Respondent. EPA review and approval of deliverables is a tool to assist this process and to satisfy, in part, EPA's responsibility to provide effective protection of public health, welfare, and the environment. EPA approval of a task or deliverable shall not be a guarantee as to the ultimate adequacy of such task or deliverable. A summary of the major deliverables that Respondent shall submit for the RI/FS is attached (Attachment B). In addition, a general schedule of RI/FS activities is also attached (Attachment C).

#### **TASK 1 - SCOPING (RI/FS Guidance, Chapter 2)**

Scoping is the initial planning process of the RI/FS and has been initiated by EPA to determine the site-specific objectives of the RI/FS prior to negotiations between the Respondent and EPA. Scoping is continued, repeated as necessary, and refined throughout the RI/FS process. In addition to developing the Site Objectives of the RI/FS, EPA has developed a Site Management Strategy. Consistent with the Site Management Strategy, the specific project scope shall be planned by the Respondent and EPA. The Respondents shall document the specific project scope in a Work Plan. Because the work required to perform an RI/FS is not fully known at the onset, and is phased in accordance with a Site's complexity and the amount of available information, it may be necessary to modify the Work Plan and associated time schedules during the RI/FS to satisfy the objectives of the study.



The primary objectives for conducting the RI/FS at the Site have been determined preliminarily, based on available information, to be the following:

1. Review of existing information pertaining to the Site. This review includes EPA Site Inspection Reports, the EPA Hazardous Ranking System Scoring package, reports from local, State and Federal agencies, court records, information from local businesses such as local well drillers and waste haulers and generators, facility records, and information from facility owners and employees and nearby citizens.
2. Review of relevant guidance (see attached references). This information shall be used in performing the RI/FS and preparing all deliverables under this SOW.
3. Identification of all potential Federal and State applicable or relevant and appropriate requirements (ARARs). EPA may assist Respondents in obtaining the State ARARs.
4. Determination of the nature and lateral and vertical extent of contamination (waste types, concentrations and distributions) for all affected media including air, ground water, soil, surface water, and sediment, etc.
5. Performance of a well survey within a one mile radius of the Site including determining water uses, well construction methods used, the number and age of users, and the volume and rate of water usage.
6. Identification and screening of potential treatment technologies along with containment/disposal requirements for residuals or untreated wastes.
7. Assembly of technologies into Remedial Action Alternatives, followed by screening of those alternatives.
8. Performance of bench or pilot Treatability Studies as necessary.
9. Detailed analysis of those Remedial Action Alternatives which survive the screening process.

The Site Management Strategy for the Site includes the following:

1. A complete investigation of the Southern Wood Piedmont Site, including any and all on-site contamination, as well as any and all off-site contamination which may have been caused by contaminants originating from on-site source area(s).

2. Use of the RI to identify any other Potentially Responsible Parties (PRPs) that may be involved. Additional PRPs shall be identified during the RI if additional PRPs exist. EPA will make all determinations on potential EPA enforcement actions; providing, however, that nothing in this paragraph shall preclude Respondent from asserting any claim, or defense, against any person in any appropriate forum without prior approval of EPA, or proceeding against any PRP that is not identified, or does not equitably participate in this matter.
3. It is anticipated at this time that one ROD will be prepared for the Site, involving one Superfund cleanup.
4. No interim remedial measures are anticipated for the Site at this point in time.
5. EPA oversight of the Respondent's conduct of the work (i.e., the RI/FS and any response action) to ensure compliance with applicable laws, regulations and guidance and to ensure that the work proceeds in a timely fashion.
6. Preparation of the Baseline Risk Assessment. Respondent shall provide requested information regarding the nature and extent of contamination at the Site, including sampling data, to EPA in a timely manner in the form of a Data Summary Report, according to a schedule to be provided to the performing party. The respondent shall use the information in the Data Summary Report to prepare a Baseline Risk Assessment for the Site. The Baseline Risk Assessment shall include:
  - Data Collection and Evaluation
  - Exposure Assessment and Documentation  
Determination of Actual and Potential Pathways and Receptors
  - Toxicity Assessment and Documentation
  - Ecological Assessment
  - Risk Characterization including
    - \* Carcinogenic Risks
    - \* Noncarcinogenic Risks
    - \* Environmental Risks to Flora and Fauna
7. EPA management of the Remedy Selection and Record of Decision phase with input from State Agencies, Natural Resource Trustees and the Public (including the Respondents).

When scoping the specific aspects of a project, the Respondent must meet with EPA to discuss all project planning decisions and special concerns associated with the Site. The following activities shall be performed by the Respondent as a function of the project planning process.

a. Site Background (2.2)

The Respondent shall gather and analyze the existing background information regarding the Site and shall conduct a visit to the Site to assist in planning the scope of the RI/FS.

Collect and Analyze Existing Data and Document the Need for Additional Data (2.2.2; 2.2.6; 2.2.7)

Before planning RI/FS activities, all existing-Site data shall be thoroughly compiled and reviewed by the Respondent. Specifically, this compilation and review shall include currently available data relating to the varieties and quantities of hazardous substances at the Site and past disposal practices (what type of contaminants were disposed where, when, and by whom). This compilation and review shall also include results from any previous sampling or other investigations that may have been conducted. The Respondent shall refer to Table 2-1 of the RI/FS Guidance for a comprehensive list of data collection information sources. This information shall be utilized in determining additional data needed for Site Characterization, better defining potential applicable or relevant and appropriate requirements (ARARs), and developing a range of preliminarily identified Remedial Action Alternatives. Subject to EPA approval, Data Quality Objectives (DQOs) shall be established that specify the usefulness of existing data. Decisions on the necessary data and DQOs shall be made by EPA.

Conduct Site Visit

The Respondent shall conduct a visit to the Site with the EPA Remedial Project Manager (RPM) and EPA's oversight contractor during the project scoping phase to assist in developing a conceptual understanding of the sources and areas of contamination as well as potential exposure pathways and receptors at the Site. During the visit to the Site, the Respondent shall observe the physiography, hydrology, geology, and demographics of the Site as well as related natural resource, ecological and cultural features. This information shall be utilized to better scope the project and to determine the need for additional data necessary to characterize the Site, better define potential

ARARs, and narrow the range of preliminarily identified remedial action alternatives.

b. Project Planning (2.2)

Once the Respondents have collected and analyzed existing data and conducted a visit to the Site, the specific project scope shall be planned. Project planning activities include those tasks described below as well as the development of specific required deliverables as described in paragraph c. The Respondent shall meet with EPA regarding the following activities and before the drafting of the scoping deliverables.

Refine the Site Objectives and Develop Preliminary Remedial Action Objectives and Alternatives (2.2.3)

Once existing information about the Site has been analyzed and a conceptual understanding of the potential risks posed by the Site has been obtained, the Respondent shall review and, if necessary, refine the Site Objectives and develop preliminary remedial action objectives for each of the media known or suspected to be contaminated. Any revised Site Objectives shall be documented by the Respondent in a technical memorandum, and are subject to EPA approval prior to development of the other scoping deliverables.

The Respondent shall then identify a preliminary range of broadly defined potential Remedial Action Alternatives and associated technologies. The range of potential alternatives shall include, at a minimum, alternatives in which treatment is used to reduce the toxicity, mobility, or volume of the waste, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; alternatives that involve containment and treatment components; alternatives that involve containment with little or no treatment; and a no-action alternative.

Document the Need for Treatability Studies (2.2.4)

If remedial actions involving treatment have been identified by the Respondent or EPA, Treatability Studies shall be required except where the Respondent can demonstrate to EPA's satisfaction that they are not needed. Where Treatability Studies are needed, identification of possible technologies and screening shall be done and the results submitted with the RI/FS Work Plan. Initial Treatability Study activities (such as research and study design) shall be planned to occur concurrently with Site Characterization activities (see Tasks 3 and 4).

Begin Preliminary Identification of Potential ARARs (2.2.5)

The Respondent shall conduct a preliminary identification of potential State and Federal ARARs (chemical-specific, location-specific, and action-specific) to assist in the refinement of remedial action objectives and the initial identification of Remedial Action Alternatives and ARARs associated with particular actions. ARAR identification shall continue as conditions and contaminants at the Site and Remedial Action Alternatives are better defined.

c. Scoping Deliverables (2.3)

At the conclusion of the project planning phase, the Respondents shall submit an RI/FS Work Plan, a Sampling and Analysis Plan, and a Health and Safety Plan. The RI/FS Work Plan and Sampling and Analysis Plan must be reviewed and approved and the Health and Safety Plan reviewed by EPA prior to the initiation of field activities.

RI/FS Work Plan (2.3.1)

A Work Plan documenting the decisions and evaluations completed during the scoping process shall be submitted to EPA for review and approval. The Work Plan shall be developed in conjunction with the Sampling and Analysis Plan and the Health and Safety Plan, although each plan may be delivered under separate cover. The Work Plan shall include a comprehensive description of the work to be performed, the medias to be investigated (i.e., Air, Ground Water, Surface Water, Surface and Subsurface Soils, and Sediments, etc.), the methodologies to be utilized, and the rationale for the selection of each methodology. A comprehensive schedule for completion of each major activity and submission of each deliverable shall also be included. This schedule shall be consistent with Attachment C.

Specifically, the Work Plan shall present the following:

- A statement of the problem(s) and potential problem(s) posed by the Site and the objectives of the RI/FS.
- A background summary setting forth the following:
  - a description of the Site including the geographic location, and, to the extent possible, a description of the physiography, hydrology, geology, demographics, and the ecological, cultural, and natural resource features of the Site;
  - a synopsis of the history of the Site including a summary of past disposal practices and a description of

previous responses that have been conducted by local, State, Federal, or private parties at the Site;

- a summary of the existing data in terms of physical and chemical characteristics of the contaminants identified and their distribution among the environmental media at the Site.
- A description of the Site Management Strategy developed by EPA during scoping as discussed previously in this SOW and as may be modified with EPA's approval;
- A preliminary identification of Remedial Action Alternatives and data needs for evaluation of Remedial Action Alternatives. This preliminary identification shall reflect coordination with Treatability Study requirements (see Tasks 1 and 4).
- A process for identifying Federal and State ARARs (chemical-specific, location-specific, and action-specific).
- A detailed description of the tasks to be performed, information needed for each task and for EPA's Baseline Risk Assessment, information to be produced during and at the conclusion of each task, and a description of the work products that shall be submitted to EPA. This description must also include the deliverables set forth in the remainder of this Scope of Work.
- A schedule for each of the required activities which is consistent with Attachment C, as it may be amended or modified in accordance with the Superfund Accelerated Cleanup Model ("SCAM"), and the RI/FS Guidance.
- A project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format, and backup data management), monthly reports to EPA (the frequency of these reports may be altered, upon the prior written consent of EPA), and meetings and presentations to EPA at the conclusion of each major phase of the RI/FS.

The Respondent shall refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the required Work Plan.

Because of the unknown nature of the Site and iterative nature of the RI/FS, additional data requirements may be identified throughout the RI/FS process. The Respondent shall submit a technical memorandum documenting any need for additional data along with the proposed DQOs whenever such requirements are identified, in writing, by EPA, or at

Respondent's election. In any event, the Respondent are responsible for fulfilling additional data and analysis needs identified by EPA in writing consistent with the general scope and objectives of this RI/FS and the Administrative Order.

Sampling and Analysis Plan (2.3.2)

The Respondent shall prepare a Sampling and Analysis Plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data generated will meet the DQOs established. The SAP provides a mechanism for planning field activities and consists of a Field Sampling and Analysis Plan (FSAP) and a Quality Assurance Project Plan (QAPP).

The FSAP shall define in detail the sampling and data-gathering methods that shall be used on the project. It shall include sampling objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, and sample handling and analysis. The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the desired DQOs. The DQOs will, at a minimum, reflect use of analytical methods for identifying contamination and addressing contamination consistent with the levels for remedial action objectives identified in the National Contingency Plan, pages 8845 and 8849-8853 (March 8, 1990). In addition, the QAPP shall address personnel qualifications, sampling procedures, sample custody, analytical procedures, and data reduction, validation, and reporting. These procedures must be consistent with the Region IV Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual (February 1, 1991). Field personnel shall be available for EPA QA/QC training and orientation, as required.

The Respondent shall demonstrate, in advance and to EPA's satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This demonstration must include use of methods and analytical protocols for the chemicals of concern (typically the Target Compound List (TCL) and the Target Analyte List (TAL)) in the media of interest within detection and quantification limits consistent with both QA/QC procedures and DQOs approved by EPA in the QAPP for the Site. The laboratory must have and follow an EPA-approved QA/QC program. The Respondent shall provide assurances that EPA has access to laboratory personnel, equipment and records for sample collection, transportation, and analysis. EPA may require that the



Respondent submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment, and material specifications. In addition, EPA may require submittal of data packages equivalent to those generated in the EPA Contract Laboratory Program (CLP) and may require laboratory analysis of performance samples (blank and/or spike samples) in sufficient number to determine the capabilities of the laboratory. If a laboratory not currently participating in the CLP is selected, methods consistent with CLP methods that would be used at this Site for the purposes proposed and QA/QC procedures approved by EPA shall be used.

In addition, if the laboratory is not in the CLP program, a laboratory QA program must be submitted for EPA review and approval granted prior to the shipment of Site samples to that laboratory for analysis.

#### Health and Safety Plan (2.3.3)

A Health and Safety Plan shall be prepared in conformance with the Respondent's health and safety program, and in compliance with OSHA regulations and protocols. The Health and Safety Plan shall include the eleven elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control. It should be noted that EPA does not "approve" the Respondent's Health and Safety Plan, but rather EPA reviews it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.

#### **TASK 2 - COMMUNITY RELATIONS (2.3.4)**

The development and implementation of community relations activities are the responsibility of EPA. The critical community relations planning steps performed by EPA include conducting community interviews and developing a community relations plan. EPA, or its Community Relations Coordinator, will use best efforts to give reasonable notice to Respondent prior to scheduling community relations activities to which Respondent are required to attend or preside. Although implementation of the community relations plan is the responsibility of EPA, the Respondent may be requested to assist by providing information regarding the history of the Site and participating in public meetings. The extent of the Respondent's involvement in community relations activities is left to the discretion of EPA. The Respondent's community relations responsibilities, if any, shall be specified in the community relations plan. All

community relations activities conducted by Respondent shall be subject to oversight by EPA.

The Respondents shall prepare three or more Baseline Risk Assessment memoranda which will summarize the toxicity assessment and human and ecological exposure assessment components of the Baseline Risk Assessment. EPA shall make these memoranda available to all interested parties for comment by placing them in the information repository EPA has established for the Site and by placing them in the Administrative Record. EPA, however, is not required to formally respond to comments except during the formal comment period which occurs after a Proposed Remedial Action Plan is issued.

### **TASK 3 - SITE CHARACTERIZATION (RI/FS Guidance, Chapter 3)**

As part of the RI, the Respondent shall perform the activities described in this task, including the preparation of a Site Characterization Summary and a RI Report. The overall objective of Site Characterization is to describe areas of the Site that may pose a threat to human health or the environment. This objective is accomplished by first determining physiography, geology, and hydrology of the Site. Surface and subsurface pathways of migration shall also be defined. The Respondent shall identify the sources of contamination and define the nature, extent, and volume of the sources of contamination, including their physical and chemical constituents as well as their concentrations at incremental locations in the affected media. The Respondent shall also investigate the extent of migration of this contamination as well as its volume and any changes in its physical or chemical characteristics. This investigation will provide for a comprehensive understanding of the nature and extent of contamination at the Site. Using this information, contaminant fate and transport shall be determined and projected.

During this phase of the RI/FS, the Work Plan, SAP, and Health and Safety Plan shall be implemented. Field data shall be collected and analyzed to provide the information required to accomplish the objectives of the study. The Respondent shall notify EPA at least two weeks in advance of the field work regarding the planned dates for field activities, including installation of monitoring wells, installation and calibration of equipment, pump tests, field lay out of any sampling grid, excavation, sampling and analysis activities, and other field investigation activities. The Respondent shall demonstrate that the laboratory and type of laboratory analyses that will be utilized during Site Characterization meets the specific QA/QC requirements and the DQOs as specified in the SAP. In view of the unknown conditions at the Site, activities are often iterative and, to satisfy the objectives of the RI/FS, it may be

necessary for the Respondent to supplement the work specified in the initial Work Plan. In addition to the deliverables below, the Respondents shall provide a monthly progress report (the frequency of these reports may be altered, upon the prior written consent of EPA), and participate in meetings with EPA at major points in the RI/FS.

a. Field Investigation (3.2)

The field investigation includes the gathering of data to define physical characteristics, sources of contamination, and the nature and extent of contamination at the Site. These activities shall be performed by the Respondent in accordance with the Work Plan and SAP. At a minimum, this investigation shall include the following activities:

Implementing and Documenting Field Support Activities  
(3.2.1)

The Respondent shall initiate field support activities following approval of the Work Plan and SAP. Field support activities may include obtaining access to the Site, property surveys, scheduling, and procuring equipment, office space, laboratory services, utility services and/or contractors. The Respondent shall notify EPA at least two weeks prior to initiating field support activities so that EPA may adequately schedule oversight tasks. The Respondent shall also notify EPA in writing upon completion of field support activities.

Investigating and Defining Site Physical and Biological Characteristics (3.2.2)

The Respondent shall collect data on the physical and biological characteristics of the Site and its surrounding areas including the physiography, geology, and hydrology, and specific physical characteristics identified in the Work Plan. This information shall be ascertained through a combination of physical measurements, observations, and sampling efforts and shall be utilized to define potential transport pathways and receptor populations. In defining the physical characteristics of the Site, the Respondent shall also obtain sufficient engineering data (such as pumping characteristics, soil particle size, permeability, etc.) for the projection of contaminant fate and transport and the development and screening of Remedial Action Alternatives, including information necessary to evaluate treatment technologies.

Defining Sources of Contamination (3.2.3)

The Respondent shall locate each source of contamination. For each location, the lateral and vertical extent of contamination shall be determined by sampling at incremental depths on a sampling grid or in another organized fashion approved by EPA.

The physical characteristics and chemical constituents and their concentrations shall be determined for all known and discovered sources of contamination. The Respondent shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QA/QC plan and DQOs. Both on-site and off-site sources of contamination shall be analyzed for the potential of contaminant release (e.g., long term leaching from soil into groundwater, runoff into nearby surface water pathways, airborne transport to on- and off-site locations), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information necessary to evaluate treatment technologies.

Describing the Nature and Extent of Contamination (3.2.4)

The Respondent shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondent shall utilize the information on Site physical characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The Respondent shall then implement an iterative monitoring program and any study program identified in the Work Plan or SAP such that, by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the Site can be determined. In addition, the Respondent shall gather data for calculations of contaminant fate and transport. This process is continued until the lateral and vertical extent of contamination has been determined to the contaminant concentrations consistent with the established DQOs set forth in the QAAP. EPA shall use the information on the nature and extent of contamination to determine the level of risk presented by the Site. The Respondent shall use this information to help to determine aspects of the appropriate Remedial Action Alternatives to be evaluated.

b. Data Analyses (3.4)

Evaluate Site Characteristics (3.4.1)

The Respondent shall analyze and evaluate the data to describe: (1) physical and biological characteristics of the Site; (2) contaminant source characteristics; (3) nature and extent of contamination; and (4) contaminant fate and transport. The information on physical and biological characteristics, source characteristics, and nature and extent of contamination shall be used in the analysis of contaminant fate and transport.

The evaluation shall include the actual and potential magnitude of releases from the sources and lateral and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to EPA in a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA together with a sensitivity analysis. All models shall be approved by EPA prior to their use. (see Guidance for Data Useability in Risk Assessment, U.S. EPA, Office of Emergency and Remedial Response, October 1990, OSWER Directive No. 9285.7-05). Also, this evaluation shall provide any information relevant to characteristics of the Site necessary for evaluation of the need for remedial action in the Baseline Risk Assessment, the development and evaluation of Remedial Action Alternatives, and the refinement and identification of ARARs. Analyses of data collected for Site Characterization shall meet the DQOs developed in the QAPP.

c. Data Management Procedures (3.5)

The Respondent shall consistently document the quality and validity of field and laboratory data compiled during the RI. At a minimum, this documentation shall include the following activities:

Documenting Field Activities (3.5.1)

Information gathered during characterization of the Site shall be consistently documented and adequately recorded by the Respondent in well maintained field logs and laboratory reports. The method(s) of documentation must be specified in the Work Plan and/or the SAP. Field logs must be utilized to document observations, calibrations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity

events, corrective measures, and/or data deficiencies. Supporting documentation described as the "CLP Data Package" must be provided with the sample analysis for all samples split or duplicated with EPA.

Maintaining Sample Management and Tracking (3.5.2; 3.5.3)

The Respondent shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the development and evaluation of the Baseline Risk Assessment and Remedial Action Alternatives. Analytical results developed under the Work Plan shall not be included in any characterization reports for the Site unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the Respondent shall establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.

d. Site Characterization Deliverables (3.7)

The Respondent shall prepare the Preliminary Site Characterization Summary and the Remedial Investigation Report.

Preliminary Site Characterization Summary (3.7.2)

After completing field sampling and analysis, the Respondent shall prepare a concise Site Characterization Summary. This summary shall review the investigative activities that have taken place and describe and display data for the Site documenting the location and characteristics of surface and subsurface features and contamination at the Site including the affected medium, location, types, physical state, and quantity and concentrations of contaminants. In addition, the location, dimensions, physical condition, and varying concentrations of each contaminant throughout each source and the extent of contaminant migration through each of the affected media shall be documented. The Site Characterization Summary shall provide EPA with a preliminary reference for remediation goals, evaluating the development and screening of Remedial Action Alternatives, and the refinement and identification of ARARs.

Remedial Investigation (RI) Report (3.7.3)

The Respondent shall prepare and submit a Draft RI Report to EPA for review and approval. This report shall summarize results of field activities to characterize the Site, sources of contamination, nature and extent of contamination, and the fate and transport of contaminants. The Respondent shall refer to the RI/FS Guidance for an

outline of the report format and contents. Following comment by EPA, the Respondents shall prepare a Final RI Report which satisfactorily addresses EPA's comments.

#### **TASK 4 - TREATABILITY STUDIES (RI/FS Guidance, Chapter 5)**

Treatability Studies shall be performed by the Respondent to assist in the detailed analysis of alternatives, in the event that EPA determines that these studies are necessary. If applicable, study results and operating conditions will later be used in the detailed design of the selected remedial technology. The following activities shall be performed by the Respondent.

a. Determination of Candidate Technologies and the Need for Treatability Studies (5.2; 5.4)

The Respondent shall identify in a technical memorandum, subject to EPA review and comment, candidate technologies for a Treatability Studies program during project planning (Task 1). The listing of candidate technologies shall cover the range of technologies required for alternatives analysis (Task 5a). The specific data requirements for the Treatability Studies program shall be determined and refined during Site Characterization and the development and screening of Remedial Action Alternatives (Tasks 3 and 4, respectively).

Conduct Literature Survey and Determine the Need for Treatability Studies (5.2)

The Respondent shall conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. If practical candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for the Site on the basis of available information, Treatability Studies shall be conducted. EPA shall determine whether Treatability Studies will be required.

Evaluate Treatability Studies (5.4)

Where EPA has determined that Treatability Studies are required, the Respondent and EPA shall decide on the type of Treatability Studies to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as to perform testing for various operating conditions, the decision to perform pilot testing shall be made as early in the process as possible to minimize potential delays of the FS. To assure that a Treatability Study program is completed on time, and



with accurate results, the Respondent shall either submit a separate Treatability Study Work Plan or an amendment to the original RI/FS Work Plan for EPA review and approval.

b. Treatability Study Deliverables (5.5; 5.6; 5.8)

In addition to the memorandum identifying candidate technologies, the deliverables that are required when Treatability Studies are to be conducted include a Treatability Study Work Plan, a Treatability Study Sampling and Analysis Plan, and a Final Treatability Study Evaluation Report. EPA may also require a Treatability Study Health and Safety Plan, where appropriate.

Treatability Study Work Plan (5.5)

The Respondent shall prepare a Treatability Study Work Plan or amendment to the original RI/FS Work Plan for EPA review and approval. This Plan shall describe the background of the Site, remedial technologies to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The DQOs for Treatability Studies shall be documented as well. If pilot-scale Treatability Studies are to be performed, the Treatability Study Work Plan shall describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, and operating conditions to be tested. If testing is to be performed off-site, permitting requirements must be addressed.

Treatability Study Sampling and Analysis Plan (5.5)

If the original QAPP or FSAP is not adequate for defining the activities to be performed during the Treatability Studies, a separate Treatability Study SAP or amendment to the original RI/FS SAP shall be prepared by the Respondent for EPA review and approval.

It shall be designed to monitor pilot plant performance. Task 1c of this Scope of Work provides additional information on the requirements of the SAP.

Treatability Study Health and Safety Plan (5.5)

If the original RI/FS Health and Safety Plan is not adequate for defining the activities to be performed during the Treatability Studies, a separate or amended Health and Safety Plan shall be developed by the Respondent. Task 1c of this Scope of Work provides additional information on the

requirements of the Health and Safety Plan. EPA does not "approve" the Treatability Study Health and Safety Plan.

Treatability Study Evaluation Report (5.6)

Following completion of Treatability Studies, the Respondent shall analyze and interpret the testing results in a technical report to EPA. Depending on the sequence of activities, this report may be a part of the RI/FS Report or a separate deliverable. The report shall evaluate each technology's effectiveness, implementability, cost, and actual results as compared with predicted results. The report shall also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

**TASK 5 - DEVELOPMENT AND SCREENING OF REMEDIAL ACTION ALTERNATIVES (RI/FS Guidance, Chapter 4)**

The development and screening of Remedial Action Alternatives is performed to select an appropriate range of waste management options to be evaluated. This range of options shall include, at a minimum, alternatives in which treatment is used to reduce the toxicity, mobility, or volume of the waste, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; alternatives that involve containment and treatment components; alternatives that involve containment with little or no treatment; and a no-action alternative. The following activities shall be performed by the Respondent as a function of the development and screening of Remedial Action Alternatives.

a. Development and Screening of Remedial Action Alternatives (4.2)

The Respondent shall begin to develop and evaluate, concurrent with the RI Site Characterization task, a range of appropriate waste management options that, at a minimum, ensure protection of human health and the environment and comply with all ARARs.

Refine and Document Remedial Action Objectives (4.2.1)

The Respondent shall review and, if necessary, propose refinement to the Site Objectives and preliminary remedial action objectives that were established during the Scoping phase (Task 1). Any revised Site Objectives or revised remedial action objectives shall be documented in a technical memorandum as discussed in Task 1b. These objectives shall specify the contaminants and media of interest, exposure pathways and receptors, and an acceptable

contaminant level or range of levels (at particular locations for each exposure route).

Develop General Response Actions (4.2.2)

The Respondent shall develop general response actions for each medium of interest: defining containment, treatment, excavation, pumping, or other actions, individually or in combination, to satisfy the remedial action objectives.

Identify Areas and Volumes of Media (4.2.3)

The Respondent shall identify areas and volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the Site and the Baseline Risk Assessment and remediation goals shall also be taken into account.

Identify, Screen, and Document Remedial Technologies (4.2.4; 4.2.5)

The Respondent shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the Site. "Technologies" shall mean the methods by which hazardous substances at the Site shall be remedied: e.g., "pump and treat," "soil excavation and removal," etc. General response actions shall be refined to specify remedial technology types. Technology process options for each of the technology types shall be identified either concurrent with the identification of technology types or following the screening of the considered technology types.

Process options shall be evaluated on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. The technology types and process options shall be summarized for inclusion in a technical memorandum. The reasons for eliminating alternatives must be specified.

Assemble and Document Alternatives (4.2.6)

The Respondent shall assemble selected representative technologies into alternatives for each affected medium or operable unit. Together, all of the alternatives shall represent a range of treatment and containment combinations that shall address either the Site or the operable unit as a whole. A summary of the assembled alternatives and their related action-specific ARARs shall be prepared by the

Respondent for inclusion in a technical memorandum. The reasons for eliminating alternatives during the preliminary screening process must be specified.

#### Refine Alternatives

Upon completion of the above-referenced subtasks under this task, the Respondent shall refine the Remedial Action Alternatives to identify contaminant volumes to be addressed by the proposed process and sizing of critical unit operations as necessary. Sufficient information shall be collected for an adequate comparison of alternatives. Remedial action objectives for each medium shall also be refined as necessary to incorporate any new risk assessment information presented in EPA's Baseline Risk Assessment Report. Additionally, action-specific ARARs shall be updated as the Remedial Action Alternatives are refined.

#### Conduct and Document Screening Evaluation of Each Alternative (4.3)

The Respondent may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Note that the evaluation of effectiveness involves evaluating the long-term and short-term risks - among other factors - associated with a remedial alternative. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives shall be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis.

As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable. The Respondent shall prepare a technical memorandum summarizing the results and reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening.

#### b. Alternatives Development and Screening Deliverables (4.5)

The Respondent shall prepare a technical memorandum summarizing the work performed and the results of each task above, including an alternatives array summary. This alternatives array shall be modified by the Respondent when conducting Task 6 if required by EPA's comments to assure identification of a complete and

appropriate range of viable alternatives to be considered in the detailed analysis. This deliverable shall document the methods, rationale, and results of the alternatives screening process.

**TASK 6 - DETAILED ANALYSIS OF REMEDIAL ACTION ALTERNATIVES (RI/FS Guidance, Chapter 6)**

The detailed analysis shall be conducted by the Respondent to provide EPA with the information needed to allow for the selection of a remedy for the Site.

a. Detailed Analysis of Alternatives (6.2)

The Respondent shall conduct a detailed analysis of remaining alternatives. This analysis shall consist of an assessment of each option against a set of nine evaluation criteria and a comparative review of all options using the same nine evaluation criteria as a basis for comparison.

Apply Nine Criteria and Document Analysis (6.2.1 - 6.2.4)

The Respondent shall apply nine evaluation criteria to the assembled Remedial Action Alternatives to ensure that the selected Remedial Action Alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element.

The evaluation criteria include: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State acceptance; and (9) community acceptance. Criteria 8 and 9 are considered after the RI/FS Report has been released to the general public. For each alternative, the Respondents shall provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative; and (2) a discussion of the individual criterion assessment. Since the Respondent does not have direct input on criteria (8) State acceptance and (9) community acceptance, these two criteria will be addressed by EPA after completion of the Draft FS Report.

Compare Alternatives Against Each Other and Document the Comparison of Alternatives (6.2.5; 6.2.6)

The Respondent shall perform a comparative analysis among the Remedial Action Alternatives. That is, each alternative shall be compared against the others using the nine evaluation criteria as a basis of comparison. No alternative shall be identified by the Respondent as the preferred alternative in the Feasibility Study. Identification and selection of the preferred alternative is conducted by EPA.

b. Detailed Analysis Deliverables (6.5)

The Respondent shall prepare a Draft FS Report for EPA review and comment. This report, as ultimately adopted or amended by EPA, provides a basis for remedy selection by EPA and documents the development and analysis of Remedial Action Alternatives. The Respondent shall refer to the RI/FS Guidance for an outline of the report format and the required report content. The Respondent shall prepare a Final FS Report which satisfactorily addresses EPA's comments. Once EPA's comments have been addressed by the Respondent to EPA's satisfaction and EPA approval has been obtained or an amendment has been furnished by EPA, the Final FS Report may be bound with the Final RI Report.

ATTACHMENT A  
REFERENCES

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process:

1. The National Oil and Hazardous Substances Pollution Contingency Plan, March 8, 1990.
2. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final" U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01.
3. "Interim Guidance on Potentially Responsible Party Participation in Remedial Investigation and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.
4. "Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, OSWER Directive No. 9835.3.
5. "A Compendium of Superfund Field Operations Methods," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. "EPA NEIC Policies and Procedures Manual," May 1978, revised November 1984, EPA-330/9-78-001-R.
7. "Data Quality Objectives for Remedial Response Activities," U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
8. "Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
9. "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
10. "Users Guide to the EPA Contract Laboratory Program," U.S. EPA, Sample Management Office, December 1986.



11. "Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements," U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
12. "CERCLA Compliance with Other Laws Manual," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (Draft), OSWER Directive No. 9234.1-01 and -02.
13. "Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," U.S. EPA, Office of Emergency and Remedial Response, (Draft), OSWER Directive No. 9283.1-2.
14. "Draft Guidance on Preparing Superfund Decision Documents," U.S. EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.3-02
15. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part A," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002A, December 1989, OSWER Directive No. 9285.7-01a.
16. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part B," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002B, OSWER Directive No. 9285.7-01b.
17. "Interim Final Risk Assessment Guidance for Superfund - Volume I - Human Health Evaluation Manual, Part C," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/002C, OSWER Directive No. 9285.7-01c.
18. "Interim Final Risk Assessment Guidance for Superfund - Volume II - Environmental Evaluation Manual," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-89/001, March 1989, OSWER Directive No. 9285.7-01.
19. "Superfund Exposure Assessment Manual," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/1-88/001, April 1988, OSWER Directive No. 9285.5-1.
20. "Guidance for Data Useability in Risk Assessment," U.S. EPA, Office of Emergency and Remedial Response, EPA/540/G-90/008, October 1990, OSWER Directive No. 9285.7-05.
21. "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," April 22, 1991, OSWER Directive No. 9355.0-30.

22. "Health and Safety Requirements of Employees Employed in Field Activities," U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.
23. OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).
24. "Interim Guidance on Administrative Records for Selection of CERCLA Response Actions," U.S. EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.
25. "Community Relations in Superfund: A Handbook," U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0-3B.
26. "Community Relations During Enforcement Activities And Development of the Administrative Record," U.S. EPA, Office of Waste Programs Enforcement, November 1988, OSWER Directive No. 9836.0-1A.
27. "Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual", U.S. EPA Region IV, Environmental Services Division, February 1, 1991 (revised periodically).
28. "USEPA Contract Laboratory Program Statement of Work for Organics Analysis", U.S. EPA, Office of Emergency and Remedial Response, February 1988.
29. "USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis", U.S. EPA, Office of Emergency and Remedial Response, July 1988.

ATTACHMENT B

SUMMARY OF THE MAJOR DELIVERABLES FOR THE  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT  
THE SOUTHERN WOOD PIEDMONT SITE

<u>TASK</u>	<u>DELIVERABLE</u>	<u>EPA RESPONSE</u>
TASK 1	SCOPING	
	- RI/FS Work Plan	Review and Approve
	- Field Sampling and Analysis Plan	Review and Approve
	- Quality Assurance Project Plan	Review and Approve
	- Site Health and Safety Plan	Review and Comment
TASK 3	SITE CHARACTERIZATION	
	- Technical Memorandum on Contaminant Fate and Transport Modeling (where appropriate)	Review and Approve
	- Preliminary Site Characterization Summary	Review and Comment
	- Remedial Investigation (RI) Report	Review and Approve
TASK 4	TREATABILITY STUDIES (if necessary)	
	- Technical Memorandum Identifying Candidate Technologies	Review and Comment
	- Treatability Study Work Plan (or amendment to original Work Plan)	Review and Approve
	- Treatability Study SAP (or amendment to original SAP)	Review and Approve

- Treatability Study Evaluation Report                      Review and Approve

TASK 5      DEVELOPMENT AND SCREENING OF REMEDIAL ACTION ALTERNATIVES

- Technical Memorandum Documenting Revised Remedial Action Objectives                      Review and Approve
- Technical Memorandum on Remedial Technologies, Alternatives, and Screening                      Review and Comment

TASK 6      DETAILED ANALYSIS OF REMEDIAL ACTION ALTERNATIVES

- Feasibility Study (FS) Report                      Review and Approve

Note: EPA shall provide the Respondent with a mailing list for each deliverable document required by this SOW. Respondent shall be responsible for providing the specified number of copies to each address on the mailing list. At a minimum, Respondent shall provide EPA's Project Coordinator with two copies of each deliverable, one bound, one unbound.

ATTACHMENT C

GENERAL SCHEDULE FOR THE MAJOR  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
ACTIVITIES AT THE SOUTHERN WOOD PIEDMONT SITE

Major milestones for this RI/FS are as follows:

<u>Milestone</u>	<u>Time Pathway</u>
Effective Date of AOC	A
EPA Approves RI/FS Workplan	B
EPA Initiates Baseline Risk Assessment	C
EPA Approves Baseline Risk Assessment	C7, B5
EPA Approves RI Report	D
EPA Approves FS and TS	E

SCHEDULE

<u>Activity</u>	<u>Days After Milestone</u>
Effective Date of AOC	A
Notify EPA of Selected Contractor	A + 30 (A1)
EPA Approves Contractor	A + 45 (A2)
Submit Draft RI/FS Workplan	A + 75 (A3)
<u>EPA Review</u>	
EPA Approval of RI/FS Workplan	B
Final RI/FS Workplan Submittal	B + 15 (B1)
Initiate Field Activities	B + 30 (B2)
Complete Field Activities	B + 120 (B3)
Submit Site Characterization Report to EPA	B + 150 (B4)
Preparation of Baseline RA by EPA (See below for Schedule)	
EPA Approval of Baseline Risk Assessment	B + 240 (B5)
Submit Draft RI Report	B + 300 (B7)
<u>EPA Review</u>	
EPA Approves RI Report	D
Final RI Submitted	D + 15 (D1)
Draft FS and Treatability Study Submitted	D + 75 (D2)

EPA Review

EPA Approves FS Report	E	
Final FS Report Submitted	E + 15	(E1)
Final Treatability Report Submitted	E + 30	(E2)

ATTACHMENT C continued

SUBSIDIARY SCHEDULE

1. Treatability Study (TS)

<u>Activity</u>	<u>Days After Milestone</u>	
Submit TS Workplan	B + 240	(B5)
EPA Review		
EPA Approves TS Workplan	B + 270	(B6)
Draft TS Report Submitted	D + 75	(D2)
EPA Review		
EPA Approves TS Report	E	
Final TS Report Submitted	E + 30	(E2)

Note: Other deliverables listed in Attachment B shall also be incorporated into the schedule to be submitted as part of the RI/FS Work Plan. The above schedule may be revised by mutual agreement of the parties to accomplish the goals set out in the SCAM Model; however any lack of agreement regarding schedule revisions shall not be subject to the Dispute Resolution procedures set forth in Section XIV of the Consent Order.

February 22, 1996

TO: File

FROM: Pat DeRosa, CERCLA Branch Head *PD*  
NC Superfund Section

RE: Southern Wood Piedmont  
NCD 058 517 467  
Wilmington, New Hanover County, NC

I spoke by telephone today with Bernie Hayes, US EPA Remedial Project Manager for the subject site (404) 347-7791, ext. 2048. I suggested that he copy the City of Wilmington and the State Ports Authority on site correspondence to ensure that they were aware of site activities. He said he would send them a copy of his February 16, 1996 letter to Chuck Davis, Southern Wood Piedmont and would also be sending them notification letters.

cc: Jack Butler  
Grover Nicholson





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

RECEIVED

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

JUN 06 1995

SUPERFUND SECTION

May 31, 1995

4WD-NSRB

Ms. Pat DeRosa, Chief  
CERCLA Branch  
NC Dept. of Environment, Health, and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27867  
Raleigh, North Carolina 27611-7687

SUBJ: Southern Wood Piedmont Site  
Wilmington, New Hanover County, North Carolina

Dear Ms. DeRosa:

Thank you for taking the time to attend the meeting last Wednesday, May 24, 1995, regarding the Southern Wood Piedmont site located in Wilmington, North Carolina. The meeting was very useful in bringing together all parties that may be interested in the investigation and remediation of the site, and in clarifying site conditions for those, like myself, who were not as familiar with site conditions as others might have been.

In the afternoon of that day (5/24) Rolando Bascumbe and myself conducted a site visit in the company of Greg Kuntz of ViroGroup, Inc. The site is readily accessible by automobile, and by walking short distances it is easy to reach the drainage ditches and creeks, including Greenfield Creek, that drain the site. The following observations were made that may be of interest to NCDEHNR with respect to Site assessment activities:

1. There were obvious signs of human activity along the banks of Greenfield Creek, including soft drink and beer cans and bottles, discarded bags of snacks, and other waste. Greenfield Creek is easily accessible either by the entrance we used (around the locked gate) or by means of a railroad right-of-way that crosses the creek at the southeast corner of the site.
2. At the confluence of the north-south drainage ditch from the site and Greenfield Creek, we observed a number of game fish of a size that would be retained if caught by recreational fishermen. Specifically, we observed several bass approximately three to six pounds in size.
3. Along Greenfield Creek, about 400 yards upstream from its confluence with the Cape Fear River, we observed a crab trap

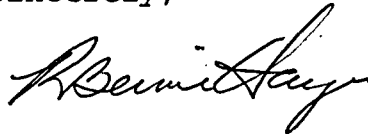
tied to the limb of a tree along the south bank of the creek. The crab trap was fully exposed to view since the tide was at or near low tide. Crabs were abundant along the banks of the creek.

Although we did not directly observe the presence of any alligators on this visit, Kuntz remarked that he had seen evidence of alligators in Greenfield Creek during field activities on previous occasions. At the mouth of Greenfield Creek, at its confluence with the Cape Fear River, however, a pair of tidal gates have been recently installed. Their presence might make it difficult for alligators to ascend Greenfield Creek, even at high tide.

To summarize, our site visit revealed that the site is relatively accessible to recreational fishermen and casual trespassers, and that persons had recently been on site. Greenfield Creek contains game fish that would be sought by sport fishermen, and fisheries activities were evidenced by the presence of a crab trap in Greenfield Creek.

Thank you again for your participation in the meeting. If you have any questions regarding the above information, please contact me at (404) 347-7791, extension 2048.

Sincerely,



Rutherford B. Hayes  
Remedial Project Manager  
North Superfund Remedial Branch

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

TO: NC

Site Name: Southern Wood Products Co.

EPA ID#: NC0 058 517 467

Alias Site Names: \_\_\_\_\_

Union

County or Parish: New Hanover

State: NC

Report Dated: 31 Jan 95

Report type: SIP

Report developed by: NC DENWR

RECEIVED  
APR 27 1995  
SUPERFUND SECTION

DECISION:

1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

1a. Site does not qualify for further remedial site assessment under CERCLA  
(No Further Remedial Action Planned - NFRAP)

1b. Site may qualify for further action, but is deferred to: RCRA | NRC

2. Further Assessment Needed Under CERCLA: 2a. (optional) Priority:  Higher | Lower

2b. Activity Type: PA | SI |  ESI |  HRS evaluation

Other: Possible RI/FS with PRP lead

DISCUSSION/RATIONALE:

The old Wood Treatment facility, serves using the Surface Water - Pathway, along Creek & drainage ditch run through the site which are used as fisheries. IF PRP is initiated this would be a good early action site. Needs additional sampling before NRS.

Report Reviewed and Approved by: John A. McK...

Signature: [Signature]

Date: 4/17/95

Site Decision Made by: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

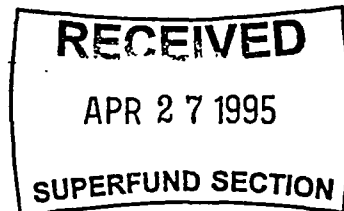


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

APR 20 1995



4WD-WPB

Ms. Pat DeRosa, Head  
CERCLA Branch  
North Carolina Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687  
Raleigh, North Carolina 27611-7687

Dear Ms. DeRosa:

The following reports have recently been reviewed and accepted by EPA - Region IV Site Assessment Section:

Preliminary Assessments

Crestline Contaminated Wells                      Further Action (FA)  
Moore County  
NCD 986 172 492

Zoe Labs    No Further Action  
Haywood County    Planned (NFRAP)  
NCD 986 231 520

Site Inspections

Edward A. Weck    NFRAP  
Durham County  
NCD 001 493 931

Reasor Chemical Company                              FA  
New Hanover County  
NCD 986 187 094

Site Inspection Prioritizations (SIPs)

Amore Chemical    NFRAP  
Durham County  
NCD 075 582 197



Century Furniture Company  
Catawaba County  
NCD 003 221 868

NFRAP

Hoover Machine Shop  
Gaston County  
NCD 054 283 189

NFRAP

SCM Corporation-Glidden  
Mecklenburg County  
NCD 093 338 119

NFRAP

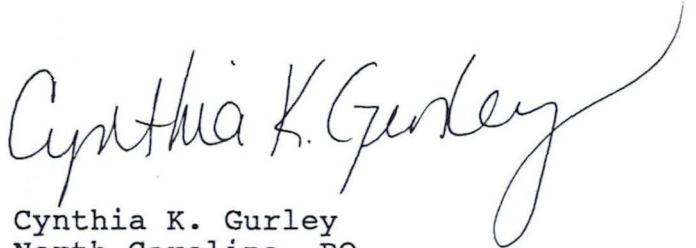
Southern Wood Piedmont  
New Hanover County  
NCD 058 517 467

FA

Enclosed please find the Remedial Site Assessment Decision Forms for each report generated by the North Carolina Superfund program and a copy of the actual report generated by the EPA Contractor.

If you have any questions concerning these site decisions, please call me at (404) 347-5059, Extension 6150.

Sincerely,




Cynthia K. Gurley  
North Carolina, PO

Enclosures

bcc: Earl Bozeman  
John McKeown

April 7, 1995

TO: File

FROM: Pat DeRosa, CERCLA Branch Head   
NC Superfund Section

RE: Southern Wood Piedmont- Wilmington  
NCD 058 517 467  
Wilmington, New Hanover, NC

I spoke by telephone today with Rick Shiver, DEM Regional Supervisor, Wilmington Regional Office (910) 395-3900 regarding DEM activity at the subject site. He indicated that there was no DEM activity or DEM involvement in PRP activity at the subject site.

cc: Stuart Parker

SUPERFUND SECTION  
COMMUNICATIONS RECORD FORM

Date: 2 / 16 / 95

Call:          Placed           
         Returned           
X Received         

Time: 14 10 --          AM X PM

Project: SOUTHERN WOOD PIEDMONT

ID: NCD 058517 467

Location: WILMINGTON NC

County: NEW HANOVER

Person Contacted: DENNIS MYERS Telephone:         

Affiliation: STATE ATTY GENERAL'S OFFICE

Communications Summary: Myers called to inquire as to status  
of SWP site w/ EPA. SFP explained that site was being  
recommended for ESI UNDER CERCLA, but that EPA has not  
completed review of the report. Myers explained that State  
Ports Authority wants to buy the wilmingtn portion of the site  
but doesnt want to incur liability if additional action  
required, - ~~they~~ ~~are~~ IF SWP goes belly up, <sup>SPA</sup> ~~they~~ would hold  
the entire liability for <sup>entire</sup> site. SFP explained that unresolved  
issues are

- ① possible Dioxin in landfill, other soils?
- ② permanent pollution in onsite soils?
- ③ surface water pathway contamination - <sup>FISHERY + ?</sup> ENVIRONMENT.

Myers said he would advise ~~the~~ SPA about that ~~site~~ <sup>site</sup> not yet resolved from EPA's consideration.

Signature: *D Myers*



State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



February 3, 1995

MEMORANDUM

TO: Pat DeRosa, Head  
CERCLA Branch

FROM: Doug Holyfield, Head  
Waste Management Branch

RE: Southern Wood Piedmont - Wilmington, North Carolina  
Administrative Order on Consent - NCD058517467

In discussions this week with Mr. Stuart Parker of your staff, he indicated that the CERCLA Branch will be conducting further investigations of the noted site, especially with respect to potential migration of contaminants to surface waters. As you are aware, this office has been coordinating the on-going surficial remediation of the site to effect closure of the RCRA operating facility under an existing AOC established in May 1985. This remediation primarily involved ceasing of operations and treating visually contaminated soils in the Superfund Area I, Track area, Oil treating areas, Large storage tank area, Treated pole storage area, and CCA storage area.

In SWP's presentation of September 14, 1992, they indicated that they had complied with the overall provisions of the AOC, which included weekly tilling of the landfarm, sampling of monitoring wells and the Cape Fear River. At that meeting, SWP was asked to submit a "completion report" specific to closing out our AOC. Subsequent to that meeting, SWP provided the completion report (1-3-94), which had been subject to review and negotiations with the City of Wilmington and the N.C. Ports Authority since June of 1993. That report also contained a risk assessment of the landfarm and a proposed scope of work (primarily ground water monitoring to evaluate the southern boundary of the property). The information provided in the risk assessment was transmitted to Dr. Luanne Williams in January of 1994 to determine if the residual levels in the landfarm were "protective of human health and the environment" as required in the AOC. Her response indicated that existing levels were not acceptable utilizing potential future

"residential use", however, if SWP in coordination with the City of Wilmington and the N.C. Ports Authority can provide exact future use of the property, such as low intensity industrial, then either alternate concentrations or existing levels with cover, such as that provided by soils or concrete whereby no exposures are possible, could be acceptable. My last contact with SWP was through Geraghty & Miller (Stan Atwood), who noted that the risk assessment was for the landfarm only and not the source areas. I noted that if they could provide formal notice that the City of Wilmington/N.C. State Ports intended to use the property for container storage, with cover, that we could note that the AOC has been substantially met, however, the remaining portions of the site including the source areas, pole storage, ground water assessment, etc., would remain with CERCLA. Mr. Atwood's letter of June 27, 1994 indicates such, however, no specific plans for cover were included or described.

In consideration of the above, we believe that SWP has met the primary objectives of the AOC for closing out the operational areas of the facility provided the intended future industrial use includes cover. However, the long term evaluation of disposal in the Superfund Unit(s) is beyond the scope of the RCRA program (and this AOC) and must remain within the purview of your office. In conclusion, we will formally notify SWP of our intent to dissolve the AOC provided the restrictions noted above are met and that any subsequent assessments be directed to your office's attention. Please let me know if we can be of any help in your evaluation, including field staff support if needed (Mr. Parker noted that the site no longer has full time security now that remedial activities have ceased).

cc: Mike Kelly  
Dan Bius  
Larry Perry  
Flint Worrell  
Bobby Nelms  
Judy Bullock

Site Name: Southern Wood Piedmont Wilmington  
Site Number: NCD 058 517 46

Site Location: Wilmington, New Hanover County, N.C.

Site Coordinates:

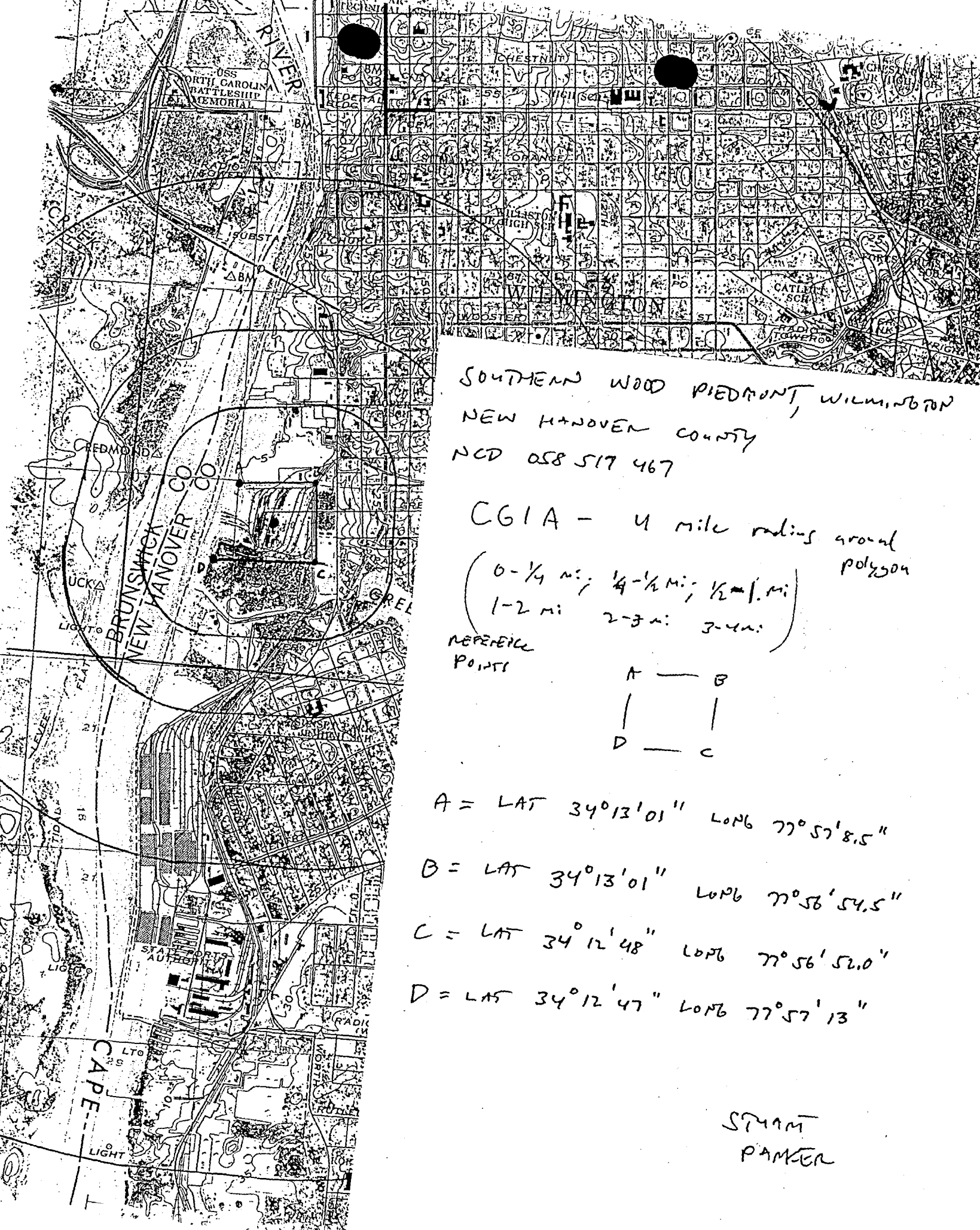
34 13 01.0	77 57 08.5
34 13 01.0	77 56 54.5
34 12 48.0	77 56 52.0
34 12 47.0	77 57 13.0

Date: October 05, 1994

Calculation Results

Distance from Site Location	Population		Number of Households	
	Per Ring	Cumulative	Per Ring	Cumulative
0 to 1/4 mile	527	527	260	260
>1/4 to 1/2 mile	828	1,355	447	707
>1/2 to 1 mile	7,206	8,561	3,445	4,152
>1 to 2 miles	16,147	24,708	7,857	12,009
>2 to 3 miles	12,212	36,920	5,545	17,554
>3 to 4 miles	14,994	51,914	6,592	24,146

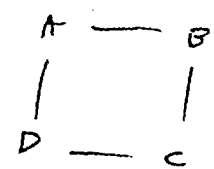
Note: The populations and number of households within specified target distance rings were calculated for the NC Superfund Section by the NC State Center for Geographic Information and Analysis using the 1990 US Census data. These values were calculated by summing the population and the number of households data for each census block located within each target ring. For census blocks lying only partially within the ring, the per cent area of the block within the ring was multiplied by the population and household densities of the block.



SOUTHERN WOOD PIEDMONT, WILMINGTON  
 NEW HANOVER COUNTY  
 NCD 058 517 467

CGIA - 1/4 mile radius ground polygon  
 ( 0-1/4 mi; 1/4-1/2 mi; 1/2-1 mi  
 1-2 mi 2-3 mi 3-4 mi )

REFERENCE POINTS



A = LAT 34°13'01" LONG 77°57'8.5"

B = LAT 34°13'01" LONG 77°56'54.5"

C = LAT 34°12'48" LONG 77°56'52.0"

D = LAT 34°12'47" LONG 77°57'13"

STUART  
 PARKER

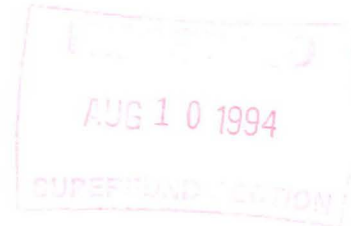




**ETE Division**  
**ViroGroup, Inc.**  
1445 Pisgah Church Road  
Lexington, SC 29072  
Phone 803-957-6270  
FAX 803-957-3845

August 8, 1994

Mr. Stuart F. Parker, Jr.  
Hydrogeologist  
North Carolina Department of Environment  
Health and Natural Resources  
Superfund Section  
Post Office Box 27687  
Raleigh, N.C. 27611-7687



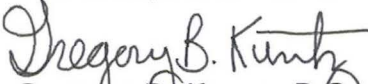
Re: Superfund Inspection and Potential Sampling  
Southern Wood Piedmont Facility  
Wilmington, North Carolina  
ViroGroup, Inc. Project #12-53016.00

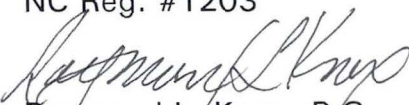
Dear Mr. Parker:

ViroGroup, Inc. - ETE Division and Southern Wood Piedmont (SWP) were pleased to meet and assist you during your site inspection at the Wilmington, North Carolina facility on August 2, 1994. As we discussed over the telephone on August 4, 1994, if samples are collected in the future, on behalf of SWP, ViroGroup, Inc. would like to split samples with the North Carolina Department of Environment, Health and Natural Resources.

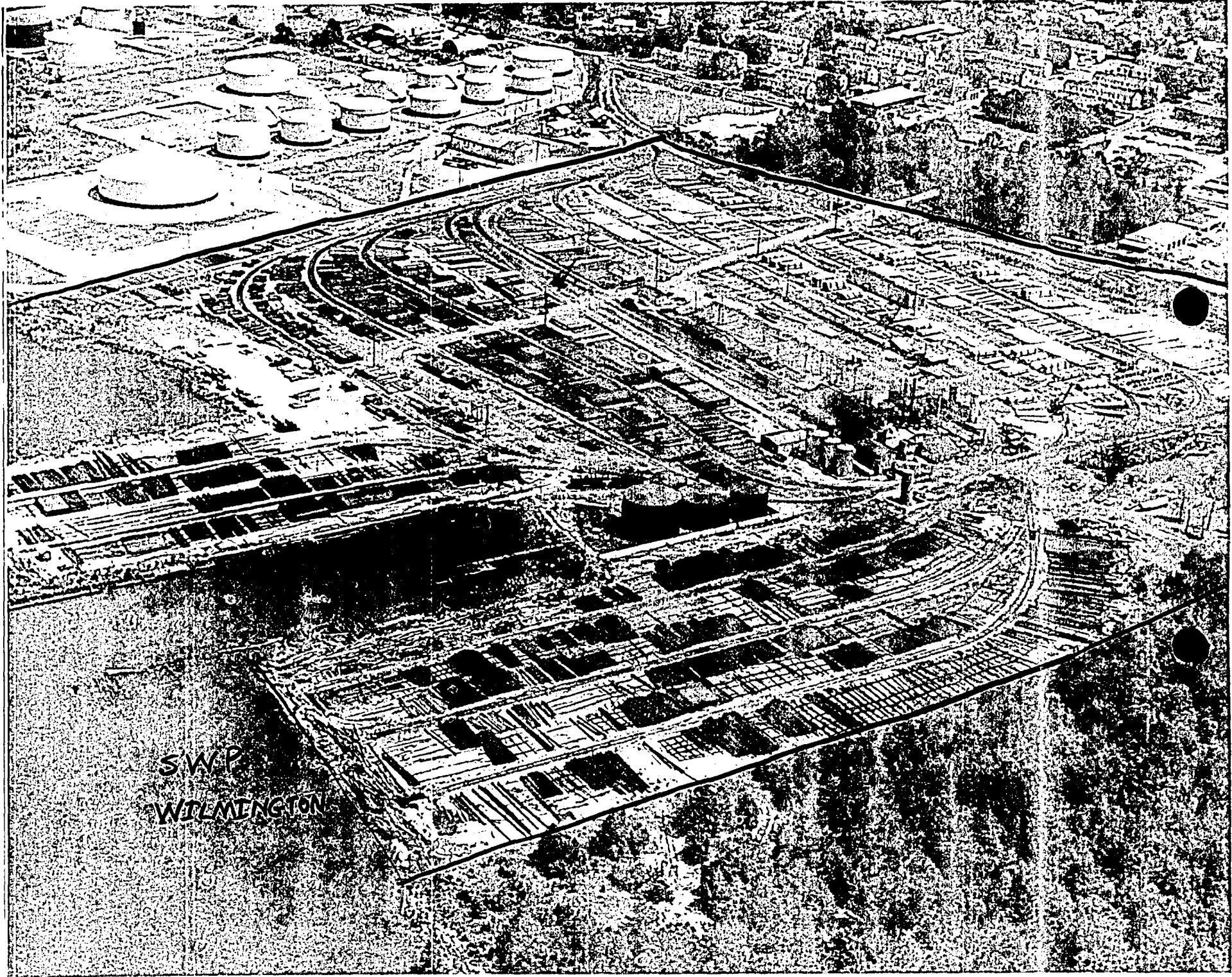
A large amount of data has been generated at this site. If ViroGroup or SWP can clarify any of the data or provide you with data that is not readily available in your files, please give us a call.

Sincerely,  
**ViroGroup, Inc. - ETE Division**

  
Gregory B. Kuntz, P.G.  
Hydrogeologist  
NC Reg. #1203

  
Raymond L. Knox, P.G.  
Senior Hydrogeologist

cc: T.M. Davis - SWP  
Pink Frady - ViroGroup



S.W.P.  
WILMINGTON

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

July 19, 1994



Mr. Thomas Stich  
Sanitarian Supervisor  
Environmental Health Division  
New Hanover County Health Department  
2029 S. 17th Street  
Wilmington, NC 28401

RE: Site Inspection Prioritization  
On-Site Reconnaissance  
Southern Wood Piedmont-Wilmington, NCD058517467  
Site Inspection On-Site Reconnaissance  
Reasor Chemical, NCD986187094

Dear Mr. Stich:

David Lilley of the NC Superfund Section left a message on your answering machine today to notify you that the NC Superfund Section will conduct site reconnaissances of the subject sites located in New Hanover County, North Carolina. The reconnaissances will be conducted on August 2 and 3, 1994 by Stuart Parker of the NC Superfund Section.

The purpose of the reconnaissances is to determine if the sites pose a hazard to public health or the environment because of releases of contaminants to soil, surface water, groundwater, or air. The reconnaissance team will locate all nearby water supplies (surface and groundwater, community and private) and any close sensitive environments, schools, and day care centers.

These reconnaissances are not an emergency situation but are a normal step in the evaluation of all uncontrolled and unregulated potential hazardous waste sites in North Carolina. You may want to have your representative meet the reconnaissance team at the sites. If so, please contact Stuart Parker at (919) 733-2801 and he will coordinate a meeting. I am enclosing background data on the sites for your information.

If the reconnaissances indicate the need for future study of the sites, we will contact your office to advise. If you have any questions, please don't hesitate to call David Lilley or me at (919) 733-2801.

Sincerely,

Pat DeRosa, Head  
CERCLA Branch  
Superfund Section

Enclosures

cc: Phil Prete  
Doug Holyfield  
Pat Williamson  
Kim Clarke  
David Lilley  
Donna Keith



Federal  
Trip Notification & Authorization

Prepared by: Stuart Parker

Today's Date: 7/19/94

\*Use Black Ink or Typewriter only-Staff to fill out first 2 blocks only.

Site Trip

Date of Trip: 8/2-3/94 \*

If trip date changed or cancelled note below:  
Trip Date Changed To: \_\_\_\_\_ Cancelled: \_\_\_\_\_

NCD#: 058517467 Site Name: Southern Wood Piedmont-Wilmington  
City: Wilmington County: New Hanover

Reason for Trip: Site Inspection Prioritization On-Site Reconnaissance

Name of Hotel (Overnight Trip): \_\_\_\_\_ Hotel Telephone Number: ( ) \_\_\_\_\_

Authorized by: David Bally  
Industrial Hygienist

Project Team Leader: Stuart Parker

Assistants: Doug Mumford, \_\_\_\_\_, \_\_\_\_\_

Attach To Notification Form: 1 copy each: Preliminary Assessment Form (First page only)  
Submit to the Industrial Hygienist Site Map  
PA Transmittal Letter

(Please list appropriate County Health Department contact person to call to advise of trip)  
Environmental Supervisor or Health Director to call: Mr. Tom Stich Title: Sanitarian Supervisor  
(Note if Dr., M.P., etc.)  
Telephone Number: (910)343-6666

Notes: Health Department Official Contacted: Tom Stich's ans. machine  
Back Up Letter Required: Yes  No   
Left message on answering machine on  
7-19-94 (DBL)

Note: Signed original to Data Manager

\* Combined w/ SI Recon. Reason Chemical

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

March 17, 1994

Mr. T.M. Davis, Manager  
Environmental Affairs  
Southern Wood Piedmont  
P.O. Box 5447  
Spartanburg, South Carolina 29304

RE: Southern Wood Piedmont - Wilmington, North Carolina  
Administrative Order on Consent - NCD058517467

Dear Mr. Davis:

This office has reviewed the Risk Assessment Report for the Landfarm areas at the noted facility. The purpose of this report was to summarize remedial activities at the site within the requirements stipulated to in the 1985 Consent Agreement. This consent agreement was designed to close out the surficial, operational part of the site as well as remediating part of the Superfund areas by land applying contaminated soils in an on-site landfarm. Southern Wood Piedmont was to continue landfarming activities until residual concentrations are determined not to have a significant impact on the public health and the environment as determined by the State. Consequently, this office transmitted a copy of this Risk Assessment Report to the Environmental Epidemiology Section for their review to determine if these residual levels are "Protective of Human Health and the Environment".

A copy of Dr. Luanne Williams' report, dated February 17, 1994 is attached. In review of her report, she has considered that all future uses of the property, including residential must be considered when evaluating the risk from exposure. Therefore, her acceptable remediation levels are considerably lower than the residual levels reported by SWP.

In recent discussions with Dr. Williams, she indicated that if Southern Wood Piedmont in coordination with the City of Wilmington and the N.C. Ports Authority can provide detailed information on the exact future use of the property, such as low intensity industrial (assumed in the report), then alternate residual concentrations may be considered. The following concentrations

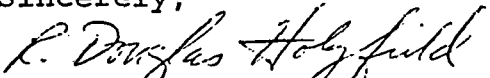
have been provided by Dr. Williams as being acceptable in Industrial Soils without cover:

Benzo(a)anthracene	3.9	mg/kg
Benzo(a)pyrene	.39	mg/kg
Benzo(b)fluoranthene	3.9	mg/kg
Benzo(k)fluoranthene	39.0	mg/kg
Dibenzo(a,h)anthracene	.39	mg/kg
Indeno(1,2,3-cd)pyrene	3.9	mg/kg
Pentachlorophenol	24.0	mg/kg
TCDD equivalents	.019	ug/kg

With cover, such as that provided by soils or concrete, whereby no exposures are possible, existing levels in the landfarm may be acceptable. Otherwise, the Industrial or Residential levels apply. These residual levels not only apply to the landfarm area, but the wood storage areas as well (data for contaminated soils in the treated and non-treated wood storage areas indicate significant levels of contamination, and in fact much greater than the levels in the landfarm, i.e. TWS-10B). In addition, risk for construction workers would have to be reduced to minimize exposure by additional personal protective equipment.

In conclusion, please contact me at (919-733-2178) or Dr. Williams (919-733-3410) if you have any questions or comments regarding this review or if you would like to arrange a meeting.

Sincerely,

  
R. Douglas Holyfield, Head  
Waste Management Branch  
Hazardous Waste Section

attachment:

cc: Jerry Rhodes  
Flint Worrell  
✓ Pat DeRosa  
Glenn Dunn  
Dr. Luanne Williams

*J. Williams*  
State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Epidemiology

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary



February 17, 1994

MEMORANDUM

TO: Doug Holyfield, Head  
Waste Management Branch

FROM: Luanne K. Williams, Pharm.D., Toxicologist *LKW*  
Environmental Epidemiology Section

SUBJECT: Risk Assessment Review Southern Wood Piedmont  
Wilmington, North Carolina

I have reviewed the soil sample results (only) as requested and offer the following comments:

1. The estimated excess lifetime cancer risk for the future construction worker (shown on Table 7-1) of  $6 \times 10^{-6}$  is not acceptable. The generally accepted incremental lifetime cancer risk is  $1 \times 10^{-6}$ . I disagree with the third finding and conclusion on page 9-1 which reads as follows:

"The total ELCR calculated for a future site construction worker was  $6 \times 10^{-6}$  and is within the target risk range of  $10^{-4}$  to  $10^{-6}$ ."

ELCR of  $6 \times 10^{-6}$  is not within the range of  $10^{-4}$  to  $10^{-6}$ . The ELCR of  $6 \times 10^{-6}$  is greater than  $1 \times 10^{-6}$ .

2. It is stated on page 1-1 that "the future use proposed by the City of Wilmington and the North Carolina Ports Authority is for low intensity industrial use." The exposure pathways considered in this report included "incidental soil ingestion, dermal (skin) contact with soil, and inhalation of dust on-site during future construction activities." (Page 6-1) According to the report, it was assumed that future land use will remain industrial/commercial.

We cannot assume that future land use will remain industrial. When evaluating the risk from exposure to contaminants on a particular site, ALL future uses of the property (which includes residential) must be considered in order to protect public health.

3. The exposure point concentrations (shown on Table 3-1) for the following contaminants are above what is considered acceptable for industrial and residential use. I have listed the recommended remediation levels. (USEPA, Region III, October 15, 1993 Risk-Based Concentration Table).

<u>Contaminants</u>	<u>Remediation Levels (mg/kg)</u>
Benzo(a)anthracene	.87
Benzo(a)pyrene	.088
Benzo(b)fluoranthene	.87
Benzo(k)fluoranthene	8.8
Dibenzo(a,h)anthracene	.088
Indeno(1,2,3-cd)pyrene	.87
Pentachlorophenol	5.3
TCDD equivalents	.0043 ug/kg*

- \* In a national dioxin study, EPA sampled soils from 138 rural and 221 urban sites not associated with sources of 2,3,7,8-TCDD. Only 17 of the rural and urban soils had detectable levels of 2,3,7,8-TCDD at a concentration range of .0002 ug/kg - .0112 ug/kg. (Toxic Materials News, 1987 Survey finds little dioxin at control sites. Industry finds trace amounts in paper products and highest levels at pesticide plants. September 30, p. 301). The TCDD equivalents detected of 2.27 - 3.14 ug/kg suggests contamination introduced on the site.

All of these contaminants have been reported to cause cancer in animals. The long-term exposure to the current contaminant levels could significantly increase a resident or worker's risk of developing cancer.

If you have any questions, please contact me at (919) 733-3410.

LKW:tm

Enclosures

*J. Williams*  
State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Epidemiology

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary



February 17, 1994

MEMORANDUM

TO: Doug Holyfield, Head  
Waste Management Branch

FROM: Luanne K. Williams, Pharm.D., Toxicologist *LKW*  
Environmental Epidemiology Section

SUBJECT: Risk Assessment Review Southern Wood Piedmont  
Wilmington, North Carolina

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ELCR of  $6 \times 10^{-6}$  is not within the range of  $10^{-4}$  to  $10^{-6}$ . The ELCR of  $6 \times 10^{-6}$  is greater than  $1 \times 10^{-6}$ .

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We cannot assume that future land use will remain industrial. When evaluating the risk from exposure to contaminants on a particular site, ALL future uses of the property (which includes residential) must be considered in order to protect public health.

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All of these contaminants have been reported to cause cancer in animals. The long-term exposure to the current contaminant levels could significantly increase a resident or worker's risk of developing cancer.

If you have any questions, please contact me at (919) 733-3410.

LKW:tm

Enclosures

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary



October 13, 1993

Mr. T. M. Davis, Manager of Environmental Affairs  
Southern Wood Piedmont Company  
Post Office Box 5447  
Spartanburg, SC 29304

Re: Inactive Hazardous Waste Sites Priority List  
Southern Wood Piedmont  
Gulf, Chatham County

Dear Mr. Gibbs:

This letter notifies you that the subject site has been included on the Inactive Hazardous Waste Sites Priority List in accordance with Section 130A-310.2 of the North Carolina General Statutes. The sites on the Priority List are ranked in decreasing order of danger to the public health and environment based on the Prioritization System (Title 15A, North Carolina Administrative Code, Subchapter 13C, Section 0.200).

After a site is placed on the Priority List, the Superfund Section of the Department of Environment, Health, and Natural Resources will contact the responsible parties and encourage them to clean up the site under a remedial action plan approved by the Section. Responsible parties include persons who discharged hazardous substances onto the site, persons who arranged for such discharge, persons who accepted the discharge, and persons who transported the hazardous substances to the site. If an inactive hazardous substance or waste disposal site endangers public health or the environment, a remedial action can be ordered by the State.

You can contact Kim Clarke at (919) 733-2801 to request a copy of the Priority List or the Prioritization System rules or to schedule a time to review the Superfund Section files. If you have any additional questions you can contact me at the same number.

Sincerely,

Charlotte N. Jesneck, Head  
Inactive Hazardous Site Branch  
Superfund Section

CVJ/slb  
SIS#190100431



Carole

1115 HILLSBORO  
RALEIGH, NC 27603  
TEL. (919) 833-2079

JOURNAL  
WINSTON-SALEM, N. C.

OCT 10 92

File Southern Wood Piedmont

FILE COPY

## 411 Trial of Waste Company's Owner Is Set to Start Monday

### ■ Bribery of federal judge alleged in charges involving Marine Shale

By Terry Martin

JOURNAL RALEIGH BUREAU

The owner of a hazardous-waste company that until recently was the largest recipient of toxic waste from North Carolina is set to go to court Monday on charges that he bribed a federal judge.

John M. "Jack" Kent, the owner and president of Marine Shale Processors Inc. of Amelia, La., is scheduled to be

tried in U.S. District Court in Shreveport, La.

Kent is accused with two co-defendants of promising \$2 million to Judge Richard Haik of U.S. District Court in Louisiana in exchange for Haik's rendering a favorable ruling in a \$50 million civil suit. The suit, which is still pending, was brought federal environmental officials and accuses the company of hazardous-waste violations.

The company, which has been under fire from regulators and environmental groups since 1986 over its use of hazardous waste in construction material, accepted 73.8 million pounds of waste

from North Carolina in 1990, the last year for which complete records are available.

Records at the N.C. Division of Solid Waste Management show that most of that waste, 73 million pounds of contaminated dirt, came from a Superfund cleanup of a former dump site in Chatham County owned by Southern Wood Piedmont Inc. of Gulf, N.C.

That project, authorized by the U.S. Environmental Protection Agency, accounted for 76 percent of the hazardous waste removed from cleanups in North Carolina in 1990 and 40 percent of all hazardous waste shipped out of the state

that year, records show. Shortly after those waste shipments, EPA barred Marine Shale from entering into contracts with the government and stated in a notice of its action: "The government cannot continue to do business with a company so dishonest that it would turn the hazardous waste of federal agencies into a menace to public health."

The effects of the pending litigation on future waste shipments from North Carolina is unclear, state officials say.

Linda W. Little, the executive director of the Governor's Waste Management

See WASTE, Page 24

# WASTE

Continued From Page 19

Board, said: "Louisiana has been trying to shut that place down for years. I don't know what effect it may have for us."

Michael A. Kelly, the deputy director of the N.C. Division of Solid Waste Management, which regulates hazardous-waste plants, said, "I don't think it will have any major impact on waste that is generated, but it could on cleanup sites because it has been a relatively inexpensive way to dispose of waste."

But Kelly said he has advised companies in North Carolina against relying on Marine Shale for waste disposal.

Marine Shale, much like Carolina Solite Corp. of Stanly County, has benefited for years from an exclusion to federal hazardous-waste incineration regulations for companies that use hazardous-waste to manufacture aggregate, a concrete-like construction material.

Richard C. Fortuna is the executive director of the Hazardous

## WASTE SHIPMENTS

Quantities of hazardous waste shipped to Marine Shale Processors from North Carolina.

Year	Total Pounds
1987	4,961,811
1988	2,139,485
1989	1,390,253
1990	73,833,371
1991	N/A

Source: N.C. Div. of Solid Waste Management

Waste Treatment Council, a trade organization of 65 waste industries that has been critical of both companies.

He said that Kent's trial demonstrates why rigid environmental regulations should be enforced as rigidly against waste burners who ask for exemptions as against hazardous-waste incinerators.

"If Marine Shale Processing can exempt itself from federal environmental laws by claiming that its incinerator ash is a product that

nobody buys, then every incinerator or waste burner in the country could make the same claim, effectively rendering our environmental laws moot," Fortuna said in a prepared statement.

The EPA closed many of those exclusions with new regulations in August 1991 and Carolina Solite, previously the largest burner of hazardous waste in North Carolina, is now installing \$2 million in new pollution equipment in its effort to return to using hazardous waste as a fuel.

Joseph A. Cage, the U.S. attorney for western Louisiana, said that the future of Marine Shale awaits the outcome of Kent's trial on charges of conspiracy, bribery and obstruction of justice. If convicted, Kent faces up to 15 years in prison and fines of up to \$6.5 million.

Cage said, "I don't know what effect it will have on the company, but if Kent's convicted, he won't be around to do it anymore."

But Robert Habans, an attorney for Kent, said yesterday: "Mr. Kent is an innocent man. He shouldn't even be in court with those scoundrels (his co-defendants)."

HAZARDOUS WASTE SECTION  
DIVISION OF SOLID WASTE MANAGEMENT

MEETING WITH

NAME Southern Wood Piedmont ADDRESS W.ilmington  
DATE 3-14-92 EPA ID NUMBER \_\_\_\_\_ DOCKET NUMBER \_\_\_\_\_

ATTENDING	REPRESENTING & PHONE NUMBER
Doug Holyfield	NC Hazardous Waste Section 733-2178
Jerry Rhodes	" " " " "
Pvt DeRosa	NC Superfund Section 733-2801
Charlotte Jesnech	NC Superfund "
Rob Gelblum	AG's Office
Dennis B. Myers	AG's Office - NCSPA
Tom Knight	State Ports - Engineering
Bonnie Albritton	State Ports - Property
Tim. "Chuck" Davis	SWP - 803-599-1075
William H. Kitchens	Arnold Golden & Gregory for SWP 404-577-5100
Gregory B. Kuntz	ETE
HENRY O. Phillips Sr -	SWP. Wilmington N.C. PLANT SITE
Robert W. Oast, Jr.	City of Wilmington Ass't. City Attorney 341-7820
JUDY Bullock	Attorney General's Office (H.Waste) 733-8352

Southern Wood Piedmont  
NCD 05857-467

9/14/92

WILMINGTON NC  
PRESENTATION OUTLINE

**Site History**

**Consent Order Items:**

- o Superfund Area I:  
Excavate and landfarm discolored soil in one treated pole storage area
- o Track Area:  
Remove visually heavily contaminated soil and landfarm
- o Oil Treating Areas:  
Remove visually contaminated
- o Treated Product Storage Areas:  
Shall be tilled in place
- o CCA Storage Tank Area:  
Remove above 100 times drinking water std. Dispose of in an approved landfill.  
.5 to 5.0, solidify with cement and place on site.
- o Landfarm as indicated
- o Soil Sampling as indicated
- o Status of Landfarm
- o Assessment
- o Future Assessment
- o Develop Remedial Action Plan if needed
- o Closure of Landfarm per Consent Order
- o Options to indicating completion

## **SITE HISTORY**

**Operated as a wood treatment facility from 1932 to 1983.**

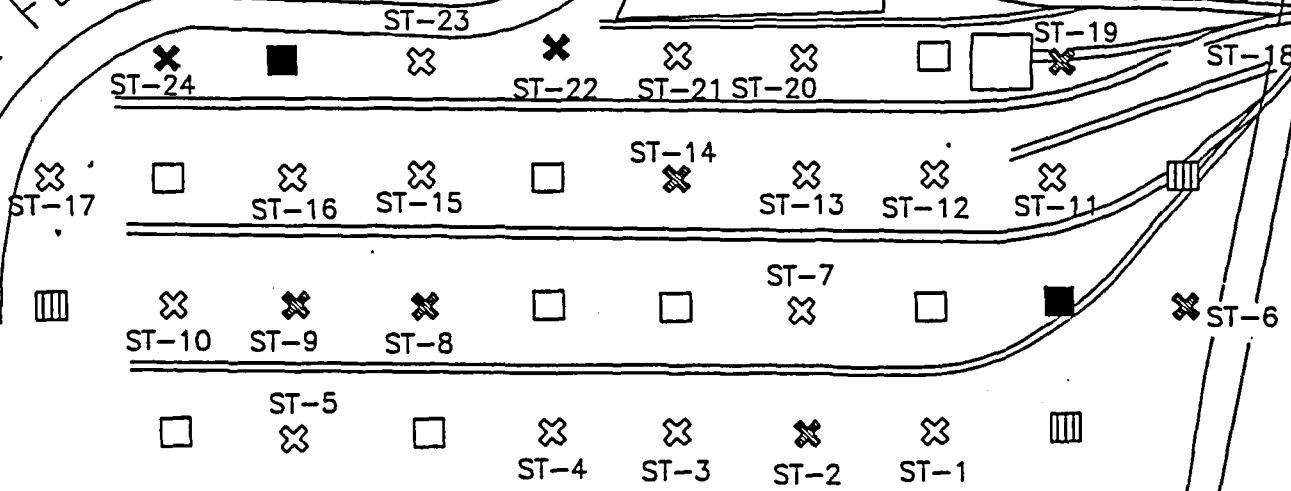
- **Size**
  - **35 - 40 acres leased from City of Wilmington**
  - **6.7 acres leased from North Carolina Ports Authority**
- **1932 North State Company**
- **1935 Taylor Colquitt Company - creosote use**
- **1964 name changed to Taylor Piedmont**
- **1968 - 1969 ITT purchase**
- **January 1, 1971 name changed to Southern Wood Piedmont**
  - **chromated copper arsenate use (early 1970's)**
  - **Pentachlorophenol use (late 1970's)**
- **June 1983 cessation of wood treatment operations; initiation of closure procedures**

## LANDFARM DATA

1990 - 1991

- Last tilled in 1990
- PAHs detected in all samples collected in 1990 - 1991.
- The highest PAH concentration was detected in 1991.
- The mean concentration for PAHs showed a slight decrease (527 mg/kg to 458 mg/kg).
- Statistically, data generally did not indicate concentrations reported in 1991 were significantly different than 1990.
- Two and three rings PAHs decreased from 9 to 88 percent between 1990 and 1991. The average was about 33 percent.
- Concentrations of four, five, and six ring PAHs had a net average increase of 4.5 percent. Data was highly variable however.
- Pyrene (four rings) "example" increase of 40 percent
- Dibenzo (a,h) anthracene (five rings) and benzo (g,h,i) perylene (six rings) decreased by about 40 percent.

CAPE FEAR RIVER



LEGEND

- |                             |                          |
|-----------------------------|--------------------------|
| ✕ SOIL BORING INVESTIGATION | ■ SOIL SAMPLING LOCATION |
| ⊗ NO ODOR                   | □ NO ODOR                |
| ⊗ FAINT ODOR                | ▤ FAINT ODOR             |
| ✕ DISCOLORED SOIL, ODOR     | ■ DISCOLORED SOIL, ODOR  |



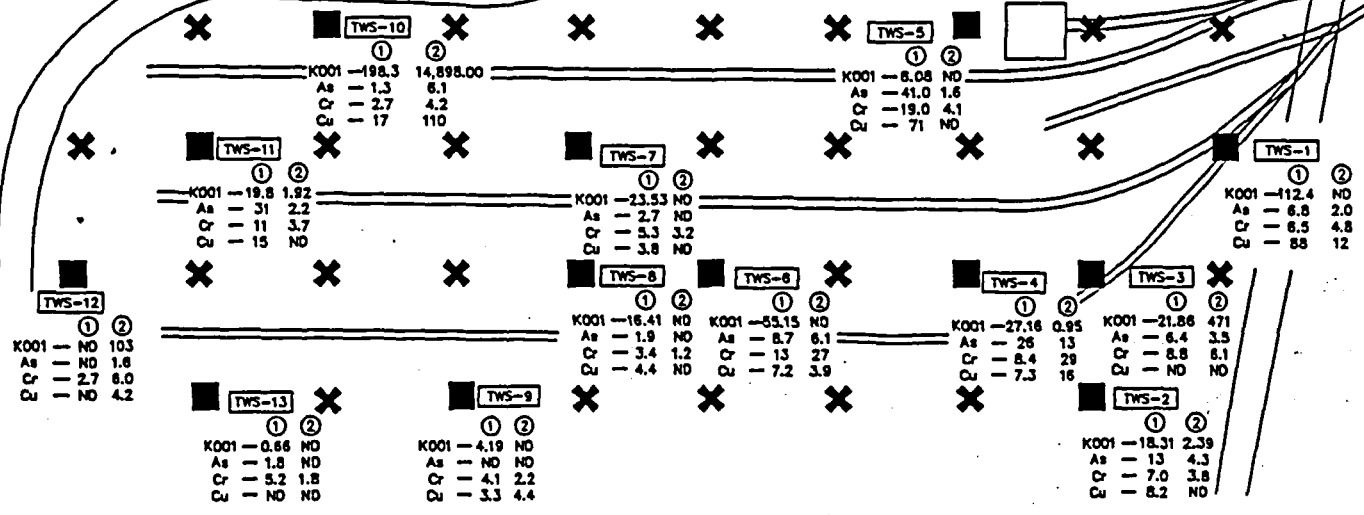
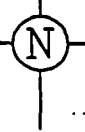
SOIL BORING INVESTIGATION LOCATIONS IN THE FORMER NON-TREATED ST WOOD STORAGE AREA

FIGURE

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, NORTH CAROLINA



CAPE FEAR RIVER



AREA TWS

**LEGEND**

- SOIL SAMPLING LOCATION
- THE FOLLOWING DESIGNATIONS APPLY FOR ALL NTA, NTB AND TWS BOREHOLES:
- ① DENOTES DEPTH AT 0"-6"
- ② DENOTES DEPTH AT 12"-18"

- K001 - TOTAL DETECTABLE K001 (mg/kg dw)
- As - TOTAL ARSENIC (mg/kg dw)
- Cr - TOTAL CHROMIUM (mg/kg dw)
- Cu - TOTAL COPPER (mg/kg dw)
- ✕ - SOIL BORING INVESTIGATION LOCATIONS
- ND - NOT DETECTED

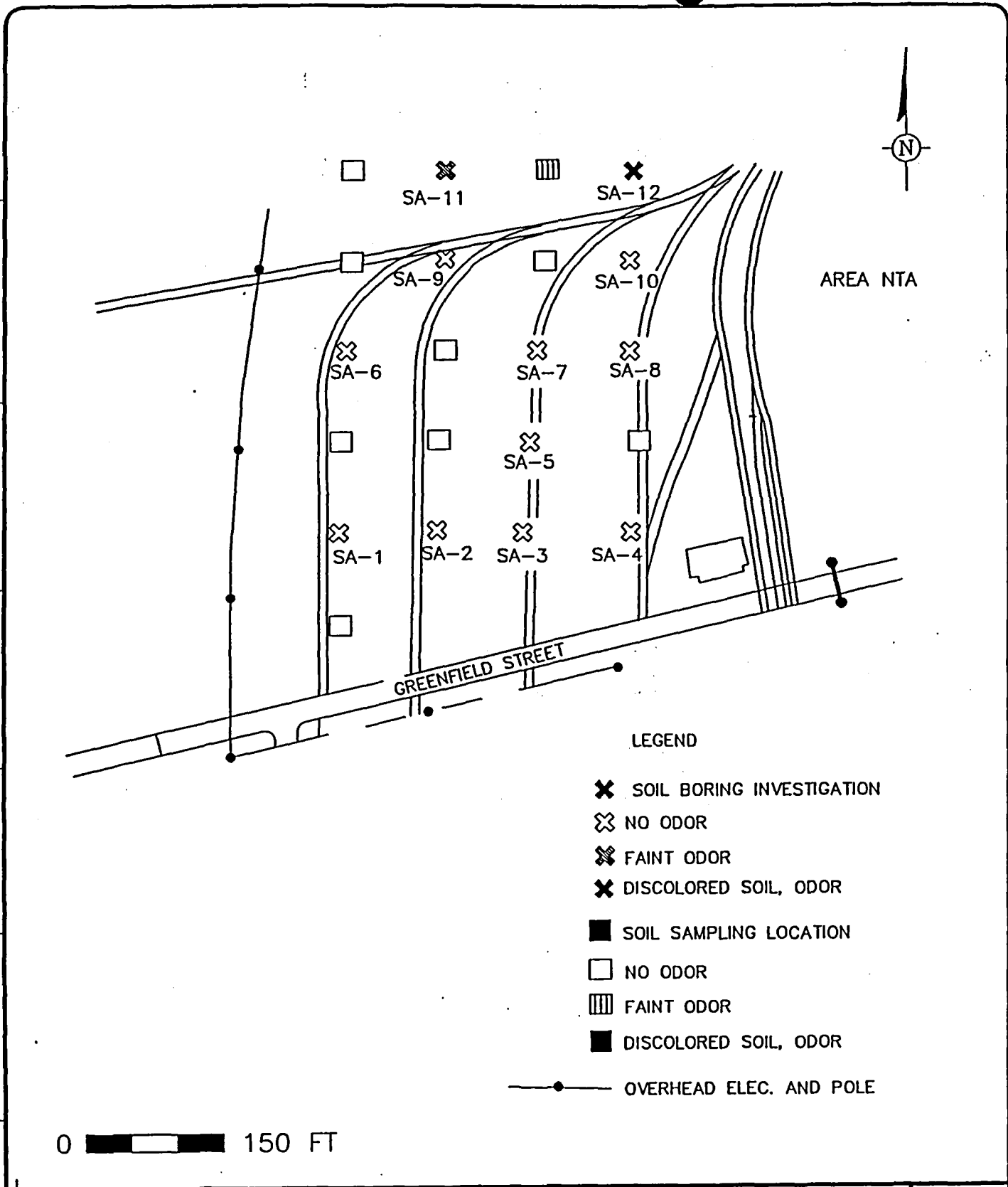


TOTAL DETECTED K001, ARSENIC, CHROMIUM, AND COPPER MEASURED IN SOIL SAMPLES THAT WERE COLLECTED IN THE FORMER NON TREATED TWS WOOD STORAGE AREA

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, NORTH CAROLINA

FIGURE

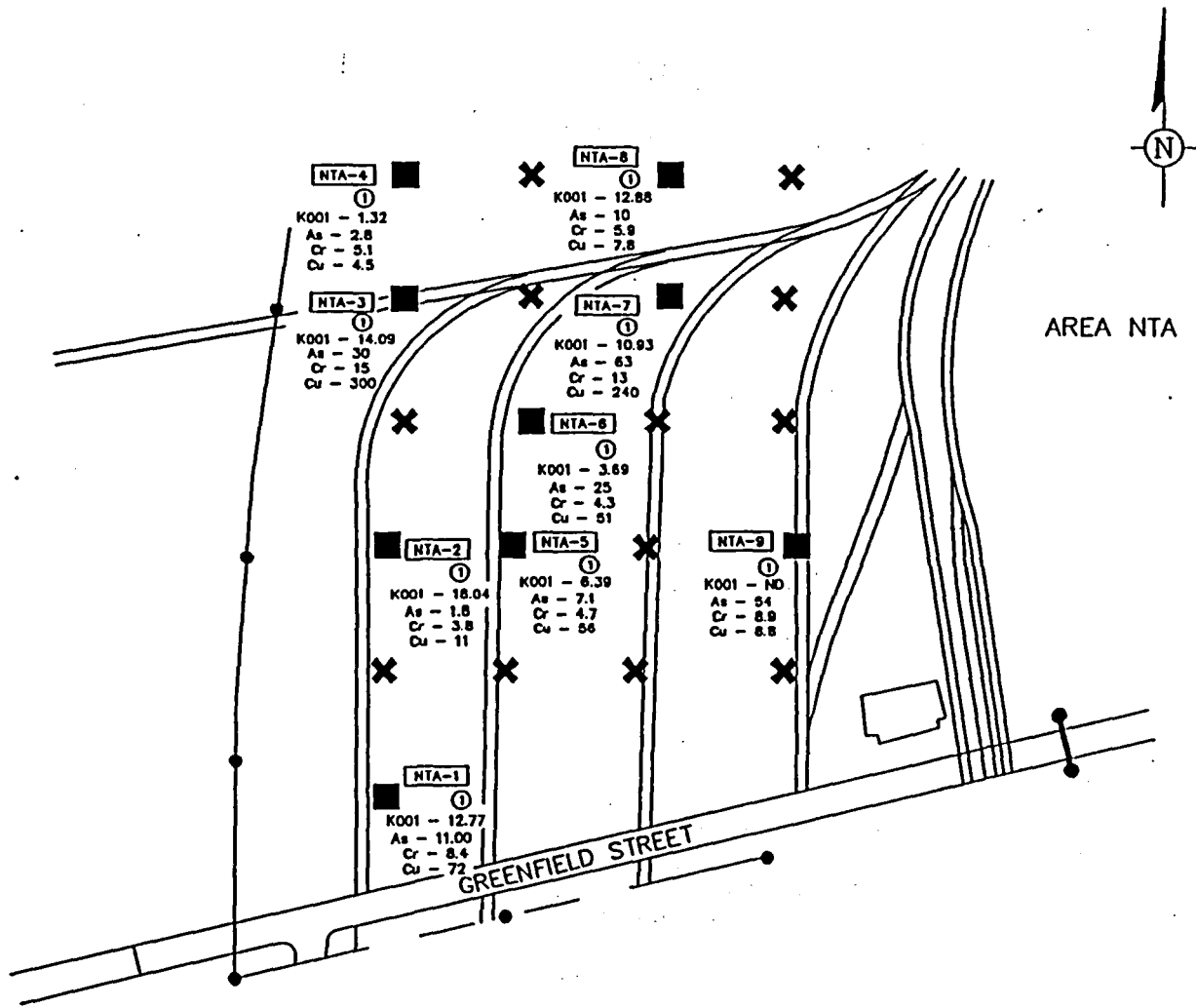




SOIL BORING INVESTIGATION LOCATIONS IN THE  
FORMER NON-TREATED SA WOOD STORAGE AREA

FIGURE

SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA



■ SOIL SAMPLING LOCATION  
 THE FOLLOWING DESIGNATIONS APPLY FOR ALL NTA, NTB AND TWS BOREHOLES:

- ① DENOTES DEPTH AT 0"-6"
- ② DENOTES DEPTH AT 12"-18"

K001 - TOTAL DETECTABLE K001 (mg/kg dw)  
 As - TOTAL ARSENIC (mg/kg dw)  
 Cr - TOTAL CHROMIUM (mg/kg dw)  
 Cu - TOTAL COPPER (mg/kg dw)  
 ND - NOT DETECTED

✕ SOIL BORING INVESTIGATION LOCATION

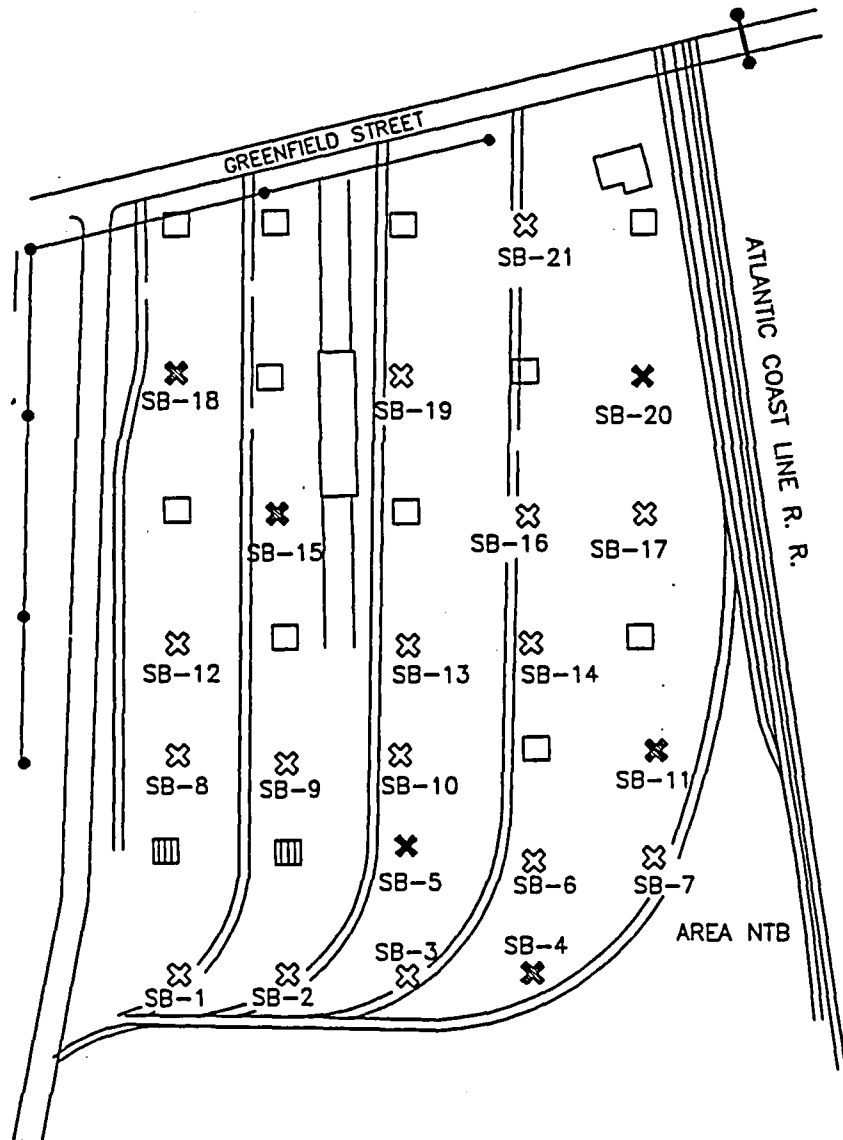
0 150 FT

—●— OVERHEAD ELEC. AND POLE

TOTAL DETECTED K001, ARSENIC, CHROMIUM, AND COPPER MEASURED IN SOIL SAMPLES THAT WERE COLLECTED IN THE FORMER NON-TREATED NTA WOOD STORAGE AREA

FIGURE

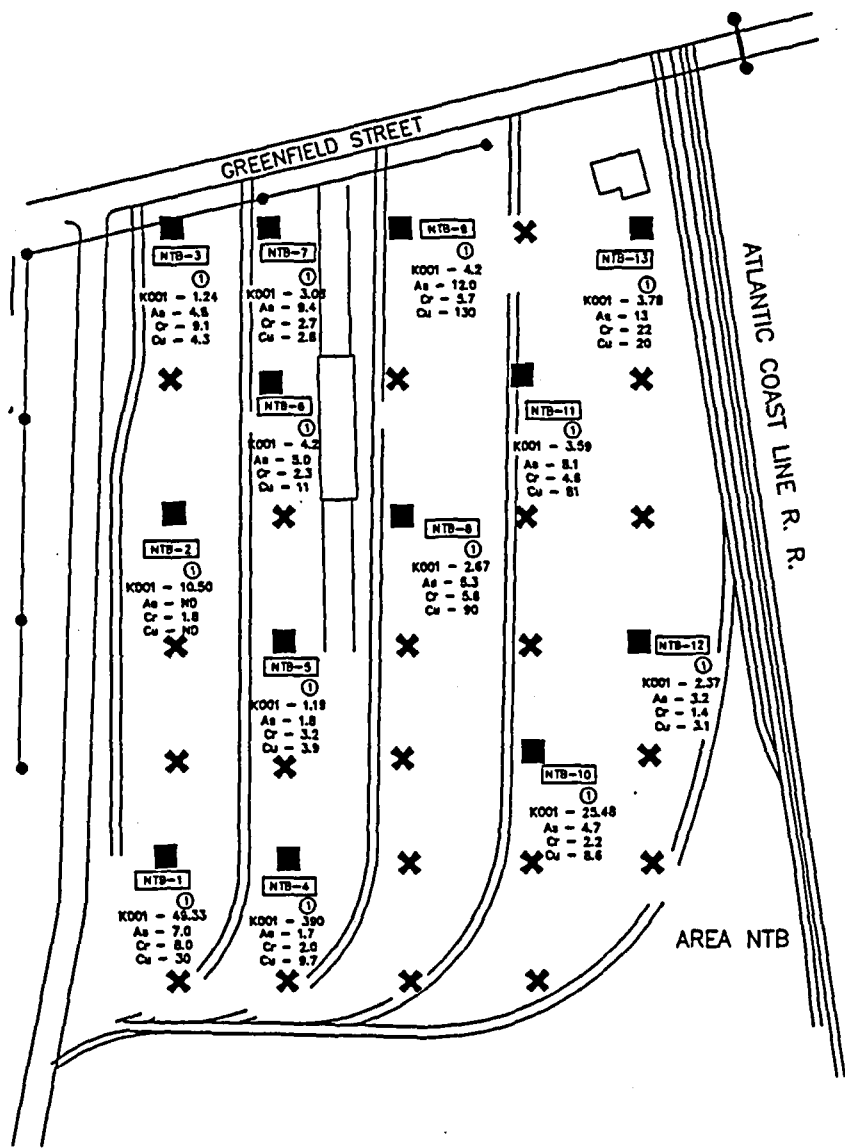
SOUTHERN WOOD PIEDMONT COMPANY  
 WILMINGTON, NORTH CAROLINA



SOIL BORING INVESTIGATION LOCATIONS IN THE  
FORMER NON-TREATED SB WOOD STORAGE AREA

SOUTHERN WOOD PIEDMONT  
WILMINGTON, NORTH CAROLINA

FIGURE



**LEGEND**

- SOIL SAMPLING LOCATION
- THE FOLLOWING DESIGNATIONS APPLY FOR ALL NTA, NTB AND TWS BOREHOLES:
- ① DENOTES DEPTH AT 0"-6"
- ② DENOTES DEPTH AT 12"-18"
- K001 - TOTAL DETECTABLE K001 (mg/kg dw)
- As - TOTAL ARSENIC (mg/kg dw)
- Cr - TOTAL CHROMIUM (mg/kg dw)
- Cu - TOTAL COPPER (mg/kg dw)
- X SOIL BORING INVESTIGATION LOCATION
- OVERHEAD ELEC. AND POLE
- ND - NOT DETECTED



TOTAL DETECTED K001, ARSENIC, CHROMIUM, AND COPPER MEASURED IN SOIL SAMPLES THAT WERE COLLECTED IN THE FORMER NON-TREATED NTB WOOD STORAGE AREA

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, NORTH CAROLINA

FIGURE



August 13, 1992

RECEIVED

JUN 03 1996

SUPERFUND SECTION

Mr. T.M. (Chuck) Davis, Manager  
Environmental Affairs  
Southern Wood Piedmont  
Post Office Box 5447  
Spartanburg, South Carolina 29304

Re: Recommendations and Cost Proposal for  
Phase II Ground Water Quality Assessment  
Southern Wood Piedmont Company  
Wilmington, North Carolina  
ETE Project #530-06-502

Dear Chuck;

Environmental Technology Engineering, Inc. (ETE) is pleased to provide you with a proposal and cost estimate for a Phase II ground water quality assessment at the Southern Wood Piedmont (SWP) facility located in Wilmington, North Carolina. The purpose of the Phase II investigation is to further define the hydrogeology and ground water quality at the facility. Data collected during the Phase I investigation was utilized in the preparation of the Phase II recommendations.

Phase II activities will include the abandonment of temporary monitoring wells, installation of monitoring wells, ground water sampling, soil sampling, slug testing, and the preparation of an aerial photograph and topographic map depicting the site. Presented below is ETE's recommended scope of work for the Phase II ground water quality assessment.

### RECOMMENDED SCOPE OF WORK

Recommendations are proposed which will further assess the vertical and horizontal extent of contamination from wood preserving constituents at the facility.

#### TASK 1

Phase I activities included the installation of 5 temporary monitoring wells at the facility. These 5 temporary monitoring wells will be abandoned. Based on the data collected to date, additional monitoring wells will be necessary to properly define the dissolved and free product plume present within the surficial aquifer beneath the site. ETE proposes to install nine (9) additional shallow monitoring wells to monitor the surficial aquifer.



Several of the proposed monitoring wells may be located within wetland areas. Because of this it was necessary to contact the appropriate regulatory agencies in North Carolina to discuss the installation of monitoring wells and building roads for access within wetland areas. Please refer to Figure 1 for the proposed monitoring well locations.

#### Activity 1

In order to install the proposed monitoring wells and access roads in potential wetland areas at the facility, appropriate permits will be required. Through telephone conversations with Jeff Richter of the Corp of Engineers, he stated that the installation of monitoring wells within a wetland area required no permits, just notification. However, the completion of access roads involving the placement of fill material within the wetland area would require evaluation and appropriate permits. The permits that would be required include the Corp of Engineers permit, 401 water quality certification permit from the State of North Carolina Division of Environmental Management, and a permit from the Division of Coastal Management.

Due to the permit requirements involved with access road installation, ETE proposes to install the monitoring wells using an all-terrain vehicle (ATV) drilling rig. Utilizing the ATV rig for monitoring well installation within the wetland areas will not require a permit, just notification of monitoring well installation. Following installation of the monitoring wells and analysis of ground water samples from the wells located in the wetland areas, access road completion could then be evaluated. If access roads are deemed necessary, the appropriate permits could then be obtained and the roads installed. Based on previous site observations, access to the wells for sampling in the interim can be made by wearing hip waders.

Therefore, ETE proposed to send correspondence to the Corp of Engineers in Wilmington stating our intention of installing monitoring wells within potential wetland areas at the facility. No access roads will be constructed at this time in the wetland areas.

#### Activity 2

Five temporary monitoring wells, installed as part of Phase I activities, will be abandoned by overreaming the monitoring well to below the well depth. The well construction materials will then be removed and the borehole abandoned by filling the borehole with a cement/bentonite grout to land surface.

To further define the horizontal extent of contamination within the surficial aquifer, 9 monitoring wells will be installed. Five (5) of these monitoring wells, designated MW-22 through MW-26, will be installed at the southern end of the site. Three (3) monitoring wells (MW-19, MW-20, MW-21) will be installed to replace existing temporary



monitoring wells installed during Phase I activities. Monitoring well MW-19 will be installed in close proximity to temporary well B-4. Temporary monitoring wells B-5 and B-6 will be replaced by monitoring wells MW-20 and MW-21, respectively. One (1) monitoring well will be installed on the northern edge of the site, adjacent to the Hess property. This well, designated MW-18 will be installed to the west of MW-6 in order to assess the ground water quality in this area.

Arrangements will be made with the local water authority to provide access for city water to be used during monitoring well installation activities. It is proposed that a water meter be attached to an on-site fire plug.

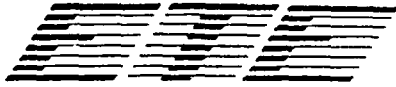
All shallow monitoring wells will be installed according to SWP specifications (Figure 2) with the exception of using pit casing. Pit casing will not be set during completion of the shallow monitoring wells due to the surficial aquifer being less than ten feet thick and the water table being located approximately 1 foot below land surface. However, if surface water is present in the location selected for monitoring well installation, as in the wetland areas, a five foot section of pit casing extending a minimum of 1 foot above the surface water level will be installed to prevent surface water infiltration into the borehole during installation. For the purpose of this proposal it is assumed that 3 shallow monitoring wells will require pit casing installation.

These wells will be installed using a 10-inch diameter hollow stem auger. The borehole will be advanced to the top of the peat. During advancement of the soil borings, continuous split-spoon samples will be collected below the water table. During Phase I monitoring well installation, heaving and flowing sands were encountered, hampering the collection of representative surficial aquifer soil samples and evaluating the depth to the top of the peat. In order to assure retrieval of representative soil samples, a plug will be placed inside the lead auger. This plug will prevent the backflow of sands into the auger flights while allowing the collection of split spoon samples.

A soil sample from each split spoon will be placed in a zip-lock bag with adequate head space. Upon temperature equalization, the soil samples will be screened with an OVA. An experienced hydrogeologist will supervise and document all field work and classify the soil samples using the Unified Soil Classification Scheme. The actual depth of the monitoring wells will be determined in the field by an experienced hydrogeologist.

The proposed surficial aquifer monitoring wells are recommended to be constructed using 2-inch diameter, 10-foot sections of flush joint threaded PVC riser with a 5 foot section of factory slotted (0.010 inch) stainless steel well screen. However, if visual wood preserving constituents are observed during advancement of the borehole, a stainless steel riser will also be used to complete the monitoring well. To prevent cross-contamination during drilling operations, all construction materials and downhole drill equipment will be steam cleaned between each borehole. All decontamination fluids will be collected, containerized and disposed of properly.





Except for monitoring well MW-18, all shallow monitoring wells will be installed so that the base of the screen rests on top of the peat. The screen from monitoring well MW-18 will be installed to bracket the water table. A 10-foot screen will be used in the completion of monitoring well MW-18 to allow for bracketing the water table which fluctuates due to tidal influences.

To maintain the integrity of the wells after installation, each well will be secured with a protective pad, casing, and "keyed alike" locks. All soil removed during the advancement of the boreholes will be disposed in roll-off containers provided by SWP.

### Activity 3

Upon completion, the monitoring wells will be developed by repetitive bailing with a hand bailer or centrifugal pump. All water extracted from the wells will be collected and disposed of properly.

### Activity 4

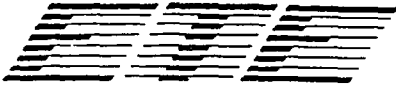
Precise location and elevation of the ground surface and top of casing (TOC) of the newly installed monitoring wells will be determined by direct field survey.

## TASK 2

In order to define the stratigraphy and vertical extent of contamination beneath the site, ETE proposes to install three (3) deep monitoring wells into the aquifer beneath the peat layer. For the purpose of this proposal, this potential aquifer will be termed the lower aquifer. These deep monitoring wells will be used to evaluate the thickness of the peat layer, the nature of the aquifer materials underlying the peat, the presence or absence of a lower confining layer, the ground water quality within the lower aquifer, and the lower aquifer ground water flow direction and hydraulic gradient.

### Activity 1

Because the stratigraphy below the peat layer is unknown at this time, it is recommended that the first borehole (stratigraphic borehole) be installed in an assumed clean area located to the north of the contaminant plume. This well will be designated as MW-8A (see Figure 1). A 10-inch diameter borehole will be advanced into the underlying peat unit to approximately 2 feet above the base of the peat using the hollow stem auger method. A 6-inch diameter PVC pit casing will be installed into the borehole. A grout mixture of cement and bentonite will be placed by the tremie method in the annular space around the pit casing and the grout allowed to cure a minimum of 24 hours.



Within the pit casing, a 3.875-inch diameter borehole will be drilled by the mud rotary method to a depth of 100 feet or to the next confining unit of at least five feet in thickness, whichever comes first. Split spoons will be collected continuously to a depth of 20 feet, thereafter, they will be collected on five foot centers.

A soil sample from each split spoon will be placed in a zip-lock bag with adequate head space. Upon temperature equalization, the soil samples will be screened with an OVA. An experienced hydrogeologist will supervise and document all field work and classify the soil samples using the Unified Soil Classification Scheme.

Upon completion, the borehole will be grouted with a cement and bentonite mixture to the depth of screen placement. The screen placement will be determined based on visual observations and OVA screening. If elevated OVA readings are encountered within the lower aquifer during auger advancement, the monitoring well will be positioned to screen the elevated interval. If the OVA readings represent background levels throughout the lower aquifer, the top of the screen will be placed immediately below the base of the peat layer. The well will be constructed using 2-inch diameter, 10-foot sections of flush joint threaded PVC riser with a five (5) foot section of factory slotted (0.010 inch) stainless steel well screen. However, if visual wood preserving constituents are observed during advancement of the borehole below the pit casing, stainless steel riser will also be used to complete the monitoring well. To prevent cross contamination during drilling operations, all construction materials and downhole drill equipment will be steam cleaned between each borehole.

To maintain the integrity of the well after installation, the well will be secured with a protective pad, casing, and "keyed alike" lock. All soil removed during the advancement of the boreholes will be disposed in roll-off containers provided by SWP.

In addition to the stratigraphic borehole, ETE recommends installing two (2) additional deep boreholes through areas where wood preserving constituents are present in the surficial aquifer (see Figure 1). These boreholes will be designated MW-11A and MW-19A. These deep monitoring wells will be installed following the procedures outlined above for MW-8A. The screen placement will be selected to screen the same interval as MW-8A.

All soil removed during the advancement of the boreholes will be disposed in roll-off containers provided by SWP.

## Activity 2

Upon completion, the monitoring wells will be developed by repetitive bailing with a hand bailer or submersible pump. All water exiting from the wells will be collected and disposed of properly.



### Activity 3

Precise location and elevation of the ground surface and top of casing (TOC) of the newly installed monitoring wells will be determined by direct field survey.

#### TASK 3

Subsequent to monitoring well installation, it is proposed that ground water samples be collected from each monitoring well to evaluate the ground water quality at the referenced facility. The monitoring wells will be sampled for Wilmington site-specific constituents as determined by Southern Wood Piedmont.

Water level, well depth, and the presence of separate phase fluids will be evaluated prior to initiating ground water sampling activities. The thickness of separate phase oil, if present, will be measured using an oil/water interface probe.

Representative ground water samples will be collected from all monitoring wells not containing free product. A clean dedicated bailer will be utilized to evacuate three well volumes of ground water from the well. The pH, conductivity, and temperature of the ground water will be recorded and the ground water sample placed into respective sterilized ground water sample containers for each well. The containers will be labeled according to owner, site name, well number, date, time, pH, conductivity, temperature, and type of analysis to be performed. The collected sample will be kept cool by placing the sample immediately into a cooler. The sample will then be shipped to EMS Heritage Laboratories, Inc., for analysis.

#### TASK 4

ETE proposes to conduct soil sampling and analysis along the western edge of the drainage ditch located on the site. A maximum of 10 hand auger borings will be advanced into the sediment along the on-site side of the tidal creek. Previous soil sampling data will be evaluated and soil sample locations will be selected to augment current data.

Hand auger borings will be conducted at low tide so that borings can be completed within the creekbed. Each boring will be advanced to an approximate depth of 2 feet below land surface. The deepest sample retrieved from each borehole will be sent to the laboratory for analysis of Wilmington site-specific constituents. If visual wood preserving constituents are noted in the sample, it will not be sent to the laboratory for analysis. The horizontal location of the borehole will be determined by a land surveyor.

#### TASK 5

No sooner than twenty-four hours after development of the newly installed monitoring wells, it is recommended that the static water level of each monitoring well (including the existing



monitoring wells) and the tidal staff gauges be measured to determine the ground water flow direction(s) at the site. All measurements should occur at low tide and should be taken within an one hour period. The surveyed TOC elevations will be used to convert static water level to water level elevation. The water level elevations will then be used to construct a water table map illustrating the direction(s) of ground water flow.

#### TASK 6

ETE will complete an in-situ recovery test on selected monitoring wells that do not contain free product. The purpose of these tests is to evaluate the hydraulic conductivity of the aquifer underlying the site. A total of eight (8) slug tests will be performed. The static water level in the well to be tested will be measured and recorded prior to initiating the test. The well will be instantaneously drawn down as much as possible by use of a pump, compressed air lift, or other method. At frequent, set time intervals, the water level in the well and the respective elapsed time from the beginning of the test will be measured and recorded. This procedure will be continued until the water level recovers to approximately 90% of the amount lowered from the static water level. The data generated from these tests will aid in the estimation of the hydraulic conductivity (K) and ground water seepage velocity ( $V_s$ ) of the surficial aquifer.

In-situ recovery tests will also be conducted on the deep wells not containing free oil. The same procedures outlined above will be used to conduct the deep aquifer tests. These slug tests will be used to evaluate the hydraulic conductivity and estimate the ground water flow velocity within the lower aquifer. All water exiting the wells during slug testing will be containerized and disposed of properly.

#### TASK 7

It is recommended that an aerial photograph be taken of the site and adjacent properties so that a site topographic map can be prepared. This map will not only show the topography of the land, but also the locations of other pertinent features that may be beneficial to the site investigation.

A black and white vertical aerial photograph of the site at a scale of 1"=250' will also be prepared. Prior to flying the site, it will be necessary for control targets to be established. The control targets will consist of an "X" shape lying flat with the ground, with each leg measuring 4' x 6". The horizontal and vertical position of the control targets will be determined by a land survey. Once the control targets are in place, the flight will be performed.

Subsequent to the flight, semianalytical stereotriangulation to supplement the basic field control network will be performed to obtain the required points for mapping. Once the mapping is complete, a digital mapping of the area at a scale of 1"=100' with a 0.5' contour interval will be completed. This information will be computer plotted with ink on a 36" x 48" mylar sheet. In addition to the hard copy, a 3D AutoCad translation of the mapping data will be completed and stored on a computer disk.



Because dense vegetation can decrease the effectiveness of the survey, it is recommended that the flight be completed during the winter months when the leaves have dropped from the trees. In areas that are covered with heavy brush, the topography may require augmentation with field survey data. Field data is assumed to be required for the area south of the facility. Therefore, the proposed cost includes the surveying of the necessary field data to complete the topographic map.

### TASK 8

Lastly, it is proposed that a ground water quality assessment report be prepared documenting the results of the investigation and recommendations for further site characterization, if necessary. The report will include at a minimum, a summary of findings, boring logs, site location map, monitoring well location map, monitoring well construction diagrams, static water level elevations and top of casing elevations, soil boring locations, potentiometric maps illustrating ground water flow direction(s) for the upper and lower aquifers, ground water sample collection methodology, ground water sample laboratory analysis, ground water quality isoconcentration maps, slug testing data, aerial photograph, and topographic map, and recommendations for further assessment, as necessary.

### COST AND SCHEDULE

Environmental Technology Engineering, Inc. can complete the above scope of work for an estimated cost of \$80,107.00. For an itemized estimated cost, please refer to Appendix I of this proposal. The analytical costs will be billed directly between Southern Wood Piedmont and EMS Heritage Laboratories. All costs associated with clearing to provide access to proposed well locations and the transferring of borehole cuttings to roll-offs for proper disposal have been estimated for cost proposal purposes. ETE proposes to invoice SWP monthly until project completion.

#### Tasks

#### Estimated Completion Date

Task 1 - Task 6

Ten weeks from notice to proceed,

Task 7

Spring 1993, and

Task 8

Six weeks from completion of field activities.



As always, it has been a pleasure to be of service to you and SWP. If we can provide you with any additional information or can help in any other way, please feel free to contact us.

Respectfully Submitted,

**ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.**

*Gregory B. Kuntz*

Gregory B. Kuntz, P.G.  
Project Hydrogeologist  
Reg. SC #974

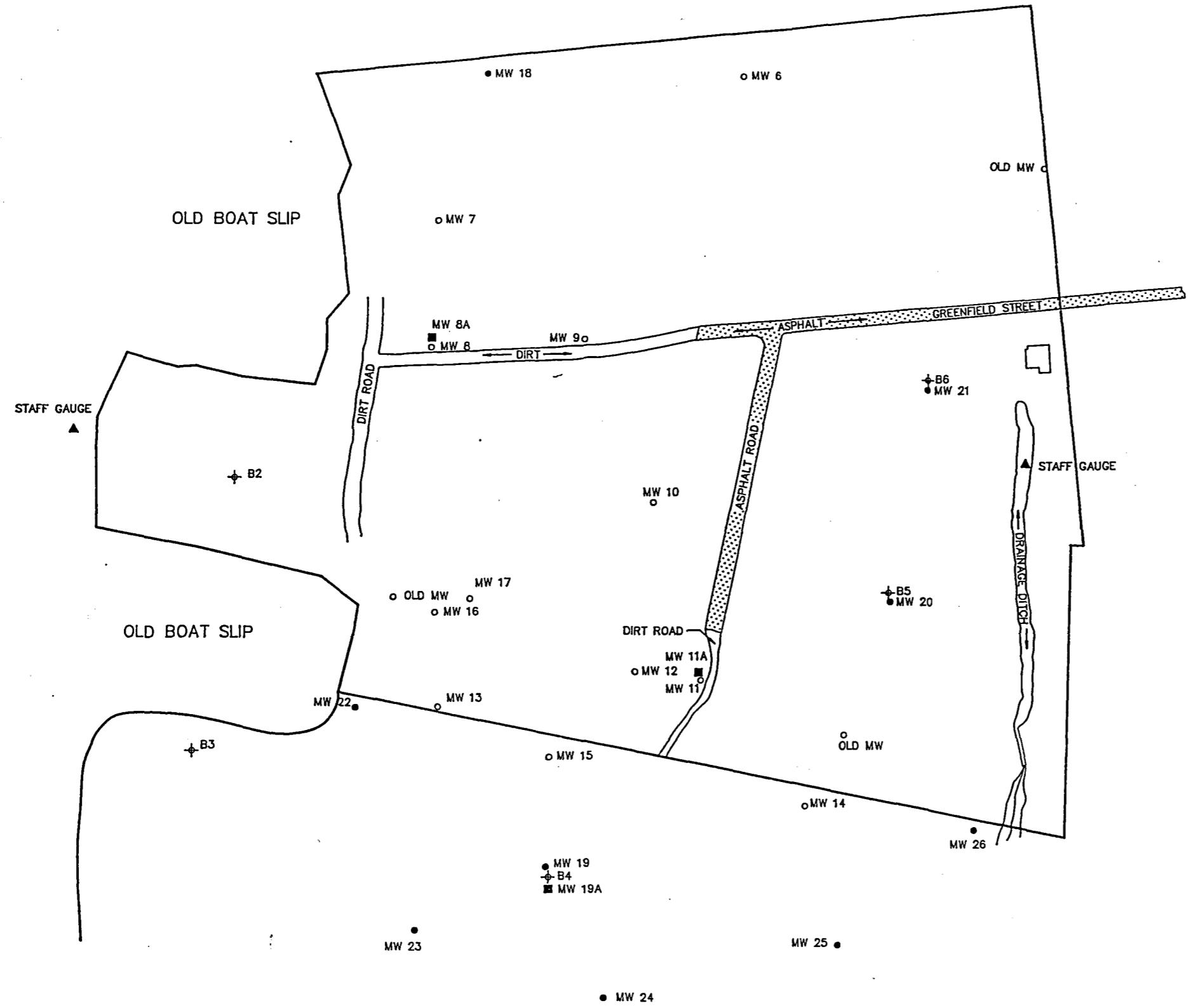
*Andrew M. Wilson*

Andrew M. Wilson, P.G.  
Senior Hydrogeologist  
Reg. SC #805

**FIGURE 1**



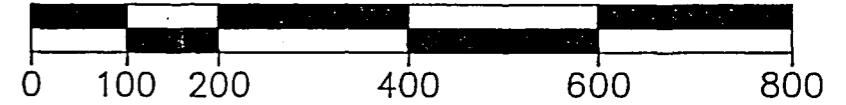
CAPE FEAR RIVER



**LEGEND**

- PERMANENT MONITORING WELLS (12)
- ⊕ TEMPORARY MONITORING WELLS (5)
- ▲ STAFF GAUGE
- PROPOSED SHALLOW MONITORING WELLS (9)
- PROPOSED DEEP MONITORING WELLS (3)

**GRAPHIC SCALE**



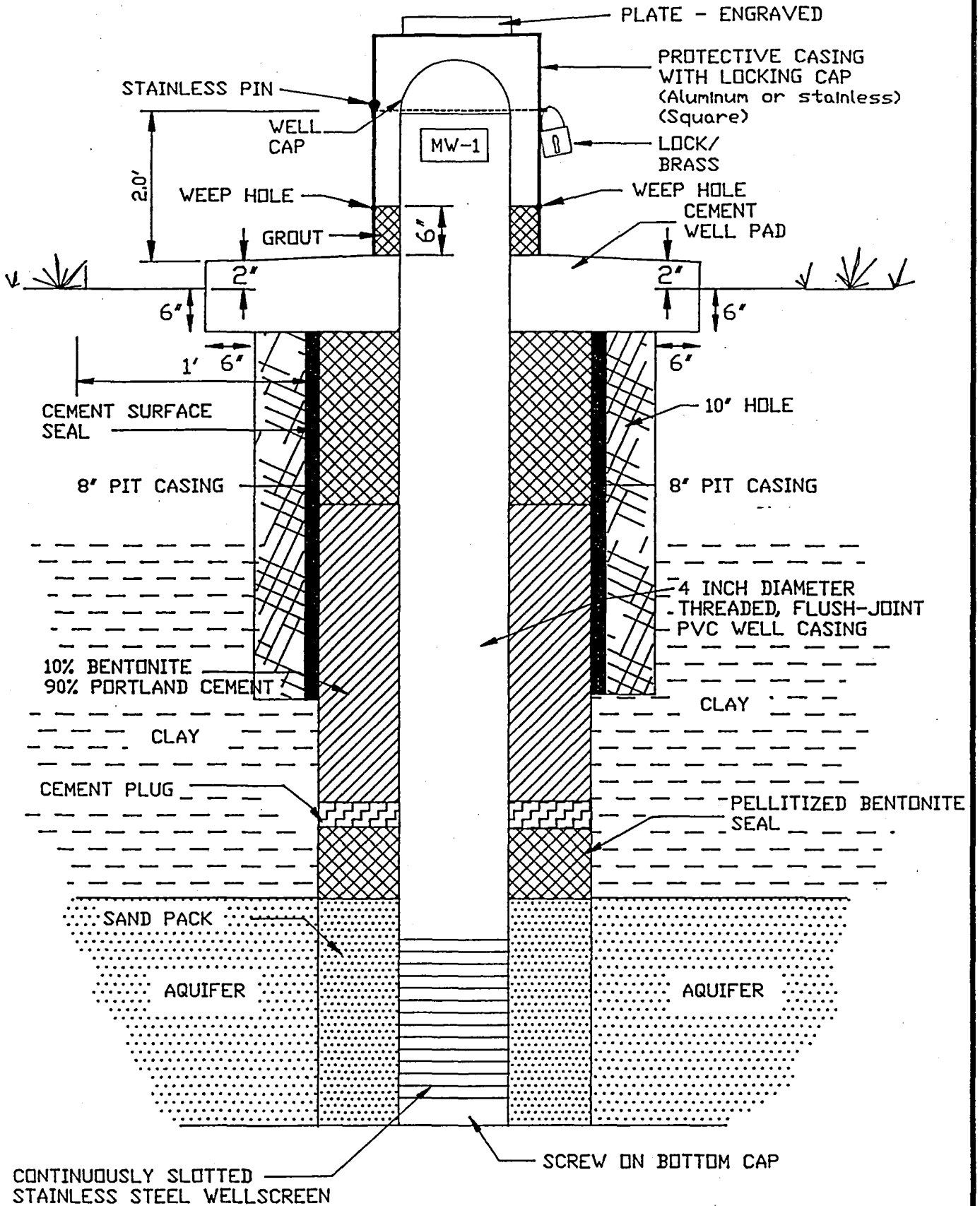
SCALE 1"=200'  
 DRAWN BY CAB  
 CHECKED BY CKA  
 DATE 6/3/92

SOUTHERN WOOD PIEDMONT COMPANY  
 WILMINGTON, NORTH CAROLINA

**PROPOSED MONITORING WELLS**

SHEET	OF
CADD NO. 53050105	
PROJECT NO. 530-06-501	

FIGURE 2



GROUNDWATER MONITORING WELL SCHEMATIC

SWP Specifications # 7/91

FIGURE 1

P.O. Box 5447  
Spartanburg, S.C. 29304  
Phone: (803) 599-1070  
FAX: (803) 599-1087

6

NCD058517467

✓ PATD.



## Southern Wood Piedmont Company

August 4, 1992

State of North Carolina  
Department of Environment, Health & Natural Resources  
401 Oberlin Road  
Raleigh, North Carolina 27605

AUG 06 1992

Attn: Doug Holyfield

Re: Ground Water Quality Assessment Report  
Southern Wood Piedmont Company  
Wilmington, North Carolina

Dear Mr. Holyfield:

Please find enclosed two copies of the Assessment Report, outlining activities and current conditions at the site. As discussed last week, we would like to meet with you at your earliest convenience to discuss these findings, and outline plans for the next phase of assessment work at the site.

I will call you within the next week to discuss possible dates and any preliminary questions you might have. Please let me know if I can be of further help in the referenced matter.

Sincerely,

T. M. Davis  
Manager, Environmental Affairs

5943bw

CC: T. H. Brannon w/o attachment  
M. D. Pruett w/o attachment  
R. H. Watts w/attachment  
A. M. Wilson - ETE, w/o attachment

P.O. Box 5447  
Spartanburg, S.C. 29304  
Phone: (803) 599-1070  
FAX: (803) 599-1087



## Southern Wood Piedmont Company

G  
NCD058517467  
✓ Lee Crosby  
✓ Jerry Rhoads

January 22, 1992

RECEIVED

JAN 29 1992

HAZARDOUS WASTE SECTION

North Carolina DEHNR  
Solid & Hazardous Waste Management  
Box 2091  
Raleigh, NC 27602

Attn: Mr. Doug Holyfield

Dear Mr. Holyfield:

The information enclosed consists of the following analytical reports from SWP, Wilmington:

1. Landfarm Areas #1 and #2
2. Cape Fear River Samples
3. On Site Monitoring Wells

If you have any questions after your review feel free to contact me at (803) 599-1082.

Sincerely,

A handwritten signature in cursive script that reads "Sandra B. Watson".

Sandra B. Watson  
Environmental Chemist

5383bw

CC: T. M. Davis

**LANDFARM RESULTS**

MISSISSIPPI FOREST PRODUCTS LABORATORY

TRD  
SOW  
H. Phillips  
RPH

Telex 785045  
Fax (601) 325-8126

P.O. Drawer FP  
Mississippi State, MS 39762-5724  
Phone (601) 325-2116

February 14, 1990

RECEIVED

FEB 20 1990

ENVIRONMENTAL AFFAIRS

Mr. Chuck Davis  
Southern Wood Piedmont  
P. O. Box 5447  
Spartanburg, SC 29304

Dear Chuck:

Please find enclosed the information on soil samples from your Wilmington units. The sample designations are:

- 900129 (1-3) = LF#1, Log 8572 (samples 223, 224, 225)
- 900129 (4-6) = LF#2, Log 8573 (samples 226, 227, 228)

In comparison with 891113 (1-6), PAH's for LF#1 are down for the 0-3" level but are up for the 9-12" and 21-24" levels. PAH's are down significantly for all the levels of LF#2.

PCP: PCP concentrations have remained unchanged for all the levels of LF#1 but have dropped sharply for all the levels of LF#2.

Nutrient: All the nutrient levels are in good shape. PH level of LF#2 could be improved by addition of lime.

Bacteria counts: Population of microorganisms has gone up sharply for LF#2 but have remained unchanged for LF#1. Over all number of acclimated bacteria is in very good shape for both units.

We will be glad to answer any questions that you may have on these data.

Sincerely,



Hamid Borazjani  
Research Scientist  
(601) 325-3106

HB/dg

enclosure



Listed below are chloride ion concentration, pH, C/N ratio, and total organic carbon, nitrogen and phosphorus results from the Wilmington soil samples.

MFPL#	Site		C(ug/g)	N(ug/g)	P(ug/g)	C/N	Cl(ug/g)	pH
	ID	Depth						
900129-1	LF#1	0-3"	24476	704.3	354.3	34.75	14.1	6.66
900129-4	LF#2	0-3"	29398	919.6	377.5	31.97	22.7	6.30

dg

Land Farming Group  
 Forest Products Laboratory  
 Miss. State University

Time: 15:39:26  
 Date: 02/05/90

-----  
 Micro. Analyses Results for Site or Site-Batch Samples  
 -----

SITEID	SUFFIX	DAY	LOAD	SUB.	AVG. ACA COUNTS	AVG. PDA COUNTS	AVG. PDAA COUNTS	AVG. C COUNTS	AVG. P COUNTS	AVG. C+P COUNTS	AVG. SEA COUNTS	AVG. NA COUNTS
900129	1	----	----	----	30000.	2700000.	70000.	2200000.	2500000.	2400000.	----	2700000.
900129	4	----	----	----	40000.	3100000.	80000.	2500000.	3000000.	3000000.	----	2900000.

Key:

ACA = Actinonycete Agar (Actinomyces)

PDA = Potato Dextrose Agar (Bacteria)

PDAA = Potato Dextrose + Antibiotics (Fungi)

NA = Nutrient Agar (Bacteria)

C = NA + 20ppm Creosote (Creosote acclimated Bacteria)

P = NA + 5ppm Pentachlorophenol (PCP acclimated Bacteria)

CP = NA + 20ppm Creosote + 5ppm PCP (Creosote & PCP acclimated Bacteria)

SEA = Soil Extract Agar (Bacteria)

Analyst:       Aunde Maddy      

Verified:       Boony Ken

Land Treatment Group  
 Forest Products Laboratory  
 Miss. State University

Time: 14:19:04  
 Date: 02/09/90

PAH Analysis Results in ug per G

I.D.	Site	Suffix	Day	Ld	S	Naph.	2-Met	1-Met	Biph.	Acthy	Acthe	Diben	Flore	Phen.	Anthr	Carba	Fluor	Pyren	12-Bz	Chrys	Ben-a	Bghi
10138	900129	1A	-----	--		8	6	0	0	11	6	9	22	57	199	31	168	111	71	73	0	0
10139	900129	1B	-----	--		8	0	0	0	9	7	10	24	73	220	44	211	137	0	86	0	0
10140	900129	2A	-----	--		6	4	0	0	4	3	6	13	30	129	28	53	43	27	80	39	0
10141	900129	2B	-----	--		5	4	0	0	3	3	6	11	33	178	27	93	84	45	108	35	0
10142	900129	3A	-----	--		2	2	0	0	0	0	3	7	17	75	85	21	16	15	13	0	0
10143	900129	3B	-----	--		0	0	0	0	0	0	0	2	10	24	6	26	20	19	14	0	0
10144	900129	4A	-----	--		11	13	0	0	6	5	23	55	124	652	196	120	95	73	73	0	0
10145	900129	4B	-----	--		7	7	0	0	9	6	14	40	84	404	100	140	112	79	78	0	0
10146	900129	5A	-----	--		3	0	0	0	4	0	0	3	18	35	7	78	88	50	97	51	0
10147	900129	5B	-----	--		3	0	0	0	6	4	3	5	41	63	16	126	100	58	108	63	0
10148	900129	6A	-----	--		0	0	0	0	0	0	0	0	0	2	0	7	6	0	0	0	0
10149	900129	6B	-----	--		0	0	0	0	0	2	0	2	0	11	0	19	14	0	5	0	0

Naph. = Naphthalene  
 2-Met = 2-Methylnaphthalene  
 1-Met = 1-Methylnaphthalene  
 Biph. = Biphenyl  
 Acthy = Acenaphthylene  
 Acthe = Acenaphthene  
 I.D. = Sample Number

Diben = Dibenzofuran  
 Flore = Fluorene  
 Phen. = Phenanthrene  
 Anthr = Anthracene  
 Carba = Carbazole  
 Fluor = Fluoranthene  
 Site = Site Name

Pyren = Pyrene  
 12-bz = 1,2 Benzanthracene  
 Chrys = Chrysene  
 Ben-a = Benzo-a-pyrene  
 Bghi = Benzo-ghi-perylene  
 UG = microgram  
 Sfx = Suffix  
 S = Subscript

Soilbl = Soil Blank  
 Reclev = Recovery Levels  
 Rec = Recovery  
 G = Gram  
 UG per G = Parts per Million  
 MDL = Method Detection Limit  
 Ld = Percent Load  
 UG per L = Parts per Billion

- Note: 1) Values of 0.0 indicate None Detected down to the specified Method Detection Limit (MDL).  
 2) Glassware Wash (GWW) and Solvent Blank (SOLVBL) values are in Total micrograms.  
 3) This GC/PID analysis is a quantitation procedure for samples with known histories.  
 It does not provide absolute identification of components.

Analyst: Mary E. Hummer  
 Verified: David A. Stibel

Land Treatment Group  
 Forest Products Laboratory  
 Miss. State University

Time: 14:21:05  
 Date: 02/09/90

PAH Analysis Results in ug per G

I.D.	Site	Suffix	Day	Ld	S	Naph.	2-Met	1-Met	Biph.	Acthy	Acthe	Diben	Flore	Phen.	Anthr	Carba	Fluor	Pyren	12-Bz	Chrys	Ben-a	Bghi
10150	900129	RECOVERY	-----	--		37	42	47	47	52	49	50	63	68	69	64	76	74	52	101	32	55
10151	900129	RECLEVEL	-----	--		50	53	54	50	52	46	48	51	50	50	53	51	50	50	51	50	50
10152	900129	SOILBLK	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10153	900129	SOLVBLK	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10154	900129	GMW	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10155	900129	MDL	-----	--		1	1	1	1	1	1	1	1	1	1	4	2	2	4	9	18	55

Naph. = Naphthalene	Diben = Dibenzofuran	Pyren = Pyrene	Soilbl = Soil Blank
2-Met = 2-Methylnaphthalene	Flore = Fluorene	12-bz = 1,2 Benzanthracene	Reclv = Recovery Levels
1-Met = 1-Methylnaphthalene	Phen. = Phenanthrene	Chrys = Chrysene	Rec = Recovery
Biph. = Biphenyl	Anthr = Anthracene	Ben-a = Benzo-a-pyrene	G = Gram
Acthy = Acenaphthylene	Carba = Carbazole	Bghi = Benzo-ghi-perylene	UG per G = Parts per Million
Acthe = Acenaphthene	Fluor = Fluoranthene	UG = microgram	MDL = Method Detection Limit
I.D. = Sample Number	Site = Site Name	Sfx = Suffix	Ld = Percent Load
		S = Subscript	UG per L = Parts per Billion

- Note: 1) Values of 0.0 indicate None Detected down to the specified Method Detection Limit (MDL).  
 2) Glassware Wash (GMW) and Solvent Blank (SOLVBL) values are in Total micrograms.  
 3) This GC/PID analysis is a quantitation procedure for samples with known histories.  
 It does not provide absolute identification of components.

Analyst: Mary F. Wainwright  
 Verified: David A. Stovel

Group and Total PAH Results in ug per G

I.D.#	Siteid	Suffix	Day	Load	Subscript	Bicyclics	Tricyclics	Tetracyclics	Pentacyclics	Total PAH's
10138	900129	1A	---	---	--	13.6	334.9	423.0	0.0	771.5
10139	900129	1B	---	---	--	7.7	386.0	433.7	0.0	827.4
10140	900129	2A	---	---	--	10.1	212.8	202.6	38.6	464.1
10141	900129	2B	---	---	--	8.7	262.7	329.7	34.6	635.6
10142	900129	3A	---	---	--	4.1	186.1	65.6	0.0	255.8
10143	900129	3B	---	---	--	0.0	41.6	79.1	0.0	120.7
10144	900129	4A	---	---	--	24.0	1060.1	361.8	0.0	1446.0
10145	900129	4B	---	---	--	13.8	656.5	407.4	0.0	1077.6
10146	900129	5A	---	---	--	2.8	67.6	312.5	50.7	433.5
10147	900129	5B	---	---	--	3.2	138.6	391.1	63.0	595.8
10148	900129	6A	---	---	--	0.0	1.9	12.2	0.0	14.1
10149	900129	6B	---	---	--	0.0	15.7	36.9	0.0	52.6

Key:

<u>Bicyclics:</u>	<u>Tricyclics:</u>	<u>Tetracyclics:</u>	<u>Pentacyclics:</u>
Naphthalene	Acenaphthylene	Fluoranthene	Benzo-a-pyrene
2-Methylnaphthalene	Acenaphthene	Pyrene	Benzo-ghi-perylene
1-Methylnaphthalene	Dibenzofuran	1,2-Benzanthracene	
Biphenyl	Fluorene	Chrysene	
	Phenanthrene		
	Anthracene		
	Carbazole		

Land Treatment Group  
Forest Products Laboratory  
Miss. State University

Date: 02/09/90  
Time: 8:20:42

-----  
PCP Analysis Results in ug per G  
=====

SITEID	SUFFIX	DAY	LOAD	SUBSCRIP	PCP	I.D.#
900129	1A	----	----	----	2.93	10138
900129	1B	----	----	----	2.74	10139
900129	2A	----	----	----	2.52	10140
900129	2B	----	----	----	2.57	10141
900129	3A	----	----	----	1.12	10142
900129	3B	----	----	----	1.12	10143
900129	4A	----	----	----	4.22	10144
900129	4B	----	----	----	4.34	10145
900129	5A	----	----	----	8.34	10146
900129	5B	----	----	----	6.7	10147
900129	6A	----	----	----	0.777	10148
900129	6B	----	----	----	1.08	10149
900129	RECOVERY	----	----	----	18.3	10150
900129	RECLEVEL	----	----	----	18.	10151
900129	SOILBLK	----	----	----	0.	10152
900129	SOLVBLK	----	----	----	0.	10153
900129	GWV	----	----	----	0.	10154
900129	MDL	----	----	----	0.2	10155

Key: GWV = Glassware Wash  
MDL = Method Detection Limit

Note: Values of 0.0 indicate None Detected above the specified  
Method Detection Limit.

Analyst: *Karyn W. Harnage*

Verified: *David A. Stahl*

MISSISSIPPI FOREST PRODUCTS LABORATORY

Telex 785045  
Fax (601) 325-8126

P.O. Drawer FP  
Mississippi State, MS 39762-5724  
Phone (601) 325-2116

RECEIVED  
APR 30 1990

ENVIRONMENTAL AFFAIRS

April 25, 1990

Mr. Chuck Davis  
Southern Wood Piedmont  
P. O. Box 5447  
Spartanburg, SC 29304

Dear Chuck:

Please find enclosed the information on the soil samples from your Wilmington units. The sample designations are:

- 900406 (1-3) = LF#1, Log 8709 (samples 230, 231, 232)
- 900406 (4-6) = LF#2, Log 8710 (samples 233, 234, 235)
- 900407-7 = Creo/soil LF#1 and 2 composite

In comparison with 900129 (1-6), PAH's are down significantly for all the levels of LF#1 and 2 except (0-3") of LF#1.

PCP: With the exception of (9-12") of LF#2, PCP concentrations have also dropped for all the levels of LF#1 and 2.

Nutrients: Nitrogen levels are down for both units. Addition of any kind of fertilizer could bring the level up to the proper concentration. Chloride ion and pH levels have remained relatively unchanged for both units.

Bacteria counts: Population of bacteria, as well as fungi, have gone up significantly for both units, especially for LF#1.

We will be glad to answer any questions you may have on these data.

Sincerely,

Hamid Borazjani  
Research Scientist  
(601) 325-3106

HB/dg

enclosure

fmD  
S.B.W.  
EM  
H.P.R.W.

Land Treatment Group  
 Forest Products Laboratory  
 Miss. State University

Time: 11:10:33  
 Date: 04/24/90

PAH Analysis Results in ug per G

I.D.	Site	Suffix	Day	Ld	S	Naph.	2-Met	1-Met	Biph.	Acthy	Acthe	Diben	Flore	Phen.	Anthr	Carba	Fluor	Pyren	12-Bz	Chrys	Ben-a	Bghi
10366	900406	1A	-----	--		4	0	0	0	0	0	0	0	54	190	54	63	52	87	57	90	0
10367	900406	1B	-----	--		9	12	0	0	0	0	25	0	138	579	170	67	55	82	54	37	0
10368	900406	2A	-----	--		2	0	0	0	0	0	0	0	13	18	0	38	31	25	25	16	0
10369	900406	2B	-----	--		3	0	0	0	0	0	0	0	12	21	0	40	36	23	28	18	0
10370	900406	3A	-----	--		0	0	0	0	0	0	0	0	3	3	0	10	7	6	5	0	0
10371	900406	3B	-----	--		0	0	0	0	0	0	0	0	2	3	0	5	5	8	6	0	0
10372	900406	4A	-----	--		8	0	0	0	0	0	0	0	59	219	85	77	65	52	61	42	0
10373	900406	4B	-----	--		7	5	0	0	0	0	6	0	36	150	48	98	98	109	73	38	0
10374	900406	5A	-----	--		14	5	0	4	0	0	5	0	20	47	15	38	34	45	28	22	14
10375	900406	5B	-----	--		9	4	0	0	0	0	5	0	27	100	33	36	30	44	28	21	19
10376	900406	6A	-----	--		0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
10377	900406	6B	-----	--		0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
10378	900406	7A	-----	--		77	176	103	18	20	510	459	809	2280	1562	418	1256	744	237	232	55	0
10379	900406	7B	-----	--		80	253	164	35	32	807	743	1349	3279	3204	902	1784	1343	336	335	79	0

Naph. = Naphthalene  
 2-Met = 2-Methylnaphthalene  
 1-Met = 1-Methylnaphthalene  
 Biph. = Biphenyl  
 Acthy = Acenaphthylene  
 Acthe = Acenaphthene  
 I.D. = Sample Number

Diben = Dibenzofuran  
 Flore = Fluorene  
 Phen. = Phenanthrene  
 Anthr = Anthracene  
 Carba = Carbazole  
 Fluor = Fluoranthene  
 Site = Site Name

Pyren = Pyrene  
 12-bz = 1,2 Benzanthracene  
 Chrys = Chrysene  
 Ben-a = Benzo-a-pyrene  
 Bghi = Benzo-ghi-perylene  
 UG = microgram  
 Sfx = Suffix  
 S = Subscript

Soilbl = Soil Blank  
 Reclv = Recovery Levels  
 Rec = Recovery  
 G = Gram  
 UG per G = Parts per Million  
 MDL = Method Detection Limit  
 Ld = Percent Load  
 UG per L = Parts per Billion

- Note: 1) Values of 0.0 indicate None Detected down to the specified Method Detection Limit (MDL).  
 2) Glassware Wash (GWW) and Solvent Blank (SOLVBL) values are in Total micrograms.  
 3) This GC/FID analysis is a quantitation procedure for samples with known histories.  
 It does not provide absolute identification of components.

Analyst: Mary F. Hays  
 Verified: David A. Hotel



Land Treatment Group  
 Forest Products Laboratory  
 Miss. State University

Time: 13:14:57  
 Date: 04/20/90

PAH Analysis Results in ug per G

I.D.	Site	Suffix	Day	Ld	S	Naph.	2-Met	1-Met	Biph.	Acthy	Acthe	Diben	Flore	Phen.	Anthr	Carba	Fluor	Pyren	12-Bz	Chrys	Ben-a	Bghi
10380	900406	RECOVERY	-----	--		43	43	47	44	46	45	52	58	65	67	65	73	71	69	73	40	77
10381	900406	RECLEVEL	-----	--		50	53	54	50	52	46	48	51	50	50	53	51	50	50	51	50	50
10382	900406	SOILBLK	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10383	900406	SOLVBLK	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10384	900406	GW	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10385	900406	KDL	-----	--		1	1	1	1	2	2	2	2	3	3	4	3	3	4	3	5	11

Naph. = Naphthalene  
 2-Met = 2-Methylnaphthalene  
 1-Met = 1-Methylnaphthalene  
 Biph. = Biphenyl  
 Acthy = Acenaphthylene  
 Acthe = Acenaphthene  
 I.D. = Sample Number

Diben = Dibenzofuran  
 Flore = Fluorene  
 Phen. = Phenanthrene  
 Anthr = Anthracene  
 Carba = Carbazole  
 Fluor = Fluoranthene  
 Site = Site Name

Pyren = Pyrene  
 12-bz = 1,2 Benzanthracene  
 Chrys = Chrysene  
 Ben-a = Benzo-a-pyrene  
 Bghi = Benzo-ghi-perylene  
 UG = microgram  
 Sfx = Suffix  
 S = Subscript

Soilbl = Soil Blank  
 Reclev = Recovery Levels  
 Rec = Recovery  
 G = Gram  
 UG per G = Parts per Million  
 MDL = Method Detection Limit  
 Ld = Percent Load  
 UG per L = Parts per Billion

- Note: 1) Values of 0.0 indicate None Detected down to the specified Method Detection Limit (MDL).  
 2) Glassware Wash (GW) and Solvent Blank (SOLVBL) values are in Total micrograms.  
 3) This GC/PID analysis is a quantitation procedure for samples with known histories.  
 It does not provide absolute identification of components.

Analyst: Mary E. Hanning  
 Verified: David A. Stahl

Group and Total PAH Results in ug per G

I.D./	Siteid	Suffix	Day	Load	Subscript	Bicyclics	Tricyclics	Tetracyclics	Pentacyclics	Total PAH's
10366	900406	1A	---	---	--	4.2	298.9	260.5	90.1	653.7
10367	900406	1B	---	---	--	20.5	912.5	257.9	36.5	1227.4
10368	900406	2A	---	---	--	2.5	31.1	118.8	15.9	168.3
10369	900406	2B	---	---	--	3.2	33.0	127.8	17.7	181.7
10370	900406	3A	---	---	--	0.0	6.5	28.3	0.0	34.7
10371	900406	3B	---	---	--	0.0	5.2	23.5	* 0.0	28.7
10372	900406	4A	---	---	--	8.0	362.4	255.5	42.3	668.2
10373	900406	4B	---	---	--	12.4	239.4	378.4	37.6	667.9
10374	900406	5A	---	---	--	22.6	86.6	144.7	36.0	289.9
10375	900406	5B	---	---	--	12.9	165.0	139.0	39.7	356.6
10376	900406	6A	---	---	--	0.0	3.9	0.0	0.0	3.9
10377	900406	6B	---	---	--	0.0	0.0	6.0	0.0	6.0
10378	900406	7A	---	---	--	373.1	6057.7	2469.8	54.7	8955.3
10379	900406	7B	---	---	--	532.1	10314.5	3798.3	79.2	14724.2

Key:

<u>Bicyclics:</u>	<u>Tricyclics:</u>	<u>Tetracyclics:</u>	<u>Pentacyclics:</u>
Naphthalene	Acenaphthylene	Fluoranthene	Benzo-a-pyrene
2-Methylnaphthalene	Acenaphthene	Pyrene	Benzo-g-hi-perylene
1-Methylnaphthalene	Dibenzofuran	1,2-Benzanthracene	
Biphenyl	Fluorene	Chrysene	
	Phenanthrene		
	Anthracene		
	Carbazole		

Land Treatment Group  
Forest Products Laboratory  
Miss. State University

Date: 04/19/90  
Time: 12:44:54

-----  
PCP Analysis Results in ug per G  
=====

SITEID	SUFFIX	DAY	LOAD	SUBSCRIP	PCP	I.D.#
900406	1A	----	----	----	1.59	10366
900406	1B	----	----	----	1.64	10367
900406	2A	----	----	----	1.8	10368
900406	2B	----	----	----	1.44	10369
900406	3A	----	----	----	0.431	10370
900406	3B	----	----	----	0.433	10371
900406	4A	----	----	----	3.55	10372
900406	4B	----	----	----	4.83	10373
900406	5A	----	----	----	9.02	10374
900406	5B	----	----	----	9.49	10375
900406	6A	----	----	----	0.605	10376
900406	6B	----	----	----	0.46	10377
900406	7A	----	----	----	2.72	10378
900406	7B	----	----	----	3.93	10379
900406	RECOVERY	----	----	----	17.1	10380
900406	RECLEVEL	----	----	----	18.	10381
900406	SOILBLK	----	----	----	0.	10382
900406	SOLVBLK	----	----	----	0.	10383
900406	GWW	----	----	----	0.	10384
900406	MDL	----	----	----	0.283	10385

Key: GWW = Glassware Wash  
MDL = Method Detection Limit

Note: Values of 0.0 indicate None Detected above the specified Method Detection Limit.

Analyst: *Kary E. Harnigan*

verified: *David A. Stahl*

Listed below are chloride ion concentration, pH, C/N ratio, and total organic carbon, nitrogen, and phosphorus results from the Wilmington soil samples.

MFPL#	Site ID	Depth	C(ug/g)	N(ug/g)	P(ug/g)	C/N	Cl(ug/g)	pH
900406-1	LF#1	(0-3")	15642.3	453.2	476.9	34.52	20	6.6
900406-4	LF#2	(0-3")	21222.6	661.7	390.4	32.07	12	6.59
900406-7	LF#1+2	Creo/soil	35662.7	976.5	117.5	36.52	26.9	6.74

dg

Land Farming Group  
Forest Products Laboratory  
Miss. State University

Time: 14:37:09  
Date: 04/23/90

-----  
Micro. Analyses Results for Site or Site-Batch Samples  
=====

SITEID	SUFFIX	DAY	LOAD	SUB.	AVG. ACA COUNTS	AVG. PDA COUNTS	AVG. PDAA COUNTS	AVG. C COUNTS	AVG. P COUNTS	AVG. C+P COUNTS	AVG. SEA COUNTS	AVG. NA COUNTS
900406	LF/1	----	----	1	10000.	3900000.	130000.	3000000.	2800000.	2500000.	----	3900000.
900406	LF/2	----	----	4	10000.	3100000.	130000.	2900000.	2700000.	2200000.	----	3600000.
900406	LF/1&2	----	----	7	100.	630000.	30000.	600000.	450000.	500000.	----	670000.

Key:

ACA = Actinomycete Agar (Actinomycetes)

PDA = Potato Dextrose Agar (Bacteria)

PDAA = Potato Dextrose + Antibiotics (Fungi)

NA = Nutrient Agar (Bacteria)

C = NA + 20ppm Creosote (Creosote acclimated Bacteria)

P = NA + 5ppm Pentachlorophenol (PCP acclimated Bacteria)

CP = NA + 20ppm Creosote + 5ppm PCP (Creosote & PCP acclimated Bacteria)

SEA = Soil Extract Agar (Bacteria)

Analyst: Shelley Hare

Verified: Boyan A. L...

VMA  
MSP  
EJH  
EJE

# MISSISSIPPI FOREST PRODUCTS LABORATORY

Telex 785045  
Fax (601) 325-8126

P.O. Drawer FP  
Mississippi State, MS 39762-5724  
Phone (601) 325-2116

May 17, 1990

Mr. Chuck Davis  
Southern Wood Piedmont  
P. O. Box 5447  
Spartanburg, SC 29304

Dear Chuck:

Please find enclosed the information on the soil samples from your Wilmington units. The sample designations are:

900430 (1-3) = LF#1, Log 8744 (samples 236, 237, 238)  
900430\* (4-6) = LF#2, Log 8745 (samples 239, 240, 241)

In comparison with 900406 (1-6), PAH's are up significantly for all the levels of LF#1 and LF#2.

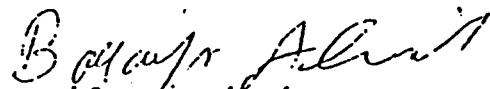
PCP - PCP concentrations have gone up significantly for 0-3" of LF#1 and 21-24" of LF#2. PCP levels have dropped sharply for 9-12" of LF#2. Concentrations for the other levels have remained unchanged.

Nutrients - Nitrogen, carbon, phosphorus, C/N ratio, and pH levels are in excellent shape for both units.

Bacteria counts - Bacteria, fungi, and actinomycete population have remained consistently high for both units.

We will be glad to answer any questions you may have on these data.

Sincerely,



Hamid Borazjani  
Research Scientist  
(601) 325-3106

HB/dg

enclosure

Land Treatment Group  
 Forest Products Laboratory  
 Miss. State University

Time: 8:51:38  
 Date: 05/11/90

PAH Analysis Results in ug per G

I.D.	Site	Suffix	Day	Ld	S	Naph.	2-Met	1-Met	Biph.	Acthy	Acthe	Diben	Flore	Phen.	Anthr	Carba	Fluor	Pyren	12-Bz	Chrys	Ben-a	Bghi
10433	900430	1A	-----	--		8	12	6	3	8	90	45	142	334	730	152	551	347	133	123	32	11
10434	900430	1B	-----	--		19	27	7	10	9	76	102	284	510	3188	765	368	238	114	105	33	12
10435	900430	2A	-----	--		3	2	0	0	3	0	3	6	22	75	21	49	35	37	22	12	9
10436	900430	2B	-----	--		4	3	0	0	3	0	5	12	32	147	46	43	32	36	23	14	9
10437	900430	3A	-----	--		0	0	0	0	0	0	0	0	2	7	0	11	9	7	6	0	0
10438	900430	3B	-----	--		0	0	0	0	0	0	0	0	0	0	0	9	7	4	4	0	0
10439	900430	4A	-----	--		14	10	0	3	10	5	21	60	126	528	148	143	106	85	64	31	18
10440	900430	4B	-----	--		6	4	0	0	6	6	7	22	76	149	38	168	119	88	65	33	12
10441	900430	5A	-----	--		4	3	0	0	5	2	4	10	24	97	24	40	35	49	29	21	13
10442	900430	5B	-----	--		12	13	0	4	6	3	25	71	113	703	246	46	37	49	35	22	13
10443	900430	6A	-----	--		0	0	0	0	0	0	0	0	0	9	0	5	4	5	4	0	0
10444	900430	6B	-----	--		0	0	0	0	0	0	0	0	0	0	0	4	3	3	0	0	0

Naph. = Naphthalene  
 2-Met = 2-Methylnaphthalene  
 1-Met = 1-Methylnaphthalene  
 Biph. = Biphenyl  
 Acthy = Acenaphthylene  
 Acthe = Acenaphthene  
 I.D. = Sample Number

Diben = Dibenzofuran  
 Flore = Fluorene  
 Phen. = Phenanthrene  
 Anthr = Anthracene  
 Carba = Carbazole  
 Fluor = Fluoranthene  
 Site = Site Name

Pyren = Pyrene  
 12-bz = 1,2 Benzanthracene  
 Chrys = Chrysene  
 Ben-a = Benzo-a-pyrene  
 Bghi = Benzo-ghi-erylene  
 UG = microgram  
 Sfx = Suffix  
 S = Subscript

Soilbl = Soil Blank  
 Reclev = Recovery Levels  
 Rec = Recovery  
 G = Gram  
 UG per G = Parts per Million  
 MDL = Method Detection Limit  
 Ld = Percent Load  
 UG per L = Parts per Billion

- Note: 1) Values of 0.0 indicate None Detected down to the specified Method Detection Limit (MDL).  
 2) Glassware Wash (GWW) and Solvent Blank (SOLVBL) values are in Total micrograms.  
 3) This GC/FID analysis is a quantitation procedure for samples with known histories.  
 It does not provide absolute identification of components.

Analyst: Mary E. Harrigan  
 verified: David A. Stahl

Land Treatment Group  
 Forest Products Laboratory  
 Miss. State University

Time: 9:46:23  
 Date: 05/10/90

PAH Analysis Results in ug per G

I.D.	Site	Suffix	Day	Ld	S	Naph.	2-Met	1-Met	Biph.	Acthy	Acthe	Diben	Flore	Phen.	Anthr	Carba	Fluor	Pyren	12-Bz	Chrys	Ben-a	Bghi
10445	900430	RECOVERY	-----	--		44	45	50	45	50	46	49	53	58	58	64	65	62	46	56	34	31
10446	900430	RECLEVEL	-----	--		50	53	54	50	52	46	48	51	50	50	53	51	50	50	51	50	50
10447	900430	SOILBLK	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10448	900430	SOLVBLK	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10449	900430	GW	-----	--		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10450	900430	MDL	-----	--		0	1	1	1	1	1	1	1	1	1	2	1	1	2	2	3	4

Naph. = Naphthalene  
 2-Met = 2-Methylnaphthalene  
 1-Met = 1-Methylnaphthalene  
 Biph. = Biphenyl  
 Acthy = Acenaphthylene  
 Acthe = Acenaphthene  
 I.D. = Sample Number

Diben = Dibenzofuran  
 Flore = Fluorene  
 Phen. = Phenanthrene  
 Anthr = Anthracene  
 Carba = Carbazole  
 Fluor = Fluoranthene  
 Site = Site Name

Pyren = Pyrene  
 12-bz = 1,2 Benzanthracene  
 Chrys = Chrysene  
 Ben-a = Benzo-a-pyrene  
 Bghi = Benzo-ghi-perylene  
 UG = microgram  
 Sfx = Suffix  
 S = Subscript

Soilbl = Soil Blank  
 Reclev = Recovery Levels  
 Rec = Recovery  
 G = Gram  
 UG per G = Parts per Million  
 MDL = Method Detection Limit  
 Ld = Percent Load  
 UG per L = Parts per Billion

- Note: 1) Values of 0.0 indicate None Detected down to the specified Method Detection Limit (MDL).  
 2) Glassware Wash (GW) and Solvent Blank (SOLVBL) values are in Total micrograms.  
 3) This GC/FID analysis is a quantitation procedure for samples with known histories.  
 It does not provide absolute identification of components.

Analyst: Mary F. Hannigan  
 verified: David A. Stotel



Group and Total PAH Results in ug per G

I.D./	Siteid	Suffix	Day	Load	Subscript	Bicyclics	Tricyclics	Tetracyclics	Pentacyclics	Total PAH's
10433	900430	1A	---	---	--	28.4	1501.3	1154.3	43.8	2727.8
10434	900430	1B	---	---	--	63.2	4933.2	825.5	45.3	5867.2
10435	900430	2A	---	---	--	4.6	129.9	143.0	21.5	299.0
10436	900430	2B	---	---	--	7.1	243.7	134.9	23.7	409.5
10437	900430	3A	---	---	--	0.0	9.2	32.7	0.0	41.9
10438	900430	3B	---	---	--	0.0	0.0	23.8	0.0	23.8
10439	900430	4A	---	---	--	26.4	897.4	399.0	48.7	1371.6
10440	900430	4B	---	---	--	9.8	303.0	440.2	45.3	798.2
10441	900430	5A	---	---	--	6.6	163.7	153.8	33.3	357.4
10442	900430	5B	---	---	--	29.9	1167.0	166.4	34.9	1398.2
10443	900430	6A	---	---	--	0.0	9.1	18.5	0.0	27.5
10444	900430	6B	---	---	--	0.0	0.0	10.3	0.0	10.3

Key:

<u>Bicyclics:</u>	<u>Tricyclics:</u>	<u>Tetracyclics:</u>	<u>Pentacyclics:</u>
Naphthalene	Acenaphthylene	Fluoranthene	Benzo-a-pyrene
2-Methylnaphthalene	Acenaphthene	Pyrene	Benzo-ghi-perylene
1-Methylnaphthalene	Dibenzofuran	1,2-Benzanthracene	
Biphenyl	Fluorene	Chrysene	
	Phenanthrene		
	Anthracene		
	Carbazole		

Land Treatment Group  
Forest Products Laboratory  
Miss. State University

Date: 05/10/90  
Time: 8:41:22

-----  
PCP Analysis Results in ug per G  
=====

SITEID	SUFFIX	DAY	LOAD	SUBSCRIP	PCP	I.D.#
900430	1A	----	----	----	6.17	10433
900430	1B	----	----	----	3.27	10434
900430	2A	----	----	----	0.846	10435
900430	2B	----	----	----	1.53	10436
900430	3A	----	----	----	0.696	10437
900430	3B	----	----	----	0.	10438
900430	4A	----	----	----	4.12	10439
900430	4B	----	----	----	3.72	10440
900430	5A	----	----	----	3.96	10441
900430	5B	----	----	----	4.43	10442
900430	6A	----	----	----	1.25	10443
900430	6B	----	----	----	1.24	10444
900430	RECOVERY	----	----	----	15.4	10445
900430	RECLEVEL	----	----	----	18.	10446
900430	SOILBLK	----	----	----	0.	10447
900430	SOLVBLK	----	----	----	0.	10448
900430	GW	----	----	----	0.	10449
900430	MDL	----	----	----	0.533	10450

Key: GW = Glassware Wash  
MDL = Method Detection Limit

Note: Values of 0.0 indicate None Detected above the specified  
Method Detection Limit.

Analyst: *Mary E. Hennigan*  
verified: *David A. Stahl*

# MISSISSIPPI FOREST PRODUCTS LABORATORY

Telex 785045  
Fax (601) 325-8126

P.O. Drawer FP  
Mississippi State, MS 39762-5724  
Phone (601) 325-2116

Listed below are chloride ion concentration, pH, C/N ratio, and total organic carbon, nitrogen and phosphorus results from the Wilmington soil samples.

MFPL #	Site ID	Depth	C(ug/g)	N(ug/g)	P(ug/g)	C/N	Cl(ug/g)	pH
900430-1	LF#1	0-3"	25011.9	819.2	359	30.53	.27	7.08
900430-4	LF#2	0-3"	28362.4	1099.7	408.8	25.79	24	7.41

Land Farming Group  
Forest Products Laboratory  
Miss. State University

Time: 8:05:02  
Date: 05/09/90

-----  
Micro. Analyses Results for Site or Site-Batch Samples  
-----

SITEID	SUFFIX	DAY	LOAD	SUB.	AVG. ACA COUNTS	AVG. PDA COUNTS	AVG. PDAA COUNTS	AVG. C COUNTS	AVG. P COUNTS	AVG. C+P COUNTS	AVG. SEA COUNTS	AVG. NA COUNTS
900430	1	----	----	----	50000.	2800000.	130000.	2300000.	2200000.	2500000.	----	2800000.
900430	4	----	----	----	2.34E7	3700000.	100000.	2900000.	3400000.	3400000.	----	3900000.

Key:

ACA = Actinomycete Agar (Actinomycetes)

PDA = Potato Dextrose Agar (Bacteria)

PDAA = Potato Dextrose + Antibiotics (Fungi)

NA = Nutrient Agar (Bacteria)

C = NA + 20ppm Creosote (Creosote acclimated Bacteria)

P = NA + 5ppm Pentachlorophenol (PCP acclimated Bacteria)

CP = NA + 20ppm Cresote + 5ppm PCP (Creosote & PCP acclimated Bacteria)

SEA = Soil Extract Agar (Bacteria)

Analyst: Runde Maddux

Verified: Boyer Allen

**CAPE FEAR RIVER SAMPLE RESULTS**

**SL SAVANNAH LABORATORIES**  
& ENVIRONMENTAL SERVICES, INC.

July  
TMD  
MDP } Summary

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

**RECEIVED**

JAN 17 1992

LOG NO: S1-38049

Received: 19 DEC 91

Ms. Sandra Watson  
Southern Wood Piedmont. (WI) ENVIRONMENTAL AFFAIRS  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

Project: Wilmington, NC  
Sampled By: Client

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
38049-1	#44 State Port (# 9151)	12-17-91
38049-2	#45 Greenfield Creek (# 9192)	12-17-91
38049-3	#46 SWP Old Slip (# 9193)	12-17-91
38049-4	#47 US 74 New Bridge (# 9194)	12-17-91

PARAMETER	38049-1	38049-2	38049-3	38049-4
KOO1 (Method 8270)				
2-Chlorophenol, mg/l	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND
Trichlorophenols, mg/l	ND	ND	ND	ND
p-Chloro-m-cresol, mg/l	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	ND
Acenaphthene, mg/l	ND	ND	ND	ND
Acenaphthylene, mg/l	ND	ND	ND	ND
Phenanthrene, mg/l	ND	ND	ND	ND
Anthracene, mg/l	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND
Benzo(b,k)fluoranthene, mg/l	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND
Dibenzo(a,h)anthracene, mg/l	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND
Dilution factor	1	1	1	1

**SL SAVANNAH LABORATORIES**  
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

**RECEIVED**

LOG NO: S1-38049

Received: 19 DEC 91

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

JAN 17 1992

ENVIRONMENTAL AFFAIRS

Project: Wilmington, NC  
Sampled By: Client

REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED			
38049-1	#44 State Port (# 9151)	12-17-91			
38049-2	#45 Greenfield Creek (# 9192)	12-17-91			
38049-3	#46 SWP Old Slip (# 9193)	12-17-91			
38049-4	#47 US 74 New Bridge (# 9194)	12-17-91			
PARAMETER	38049-1	38049-2	38049-3	38049-4	
Arsenic, mg/l	ND	ND	ND	ND	
Chromium, mg/l	ND	ND	ND	ND	
Copper, mg/l	ND	ND	ND	ND	

# SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 854-7800 • FAX (912) 352-0165

**RECEIVED**  
JAN 17 1992

LOG NO: S1-38049

Received: 19 DEC 91

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

ENVIRONMENTAL ANALYSIS

Project: Wilmington, NC  
Sampled By: Client

## REPORT OF RESULTS

Page 3

### LOG NO SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES

38049-5 Detection Limits  
38049-6 Accuracy (mean % recovery)  
38049-7 Precision (% RPD)  
38049-8 EPA Method Number  
38049-9 Analyst Initials

PARAMETER	38049-5	38049-6	38049-7	38049-8	38049-9
K001 (Method 8270)					
2-Chlorophenol, mg/l	0.010	79 %	5.1 %	8270	NHD
Phenol, mg/l	0.010	80 %	6.3 %	8270	NHD
2,4-Dimethylphenol, mg/l	0.010	82 %	3.7 %	8270	NHD
Trichlorophenols, mg/l	0.010	70 %	4.3 %	8270	NHD
p-Chloro-m-cresol, mg/l	0.010	80 %	5.0 %	8270	NHD
Tetrachlorophenols, mg/l	0.010	70 %	11 %	8270	NHD
2,4-Dinitrophenol, mg/l	0.050	40 %	20 %	8270	NHD
Pentachlorophenol, mg/l	0.050	46 %	8.7 %	8270	NHD
Naphthalene, mg/l	0.010	70 %	5.7 %	8270	NHD
Acenaphthene, mg/l	0.010	81 %	1.2 %	8270	NHD
Acenaphthylene, mg/l	0.010	82 %	6.1 %	8270	NHD
Phenanthrene, mg/l	0.010	86 %	2.3 %	8270	NHD
Anthracene, mg/l	0.010	86 %	1.2 %	8270	NHD
Fluoranthene, mg/l	0.010	81 %	9.9 %	8270	NHD
Chrysene, mg/l	0.010	86 %	4.7 %	8270	NHD
Benzo (a) Anthracene, mg/l	0.010	83 %	4.8 %	8270	NHD
Benzo (b,k) fluoranthene, mg/l	0.010	86 %	4.4 %	8270	NHD
Benzo (a) pyrene, mg/l	0.010	81 %	8.7 %	8270	NHD
Indeno (1,2,3-cd) pyrene, mg/l	0.010	70 %	4.3 %	8270	NHD
Dibenzo (a,h) anthracene, mg/l	0.010	71 %	7.1 %	8270	NHD
Carbazole, mg/l	0.010	---	---	8270	NHD



**SL SAVANNAH LABORATORIES**  
 & ENVIRONMENTAL SERVICES, INC.

**RECEIVED**

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

JAN 17 1992

LOG NO: S1-38049

Ms. Sandra Watson  
 Southern Wood Piedmont (WI)  
 P.O. Box 5477, I-85 and Sigsbee Rd.  
 Spartanburg, SC 29304

Received: 19 DEC 91  
 ENVIRONMENTAL AFFAIRS

Project: Wilmington, NC  
 Sampled By: Client

REPORT OF RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
38049-10	Dates Analyzed
PARAMETER	38049-10
KO01 (Method 8270)	
2-Chlorophenol	01.09.92
Phenol	01.09.92
2,4-Dimethylphenol	01.09.92
Trichlorophenols	01.09.92
p-Chloro-m-cresol	01.09.92
Tetrachlorophenols	01.09.92
2,4-Dinitrophenol	01.09.92
Pentachlorophenol	01.09.92
Naphthalene	01.09.92
Acenaphthene	01.09.92
Acenaphthylene	01.09.92
Phenanthrene	01.09.92
Anthracene	01.09.92
Fluoranthene	01.09.92
Chrysene	01.09.92
Benzo (a) Anthracene	01.09.92
Benzo (b,k) fluoranthene	01.09.92
Benzo (a) pyrene	01.09.92
Indeno (1,2,3-cd) pyrene	01.09.92
Dibenzo (a,h) anthracene	01.09.92
Carbazole	01.09.92
Arsenic	01.14.92
Chromium	12.30.91
Copper	12.30.91

**SL SAVANNAH LABORATORIES**  
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

**RECEIVED**  
JAN 17 1992

LOG NO: S1-38049

Received: 19 DEC 91

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

ENVIRONMENTAL SERVICES

Project: Wilmington, NC  
Sampled By: Client

REPORT OF RESULTS

Page 6

LOG NO      SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES

-----  
38049-11      Report Completion Date  
-----

PARAMETER      38049-11  
-----

Date Reported      01.15.92  
-----

Methods: EPA SW-846

*J. W. Andrews*

\_\_\_\_\_  
J. W. Andrews, Ph. D.

# SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404  
 2846 Industrial Plaza Drive, Tallahassee, FL 32301  
 414 Southwest 12th Avenue, Deerfield Beach, FL 33442  
 900 Lakeside Drive, Mobile, AL 36693  
 6712 Benjamin Road, Suite 100, Tampa, FL 33634

Phone: (912) 354-7858  
 Phone: (904) 878-3994  
 Phone: (305) 421-7400  
 Phone: (205) 666-6633  
 Phone: (813) 885-7427

Fax (912) 352-0165  
 Fax (904) 878-9504  
 Fax (305) 421-2584  
 Fax (205) 666-6696  
 Fax (813) 885-7049

J. NUMBER		PROJECT NUMBER	PROJECT NAME	MATRIX TYPE	REQUIRED ANALYSES										PAGE	OF			
Client Name		TELEPHONE/FAX NO.		AQUEOUS MATRIX NONAQUEOUS MATRIX OIL MATRIX AIR MATRIX	K001 CU-CR-AS										<input checked="" type="checkbox"/> STANDARD TAT <input type="checkbox"/> EXPEDITED TAT	REPORT DUE DATE	* SUBJECT TO RUSH FEES		
Client Address		CITY, STATE, ZIP CODE																	
Sampler(s) Name(s)		CLIENT PROJECT MANAGER																	
SAMPLING DATE		SAMPLE IDENTIFICATION																	
TIME				NUMBER OF CONTAINERS SUBMITTED															
1/17	8:00 AM	#44	St. Johns ports.	2	1	1													
1/17	8:45 AM	#45	Greenfield Creek	2	1	1													
1/17	8:30 AM	#46	SWP old slip	2	1	1													
1/17	8:45 AM	#47	US76 New Bridge	2	1	1													
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME				
S. Bond		1/17	2:30	H.O. Phillips		12/17	10:15	H.O. Phillips		12/17	submit for rush								
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME				
H.O. Phillips		12/16	10:15	H.O. Phillips		12/17	submit for rush												
FOR SAVANNAH LABORATORY USE ONLY										LABORATORY REMARKS									
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.													
H. Bond		12/19/91	10:15	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		38049													

**RECEIVED**  
 JAN 17 1992  
 ENVIRONMENTAL AFFAIRS

SAVANNAH LABORATORY COPY

AUG 27 1990

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

**ENVIRONMENTAL AFFAIRS**

LOG NO: S0-09218

Received: 01 AUG 90

Ms. Sandra Watson  
 Southern Wood Piedmont (WI)  
 P.O. Box 5477, I-85 and Sigsbee Rd.  
 Spartanburg, SC 29304

CC: Steve Blevins

**REPORT OF RESULTS**

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY			
09218-1	#40 State Port Authority ("A" 8817)	Client			
09218-2	#41 Greenfield Creek ("B" 8818)				
09218-3	#42 SWP Old Slip ("C" 8819)				
09218-4	#43 US #74 New Bridge ("D" 8820)				
PARAMETER	09218-1	09218-2	09218-3	09218-4	
KO01 (Method 8270)					
2-Chlorophenol, mg/l	ND	ND	ND	ND	
Phenol, mg/l	ND	ND	ND	ND	
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	
Trichlorophenols, mg/l	ND	ND	ND	ND	
p-Chloro-m-cresol, mg/l	ND	ND	ND	ND	
Tetrachlorophenols, mg/l	ND	ND	ND	ND	
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	
Pentachlorophenol, mg/l	ND	ND	ND	ND	
Naphthalene, mg/l	ND	ND	ND	ND	
Acenaphthene, mg/l	ND	ND	ND	ND	
Acenaphthylene, mg/l	ND	ND	ND	ND	
Phenanthrene, mg/l	ND	ND	ND	ND	
Anthracene, mg/l	ND	ND	ND	ND	
Fluoranthene, mg/l	ND	ND	ND	ND	
Chrysene, mg/l	ND	ND	ND	ND	
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	
Benzo(b,k)fluoranthene, mg/l	ND	ND	ND	ND	
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	
Dibenzo(a,h)anthracene, mg/l	ND	ND	ND	ND	
Carbazole, mg/l	ND	ND	ND	ND	
Dilution factor	1	1	1	1	

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ENVIRONMENTAL AFFAIRS

LOG NO: SO-09218

Received: 01 AUG 90

Ms. Sandra Watson  
 Southern Wood Piedmont (WI)  
 P.O. Box 5477, I-85 and Sigsbee Rd.  
 Spartanburg, SC 29304

CC: Steve Blevins

REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY			
09218-1	#40 State Port Authority ("A" 8817)	Client			
09218-2	#41 Greenfield Creek ("B" 8818)				
09218-3	#42 SWP Old Slip ("C" 8819)				
09218-4	#43 US #74 New Bridge ("D" 8820)				
PARAMETER	09218-1	09218-2	09218-3	09218-4	
Arsenic, mg/l	ND	ND	ND	ND	
Chromium, mg/l	ND	0.046	0.011	ND	
Copper, mg/l	ND	0.052	ND	ND	

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ENVIRONMENTAL AFFAIRS

LOG NO: S0-09218

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Ms. Sandra Watson  
 Southern Wood Piedmont (WI)  
 P.O. Box 5477, I-85 and Sigsbee Rd.  
 Spartanburg, SC 29304

CC: Steve Blevins

REPORT OF RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY		
09218-5	Detection Limits	Client		
09218-6	Accuracy (Mean % Recovery)			
09218-7	Precision (% RPD)			
PARAMETER		09218-5	09218-6	09218-7
K001 (Method 8270)				
2-Chlorophenol, mg/l		0.010	87 %	5.8 %
Phenol, mg/l		0.010	44 %	2.3 %
2,4-Dimethylphenol, mg/l		0.010	75 %	15 %
Trichlorophenols, mg/l		0.010	97 %	0 %
p-Chloro-m-cresol, mg/l		0.010	74 %	9.5 %
Tetrachlorophenols, mg/l		0.010	91 %	14 %
2,4-Dinitrophenol, mg/l		0.050	86 %	8.2 %
Pentachlorophenol, mg/l		0.050	78 %	23 %
Naphthalene, mg/l		0.010	65 %	6.2 %
Acenaphthene, mg/l		0.010	93 %	12 %
Acenaphthylene, mg/l		0.010	75 %	15 %
Phenanthrene, mg/l		0.010	98 %	2.0 %
Anthracene, mg/l		0.010	87 %	0 %
Fluoranthene, mg/l		0.010	112 %	6.3 %
Chrysene, mg/l		0.010	103 %	4.9 %
Benzo(a)Anthracene, mg/l		0.010	102 %	15 %
Benzo(b,k)fluoranthene, mg/l		0.010	118 %	19 %
Benzo(a)pyrené, mg/l		0.010	126 %	19 %
Indeno(1,2,3-cd)pyrene, mg/l		0.010	133 %	25 %
Dibenzo(a,h)anthracene, mg/l		0.010	136 %	27 %
Carbazole, mg/l		0.010	112 %	30 %
Arsenic, mg/l		0.010	88 %	0 %
Chromium, mg/l		0.010	86 %	4.7 %

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5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

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LOG NO: S0-09218

Received: 01 AUG 90

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd. ENVIRONMENTAL AFFAIRS  
Spartanburg, SC 29304

CC: Steve Blevins

REPORT OF RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY		
09218-5	Detection Limits	Client		
09218-6	Accuracy (Mean % Recovery)			
09218-7	Precision (% RPD)			
PARAMETER		09218-5	09218-6	09218-7
Copper, mg/l		0.025	98 %	5.1 %

**SL SAVANNAH LABORATORIES**  
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LOG NO: S0-09218

AUG 27 1990

Received: 01 AUG 90

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd. ENVIRONMENTAL AFFAIRS  
Spartanburg, SC 29304

CC: Steve Blevins

REPORT OF RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY
09218-8	Report Completion Date	Client
PARAMETER	09218-8	
Date Reported	08.21.90	

Methods: EPA SW-846  
ND = Not Detected

*J. W. Andrews*

J. W. Andrews, Ph. D.



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AUG 27 1990

## SL

### SAVANNAH LABORATORIES AND ENVIRONMENTAL SERVICES, INC. ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

ENVIRONMENTAL

Savannah Division  
5102 LaFolche Avenue  
Savannah, GA 31404  
Phone: (912) 994-7858

JOB NO.		P.O. NO.		PROJECT NAME		REQUIRED ANALYSES										PAGE	OF	
CLIENT NAME <b>S.W.P. Co.</b>				TELEPHONE <b>919-762-9678</b>		ACQUEOUS MATRIX NONACQUEOUS MATRIX											STANDARD	<input checked="" type="checkbox"/>
CLIENT ADDRESS <b>P.O. Box 450 Wilmington NC 28402</b>																	RUSH	<input type="checkbox"/>
CLIENT PROJECT MANAGER <b>H.O. Phillips</b>																	DATE REPORT REQUESTED	_____
SAMPLING		SAMPLE ID															REMARKS	
DATE	TIME																	
<b>7-31-90</b>	<b>8:00 AM</b>	<b>40 State Road</b>																
<b>7-31-90</b>	<b>8:15 AM</b>	<b>41 Greenfield Creek</b>																
<b>7-31-90</b>	<b>8:30 AM</b>	<b>42 SWP Old Slip</b>																
<b>7-31-90</b>	<b>8:45 AM</b>	<b>4574 New Bridge</b>																
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)				DATE/TIME		RELINQUISHED BY: (SIGNATURE)				DATE/TIME				
<i>[Signature]</i>		<b>7-31-90</b>																
		DATE/TIME		RECEIVED BY: (SIGNATURE)				DATE/TIME		RELINQUISHED BY: (SIGNATURE)				DATE/TIME				
LABORATORY USE ONLY																		
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE/TIME		CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.		LABORATORY REMARKS:										
<i>[Signature]</i>		<b>8/1/90 2:00 pm</b>		YES NO		<b>9218</b>												

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

**SAVANNAH LABORATORIES  
AND ENVIRONMENTAL SERVICES, INC.**

5102 LaRoche Avenue (31404)  
P. O. Box 13548 • Savannah, GA 31416-0548  
(912) 354-7858

AWW  
TMD  
MDP  
File



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LOG NO: SO-03604

FEB 26 1990

Received: 01 FEB 90

ENVIRONMENTAL AFFAIRS

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

CC: Steve Blevins

Project: Cape Fear River

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
03604-1	# 36 State Ports Authority ("A" # 8588)	Client
03604-2	# 37 Greenfield Creek ("B" # 8589)	
03604-3	# 38 SWP Old Slip ("C" # 8590)	
03604-4	# 39 US # 74 New Bridge ("D" 8591)	

PARAMETER	03604-1	03604-2	03604-3	03604-4
KO01 (Method 8270)				
2-Chlorophenol, mg/l	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND
Trichlorophenols, mg/l	ND	ND	ND	ND
p-Chloro-m-cresol, mg/l	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	ND
Acenaphthene, mg/l	ND	ND	ND	ND
Acenaphthylene, mg/l	ND	ND	ND	ND
Phenanthrene, mg/l	ND	ND	ND	ND
Anthracene, mg/l	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND
Benzo(b,k)fluoranthene, mg/l	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND
Dibenzo(a,h)anthracene, mg/l	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND
Dilution factor	1	1	1	1

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

**SAVANNAH LABORATORIES**  
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(912) 354-7858



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LOG NO: S0-03604

Received: 01 FEB 90

FEB 26 1990

ENVIRONMENTAL ANALYSIS

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

CC: Steve Blevins

Project: Cape Fear River

REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY			
03604-1	/ 36 State Ports Authority ("A" # 8588)	Client			
03604-2	/ 37 Greenfield Creek ("B" # 8589)				
03604-3	/ 38 SWP Old Slip ("C" # 8590)				
03604-4	/ 39 US # 74 New Bridge ("D" 8591)				
PARAMETER		03604-1	03604-2	03604-3	03604-4
Arsenic, mg/l		ND	ND	ND	ND
Chromium, mg/l		ND	ND	ND	ND
Copper, mg/l		ND	ND	ND	ND

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

**SAVANNAH LABORATORIES  
AND ENVIRONMENTAL SERVICES, INC.**

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LOG NO: S0-03604

FEB 26 1990

Received: 01 FEB 90

**ENVIRONMENTAL AFFAIRS**

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

CC: Steve Blevins

Project: Cape Fear River

**REPORT OF RESULTS**

Page 3

LOG NO	SAMPLE DESCRIPTION , QC SAMPLES	SAMPLED BY		
03604-5	Detection Limits	Client		
03604-6	Accuracy (mean % recovery)			
03604-7	Precision (% RPD)			
PARAMETER		03604-5	03604-6	03604-7
KOOL (Method 8270)				
2-Chlorophenol, mg/l		0.01	101 %	8.9 %
Phenol, mg/l		0.01	60 %	30 %
2,4-Dimethylphenol, mg/l		0.01	112 %	9.8 %
Trichlorophenols, mg/l		0.01	100 %	3.0 %
p-Chloro-m-cresol, mg/l		0.01	96 %	2.1 %
Tetrachlorophenols, mg/l		0.01	121 %	6.6 %
2,4-Dinitrophenol, mg/l		0.05	105 %	14 %
Pentachlorophenol, mg/l		0.05	86 %	21 %
Naphthalene, mg/l		0.01	98 %	4.1 %
Acenaphthene, mg/l		0.01	103 %	0.0 %
Acenaphthylene, mg/l		0.01	113 %	0.88 %
Phenanthrene, mg/l		0.01	98 %	3.1 %
Anthracene, mg/l		0.01	91 %	4.4 %
Fluoranthene, mg/l		0.01	85 %	12 %
Chrysene, mg/l		0.01	103 %	1.9 %
Benzo(a)Anthracene, mg/l		0.01	98 %	0.0 %
Benzo(b,k)fluoranthene, mg/l		0.01	89 %	12 %
Benzo(a)pyrene, mg/l		0.01	86 %	7.0 %
Indeno(1,2,3-cd)pyrene, mg/l		0.01	59 %	3.4 %
Dibenzo(a,h)anthracene, mg/l		0.01	98 %	9.2 %
Carbazole, mg/l		0.01	88 %	4.5 %

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

**SAVANNAH LABORATORIES**  
**AND ENVIRONMENTAL SERVICES, INC.**  
5102 LaRoche Avenue (31404)  
P. O. Box 13548 • Savannah, GA 31416-0548  
(912) 354-7858



**RECEIVED**

LOG NO: SO-03604

Received: 01 FEB 90

FEB 26 1990

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

ENVIRONMENTAL AFFAIRS

CC: Steve Blevins

Project: Cape Fear River

REPORT OF RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION , QC SAMPLES	SAMPLED BY		
03604-5	Detection Limits	Client		
03604-6	Accuracy (mean % recovery)			
03604-7	Precision (% RPD)			
PARAMETER		03604-5	03604-6	03604-7
Arsenic, mg/l		0.010	103 %	0.97 %
Chromium, mg/l		0.010	86 %	0 %
Copper, mg/l		0.010	93 %	0 %

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

# SAVANNAH LABORATORIES AND ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue (31404)  
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FEB 26 1990

LOG NO: S0-03604

Received: 01 FEB 90

## ENVIRONMENTAL AFFAIRS

Ms. Sandra Watson  
Southern Wood Piedmont (WI)  
P.O. Box 5477, I-85 and Sigsbee Rd.  
Spartanburg, SC 29304

CC: Steve Blevins

Project: Cape Fear River

### REPORT OF RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION , QC SAMPLES	SAMPLED BY
03604-8	Report Completion Date	Client
PARAMETER	03604-8	
Date Reported	02.21.90	

Methods: EPA SW-846  
ND = Not Detected

*J. W. Andrews*

J. W. Andrews, Ph. D.

From:

Southern Wood Piedmont  
Foot of Greenfield Street  
P. O. Box 450  
Wilmington, N. C. 28402

RECEIVED 1-31-90

FEB 26 1990

ENVIRONMENTAL AFFAIRS

CAPE FEAR RIVER Samples.

TO:

SAVANNAH LAB & ENVIRONMENTAL SER. Div.

SAVANNAH LABORATORIES  
AND ENVIRONMENTAL SERVICES, INC.  
P.O. BOX 13548 • SAVANNAH, GA. 31416  
5102 LAROCHE AVE. • SAVANNAH, GA. 31404

Phone: on Arrival  
354 7858

Log #

- "A" 8588
- "B" 8589
- "C" 8590
- "D" 8591

Sample #	36	State Ports Authy	C/F. RIVER
✓	✓	37 Greenfield Creek	MOUTH of C/F. RIVER
✓	✓	38 S.W.P. Old Slip	C/F. RIVER
✓	✓	39 US #74 New Bridge	C/F RIVER

Samples # 36 & 37 DOWN STREAM  
 ✓ # 38 & 39 UP STREAM

CPYS: Chuck DAVIS - Sandra Watson  
ELAINE Hedrick

Log #s FROM SANDRA WATSON

CONTACT:

Chuck DAVIS  
SWP. Co.  
P.O. Box 5447  
SPARTANBURG S.C. 29304  
Phone 1-803-599-1075

H.O. Phillips Sr  
Wilmington NC  
1-919-762-9678

3604

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**SAVANNAH LABORATORIES AND ENVIRONMENTAL SERVICES, INC.**  
ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Savannah Division  
5102 LaRoche Avenue  
Savannah, GA. 31404  
Phone: (912) 354-7858

FEB 26 1990

JOB NO.	P.O. NO.	PROJECT NAME	ENVIRONMENTAL AFFAIRS							PAGE	OF	
SAMPLER(S): (SIGNATURE) <i>HENRY O. Phillips Jr</i>			AQUEOUS MATRIX	NONAQUEOUS MATRIX	NUMBER OF CONTAINERS						1	1
CLIENT NAME/ADDRESS <i>Southern wood Piedmont Co.</i>											DATE REPORT REQUESTED	
CLIENT PROJECT MANAGER <i>W.O. Phillips</i>								STANDARD <input checked="" type="checkbox"/>				
								RUSH <input type="checkbox"/>				
SAMPLING			REMARKS									
DATE	TIME	SAMPLE ID										
<i>4/31/90</i>	<i>8:00 AM</i>	<i>#36 State Ports</i>	<input checked="" type="checkbox"/>	<i>2</i>		<i>KOOL, CCA</i>	<i>pu</i>	<i>Sundown</i>				
						<i>Watson</i>	<i>2/2/90</i>	<i>GF</i>				
<i>1-31-90</i>	<i>8:15 AM</i>	<i>#37 Greenfield Cr.</i>	<input checked="" type="checkbox"/>	<i>2</i>								
<i>1-31-90</i>	<i>8:30 AM</i>	<i>#38 SWP. old slip</i>	<input checked="" type="checkbox"/>	<i>2</i>								
<i>1-31-90</i>	<i>9:00 AM</i>	<i>#39 US #74 New Bridge</i>	<input checked="" type="checkbox"/>	<i>2</i>								
<i>All samples CAPR From River</i>												
RELINQUISHED BY: (SIGNATURE) <i>H.O. Phillips</i>			DATE/TIME <i>2/1/90 11:00 AM</i>	RECEIVED BY: (SIGNATURE)			DATE/TIME	RELINQUISHED BY: (SIGNATURE)			DATE/TIME	
LABORATORY USE ONLY												
RECEIVED FOR LABORATORY BY: (SIGNATURE) <i>Hlena Bonds</i>			DATE/TIME <i>2/1/90 9:45 am</i>	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	SL LOG NO. <i>3604</i>	LABORATORY REMARKS:					



## SAMPLE CONTAINER REQUEST FORM

The number, color-code preservative and container description for the analyses as requested are listed below. A summary of sampling instructions for general analysis categories is referenced on the reverse side.

AQUEOUS								NONAQUEOUS				COLOR PRESERVATIVE CODE			
	R		R												
liter n/m plastic	liter n/m glass w/TFE	500 ml m/m plastic	500 ml n/m glass	250 ml m/m plastic	250 ml m/m naigene	125 ml m/m amber glass w/TFE	100 ml m/m plastic	40 ml vial w/TFE		liter w/m glass	liter w/m plastic	500 ml w/m glass	500 ml w/m plastic	125 ml m/m amber glass w/TFE	100 ml w/m glass
	4			4											
	1			1											
<p style="font-size: 2em; transform: rotate(-45deg); opacity: 0.5;">                     Received 1/30/90                      Returned 1/31/90                      H. O. Phillips, Jr.                 </p>														Lab Pk Prep. by: <u>SS</u>	
														Lab Pk checked by: <u>LB</u>	
														Quantity of Lab Pks. Shipped: _____	
														SL Project Mgr.: _____	
														Sample Coordinator: _____	
														Comments: _____	
														NO. OF CONTAINERS SHIPPED	
														NO. OF CONTAINERS/SAMPLE	
														NO. OF TRIP BLANKS	
														NO. OF FIELD BLANKS	
														NO. OF EQUIPMENT BLANKS	
														GENERAL PARAMETERS	

Lab Pack Shipping Address Henry O. Phillips, Jr.  
214 Windemere Rd.  
Wilmington, NC 28405

Phone No: 919/791-2706

Date of Shipment: 1/26/90 Method of Shipment: UPS

Account No: \_\_\_\_\_ Project: Southern Wood - Wilmington

### PRESERVATIVE COLOR CODE KEY

- RED (R) CAUTION! STRONG OXIDIZER! CONTAINS NITRIC ACID. Avoid skin and eye contact. If contact is made FLUSH IMMEDIATELY with water.
- GREEN (G) CAUTION! CONTAINS SULFURIC ACID. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
- BLUE (B) CAUTION! STRONG CAUSTIC! CONTAINS SODIUM HYDROXIDE. Avoid skin and eye contact. If contact is made FLUSH IMMEDIATELY with water.
- PURPLE (P) No preservative added.
- TAN (T) Contains Zinc Acetate. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
- YELLOW (Y) Contains Sodium Thiosulfate. Sterilized container.
- LT. BLUE (LB) CAUTION! CONTAINS HYDROCHLORIC ACID. Avoid skin and eye contact. If contact is made FLUSH IMMEDIATELY with water.

DO NOT inhale vapors that may be caused from a chemical reaction between the preservative and sample. Collect sample in a well-ventilated area or use appropriate breathing apparatus. NEVER RINSE sample containers. If skin contact with preservatives occurs always wash hands IMMEDIATELY.

**MONITORING WELL RESULTS**

**SL SAVANNAH LABORATORIES**  
 & ENVIRONMENTAL SERVICES, INC.

*over TMD*

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

**RECEIVED**

NOV 26 1990

LOG NO: SO-12806

Received: 10 OCT 90

Ms. Sandra Watson  
 Southern Wood Piedmont (SP) ENVIRONMENTAL AFFAIRS  
 P. O. Box 5447  
 Spartanburg, SC 29304

CC: Mark Radecke

Project: Wilmington, NC

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY				
12806-1	MW-9 (# 9112) 10-9-90	Client				
12806-2	MW-8 (# 9113) 10-9-90					
12806-3	MW-7 (# 9114) 10-9-90					
12806-4	MW-6 (# 9115) 10-9-90					
12806-5	TB-1 10-9-90					
PARAMETER	12806-1	12806-2	12806-3	12806-4	12806-5	
<b>Semi Volatiles</b>						
Naphthalene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
2-Methylnaphthalene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
1-Methylnaphthalene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
1,1-Biphenyl, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Acenaphthylene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Acenaphthene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Dibenzofuran, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Fluorene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Phenanthrene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Anthracene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Carbazole, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Pyrene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Benzo(a)Anthracene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Chrysene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Benzo(a)pyrene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Benzo(g,h,i)perylene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Pentachlorophenol, mg/l	<0.050	<0.050	<0.050	<0.050	<0.050	
Fluoranthene, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	
Z R Surrogate-2FP (CL 21-100)	46 Z	36 Z	42 Z	25 Z	30 Z	

*Sandra,  
 Corrected copy of report  
 SO-12806. Change - 4 to  
 MW-6.*

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**& ENVIRONMENTAL SERVICES, INC.**

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ENVIRONMENTAL AFFAIRS

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Project: Wilmington, NC

REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
12806-1	MW-9 (# 9112) 10-9-90	Client
12806-2	MW-8 (# 9113) 10-9-90	
12806-3	MW-7 (# 9114) 10-9-90	
12806-4	MW-6 (# 9115) 10-9-90	
12806-5	TB-1 10-9-90	

PARAMETER	12806-1	12806-2	12806-3	12806-4	12806-5
% R Surrogate-PHL (CL 10-94)	26 %	22 %	64 %	38 %	34 %
% R Surrogate-NBZ (CL 35-114)	46 %	50 %	65 %	56 %	54 %
% R Surrogate-2FBP (CL 43-116)	46 %	45 %	64 %	59 %	50 %
% R Surrogate-TBP (CL 10-123)	58 %	55 %	50 %	72 %	67 %
% R Surrogate-TPH (CL 33-141)	60 %	46 %	66 %	65 %	69 %
Date Extracted	10.16.90	10.16.90	10.16.90	10.16.90	10.16.90
Date Analyzed	10.18.90	10.18.90	10.18.90	10.18.90	10.18.90
Nitrogen Series					
Total Kjeldahl Nitrogen-N, mg/l	6.7	10	7.2	11	<0.10
Nitrate + Nitrite-N, mg/l	<0.050	<0.050	<0.050	<0.050	<0.050
Total Nitrogen, mg/l	6.7	10	7.2	11	<0.10
Total Phosphorus, mg/l	0.35	0.51	0.47	1.0	<0.050
Suspended Solids, mg/l	30	220	130	68	<5.0
Total Organic Carbon, mg/l	20	26	22	13	<1.0
Chloride, mg/l	120	110	210	530	<1.0

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Spartanburg, SC 29304

NOV 26 1990

ENVIRONMENTAL SERVICES

CC: Mark Radecke

Project: Wilmington, NC

REPORT OF RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY				
12806-11	Matrix Spike (MS) Result/Dup	Client				
12806-12	MS Expected Value					
12806-13	MS % Recovery/Duplicate					
12806-14	MS % Recovery Limit					
12806-15	MS % RPD (Limit)					
PARAMETER	12806-11	12806-12	12806-13	12806-14	12806-15	
<b>Semi Volatiles</b>						
Naphthalene, mg/l	103/98	100	103/98 %	39-140 %	5.0(<40)%	
Acenaphthylene, mg/l	118/120	100	118/120 %	36-140 %	1.7(<40)%	
Acenaphthene, mg/l	105/109	100	105/109 %	46-118 %	3.7(<31)%	
Phenanthrene, mg/l	115/116	100	115/116 %	54-140 %	0.87(<40)%	
Anthracene, mg/l	113/111	100	113/111 %	40-140 %	1.8(<40)%	
Carbazole, mg/l	157/175	100	157/175 %	---	---	
Benzo(a)Anthracene, mg/l	121/120	100	121/120 %	29-140 %	0.83(<40)%	
Chrysene, mg/l	112/111	100	112/111 %	17-168 %	0.90(<48)%	
Benzo(a)pyrene, mg/l	119/122	100	119/122 %	25-160 %	2.5(<40)%	
Pentachlorophenol, mg/l	127/125	100	127/125 %	9-103 %	1.6(<50)%	
Fluoranthene, mg/l	100/112	100	100/112 %	26-140 %	11(<40)%	
<b>Nitrogen Series</b>						
Total Kjeldahl Nitrogen-N, mg/l	4.18/4.18	4.0	105/105 %	75-125 %	0(<40)%	
Nitrate + Nitrite-N, mg/l	.183/.184	0.20	91/92 %	75-125 %	1.1(<30)%	
Total Nitrogen, mg/l	---	---	---	---	---	
Total Phosphorus, mg/l	.514/.509	0.50	103/102 %	75/125 %	0.98(<30)%	
Suspended Solids, mg/l	---	---	---	---	---	
Total Organic Carbon, mg/l	124/126	100	124/126 %	60-140 %	1.6(<40)%	
Chloride, mg/l	4.65/4.93	5.0	93/99 %	75-125 %	6.3(<30)%	

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Ms. Sandra Watson  
Southern Wood Piedmont (SP)  
P. O. Box 5447  
Spartanburg, SC 29304

ENVIRONMENTAL AFFAIRS

CC: Mark Radecke

Project: Wilmington, NC

REPORT OF RESULTS

Page 6

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY
12806-16	Methods	Client
PARAMETER	12806-16	
Semi Volatiles		
Naphthalene	8270	
2-Methylnaphthalene	8270	
1-Methylnaphthalene	8270	
1,1-Biphenyl	8270	
Acenaphthylene	8270	
Acenaphthene	8270	
Dibenzofuran	8270	
Fluorene	8270	
Phenanthrene	8270	
Anthracene	8270	
Carbazole	8270	
Pyrene	8270	
Benzo(a)Anthracene	8270	
Chrysene	8270	
Benzo(a)pyrene	8270	
Benzo(g,h,i)perylene	8270	
Pentachlorophenol	8270	
Fluoranthene	8270	
Nitrogen Series		
Total Kjeldahl Nitrogen-N	351.2	
Nitrate + Nitrite-N	353.1	
Total Phosphorus	365.1	
Suspended Solids	160.2	
Total Organic Carbon	415.1	
Chloride	325.2	

Methods: EPA SW-846 & 40 CFR Part 136

*J. W. Andrews*

J. W. Andrews, Ph. D.

Laboratory locations in Savannah, GA • Mobile, AL • Tallahassee, FL • Deerfield Beach, FL

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ENVIRONMENTAL SERVICES

CC: Mark Radecke

Project: Wilmington, NC

## REPORT OF RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY				
12806-6	Method Blank (MB) Result	Client				
12806-7	Lab Control Standard (LCS) Result					
12806-8	LCS Expected Value					
12806-9	LCS % Recovery					
12806-10	LCS % Recovery Limits					
PARAMETER	12806-6	12806-7	12806-8	12806-9	12806-10	
<b>Semi Volatiles</b>						
Naphthalene, mg/l	<0.010	71	100	71 %	39-140 %	
2-Methylnaphthalene, mg/l	<0.010	---	---	---	---	
1-Methylnaphthalene, mg/l	<0.010	---	---	---	---	
1,1-Biphenyl, mg/l	<0.010	---	---	---	---	
Acenaphthylene, mg/l	<0.010	103	100	103 %	36-140 %	
Acenaphthene, mg/l	<0.010	101	100	101 %	46-118 %	
Dibenzofuran, mg/l	<0.010	---	---	---	---	
Fluorene, mg/l	<0.010	---	---	---	---	
Phenanthrene, mg/l	<0.010	114	100	114 %	54-140 %	
Anthracene, mg/l	<0.010	105	100	105 %	40-140 %	
Carbazole, mg/l	<0.010	---	---	---	---	
Pyrene, mg/l	<0.010	---	---	---	---	
Benzo(a)Anthracene, mg/l	<0.010	118	100	118 %	29-140 %	
Chrysene, mg/l	<0.010	105	100	105 %	17-168 %	
Benzo(a)pyrene, mg/l	<0.010	119	100	119 %	25-160 %	
Benzo(g,h,i)perylene, mg/l	<0.010	---	---	---	---	
Pentachlorophenol, mg/l	<0.050	77	100	77 %	9-103 %	
Fluoranthene, mg/l	<0.010	96	100	96 %	26-140 %	

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 & ENVIRONMENTAL SERVICES, INC.

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ENVIRONMENTAL SERVICES

CC: Mark Radecke

Project: Wilmington, NC

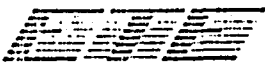
REPORT OF RESULTS

Page 4

LOG NO	SAMPLE DESCRIPTION , REPORT FOR LIQUID SAMPLES	SAMPLED BY
12806-6	Method Blank (MB) Result	Client
12806-7	Lab Control Standard (LCS) Result	
12806-8	LCS Expected Value	
12806-9	LCS % Recovery	
12806-10	LCS % Recovery Limits	

PARAMETER	12806-6	12806-7	12806-8	12806-9	12806-10
<b>Nitrogen Series</b>					
Total Kjeldahl Nitrogen-N, mg/l	<0.10	5.0	5.0	100 %	90-110 %
Nitrate + Nitrite-N, mg/l	<0.050	0.89	0.93	96 %	90-110 %
Total Nitrogen, mg/l	<0.10	---	---	---	---
Total Phosphorus, mg/l	<0.050	10.4	10	104 %	75-125 %
Suspended Solids, mg/l	<5.0	360	399	90 %	60-140 %
Total Organic Carbon, mg/l	<1.0	6.3	6.1	104 %	60-140 %
Chloride, mg/l	<1.0	211	222	95 %	90-110 %





# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	5	12	1990
	NO.			
	SHEET	1	OF	1

PROJECT NAME SWP Wilmington, N.C. PROJECT NO. 199-26-512

FIELD ACTIVITY SUBJECT: Sampling of wells

DESCRIPTION ON DAILY ACTIVITIES AND EVENTS:

MW-6 Sample # 40 log # 8659  
 Well depth 16' Water level 4.18 TOC  
 Vol. pumped Temp Conductivity PH  
1.9 19°C 2.04 6.41  
3.2 19°C 2.11 6.37  
5.7 19°C 2.12 6.29

MW-7 Sample # 41 log # 8660  
 Well depth 22' Water level 5.21' TOC  
 Vol. pumped Temp Conductivity PH  
2.7 19°C 1.06 6.20  
5.4 19°C 1.01 6.31  
 dry ~~1.0~~

MW-8 Sample # 42 log # 8661  
 Well depth 22' Water level 6.7' TOC  
 Vol. pumped Temp Conductivity PH  
2.5 19°C 1.65 5.98  
5.0 19°C 1.62 6.06  
7.5 19°C 1.59 6.07

VISITORS ON SITE:  
MW-9 on back

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS.

WEATHER CONDITIONS:

IMPORTANT TELEPHONE CALLS:

ETE PERSONNEL ON SITE Kevin Anderson *over*

SUPERVISOR: DATE: 7-12-90

MW - 9

Sample # 43

Log #

8662

well depth 22'

water level 6.17' TOL

vel. pumped

Temp

Conductivity

pH

2.5

18°C

.55

5.82

5.0

18°C

.55

5.83

7.5

18°C

.56

5.87



P.O. Box 1057  
 1445 Pisgan Church Rd.  
 Lexington, SC 29072  
 (803) 957-8270

0015

Chain-of Custody Record

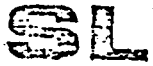
Environmental Technology Engineering, Inc.

PROJ. NO.		PROJECT NAME/LOCATION				NO. OF CONTAINERS	REMARKS														
4-00-512		Refer to JSA #																			
SAMPLERS: (Signature)						NO. OF CONTAINERS	REMARKS														
Kevin Anderson																					
STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION																
1	3-12	12:30		✓	Station 6 Sample # 40 (Z65F) 2																
2	3-12	13:00		✓	Station 7 Sample # 41 (Z66) 2																
3	3-12	13:40		✓	Station 8 Sample # 42 (Z66) 2																
4	3-12	14:15		✓	Station 9 Sample # 43 (Z66) 2																

Relinquished by: (Signature) Kevin Anderson	Date / Time 3-12-90 3:00 pm	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
------------------------------	-------------	---	-------------	---------

Original to Laboratory, copies to sampler and files.



SAVANNAH LABORATORIES AND ENVIRONMENTAL SERVICES, INC.  
ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

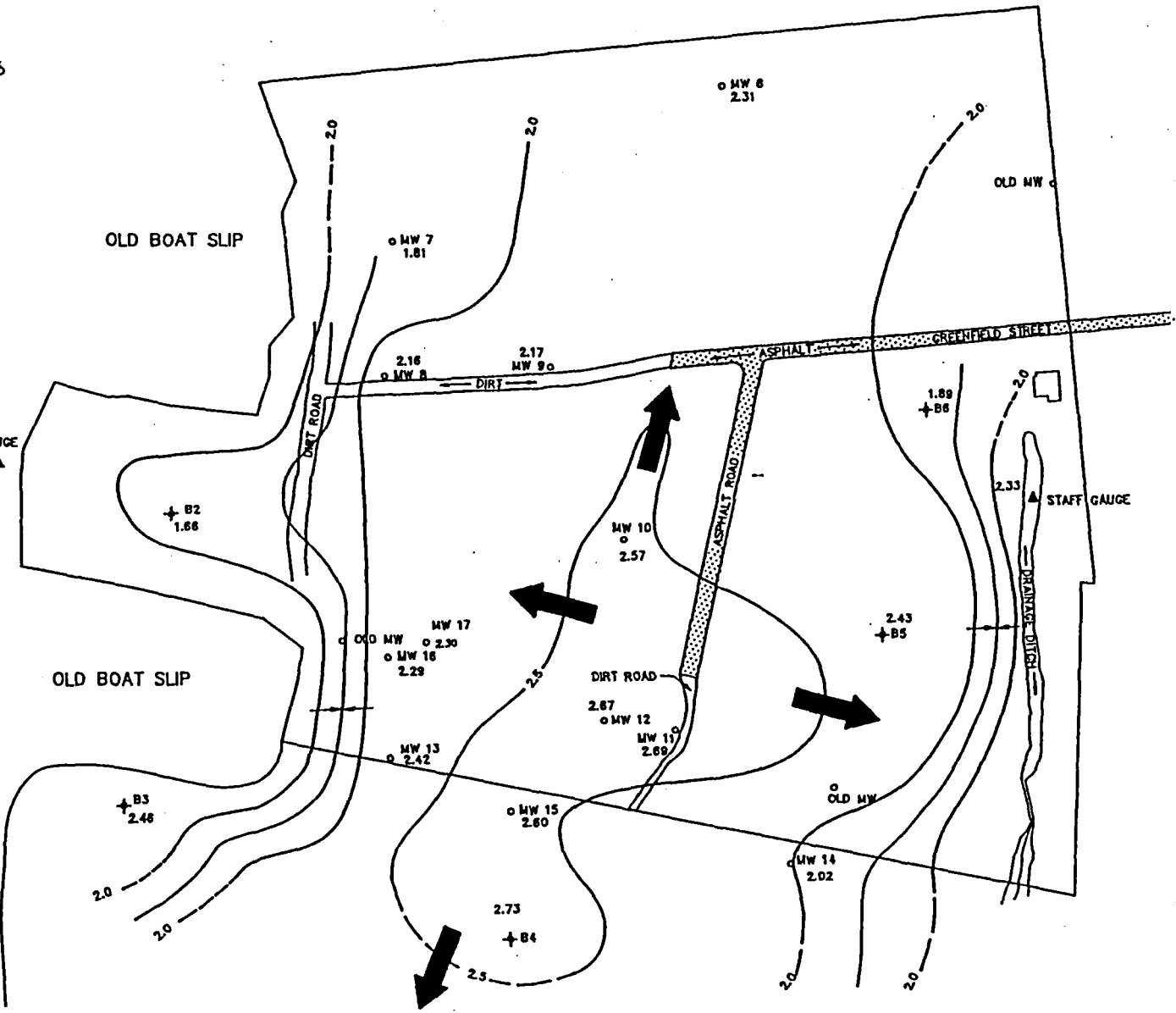
Division  
101 Steel Avenue  
Savannah, GA 31404  
Phone: (912) 354-7858

JOB NO.		P.O. NO.	PROJECT NAME	REQUIRED ANALYSES							PAGE	OF			
SAMPLER(S): (SIGNATURE)		CLIENT NAME/ADDRESS		AQUEOUS MATRIX	NONAQUEOUS MATRIX	NUMBER OF CONTAINERS	L.P.C. ANALYSIS	P.P.P. ANALYSIS					DATE REPORT REQUESTED		
CLIENT PROJECT MANAGER		SAMPLING											STANDARD	RUSH	
DATE	TIME	SAMPLE ID											REMARKS		
3/1/90	12:30 PM	# 40 - Well # 6				2	1	1							
3/1/90	1:00 PM	# 41 - Well # 7				2	1	1							
3/1/90	1:45 PM	# 42 - Well # 8				2	1	1							
3/1/90	2:15 PM	# 43 - Well # 9				2	1	1							
						8	4	4							
RELINQUISHED BY: (SIGNATURE)		DATE/TIME	RECEIVED BY: (SIGNATURE)		DATE/TIME	RELINQUISHED BY: (SIGNATURE)				DATE/TIME					
		3/1/90 1:00 PM													
LABORATORY USE ONLY															
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE/TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:									
			YES NO												



CAPE FEAR RIVER

STAFF GAUGE  
2.73 ▲



LEGEND

- PERMANENT MONITORING WELLS (12)
- ⊕ TEMPORARY MONITORING WELLS (5)
- ▲ STAFF GAUGE
- ⊥ STAGNATION POINT
- ➔ GROUND WATER FLOW DIRECTION
- CONTOUR INTERVAL = 0.5 ft.

POTENTIOMETRIC SURFACE MAP

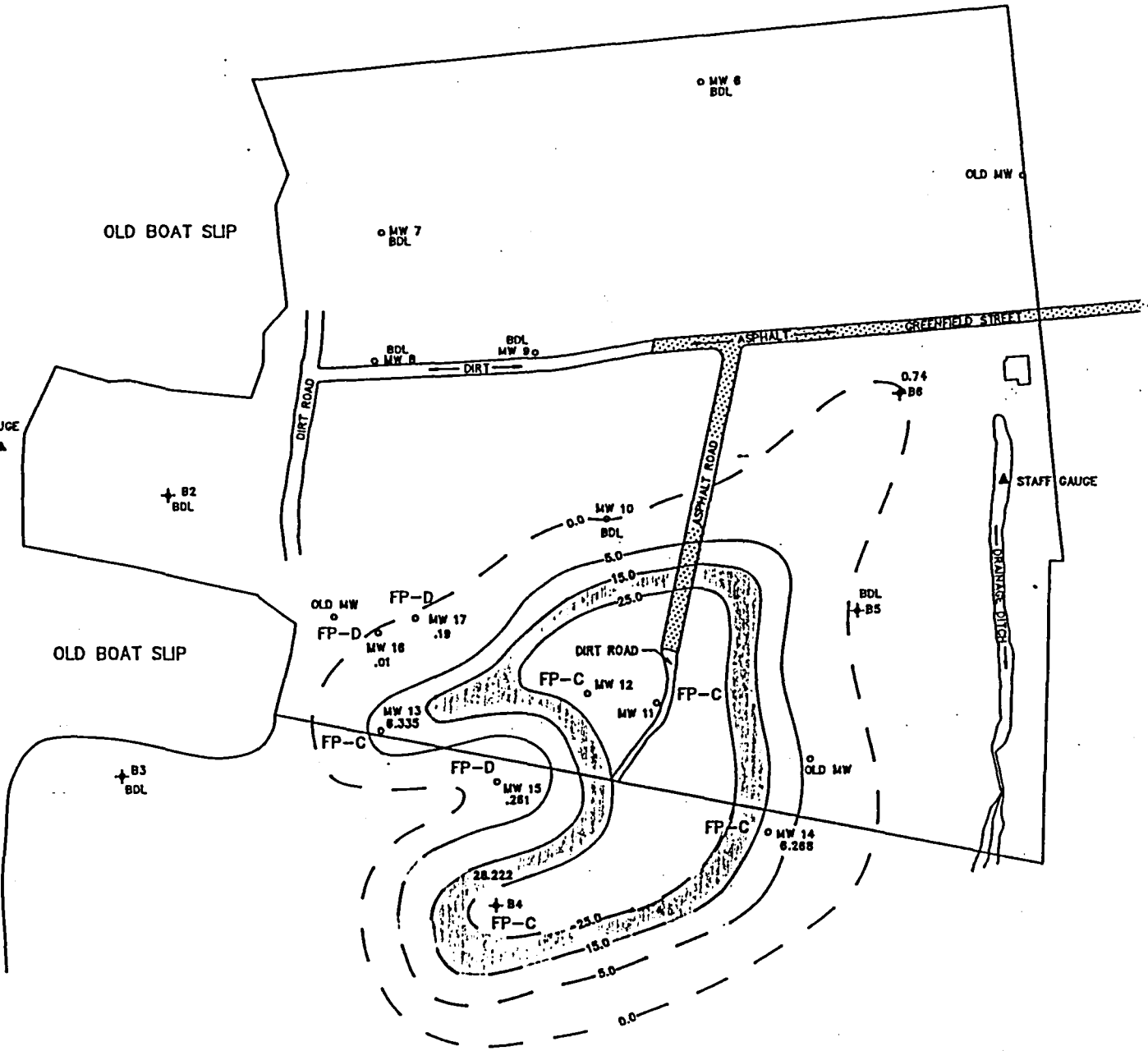
SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, NORTH CAROLINA



Environmental Technology Engineering, Inc.

CAPE FEAR RIVER

STAFF GAUGE



**LEGEND**

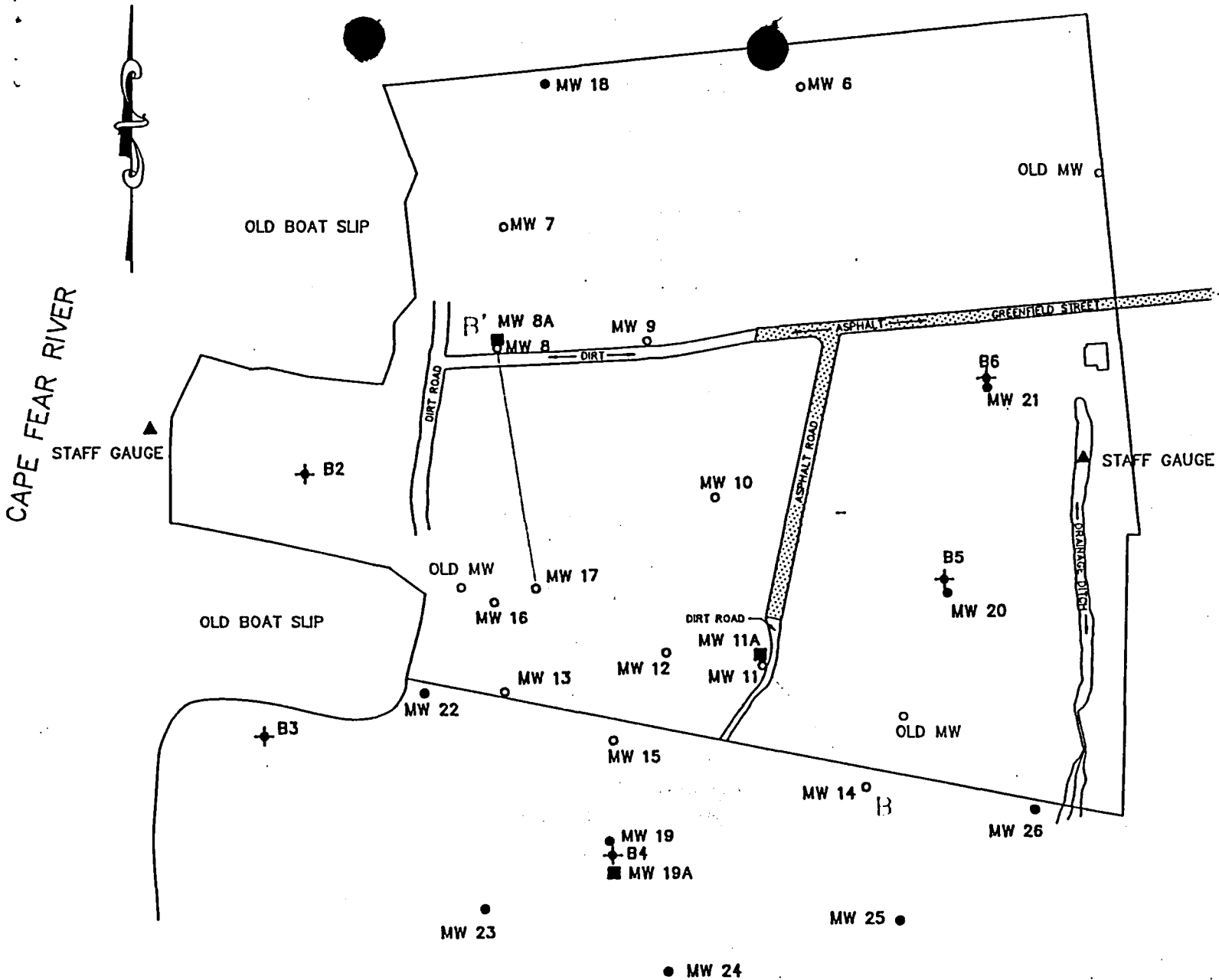
- PERMANENT MONITORING WELLS (12)
- ⊕ TEMPORARY MONITORING WELLS (5)
- ▲ STAFF GAUGE
- FP-C CRESOTE PRODUCT OBSERVED IN SOILS
- FP-D DIESEL PRODUCT OBSERVED IN SOILS
- CONTOUR INTERVAL = 10 mg/l

**DISSOLVED CONCENTRATION MAP**

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, NORTH CAROLINA

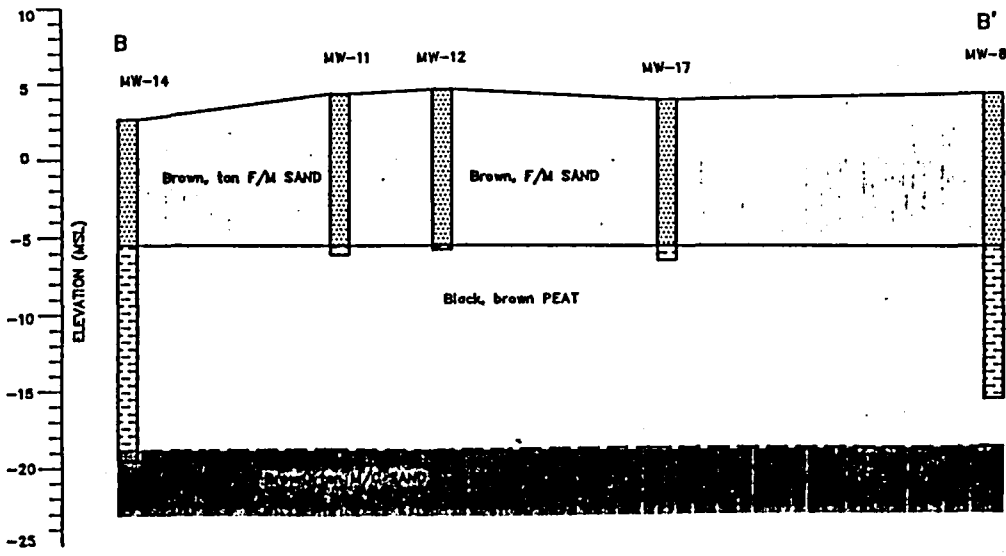


Environmental Technology Engineering, Inc.



**LEGEND**

- PERMANENT MONITORING WELLS (12)
- ✦ TEMPORARY MONITORING WELLS (5)
- ▲ STAFF GAUGE
- PROPOSED SHALLOW MONITORING WELLS (9)
- PROPOSED DEEP MONITORING WELLS (3)



**PROPOSED MONITORING WELLS AND CROSS SECTION B-B'**  
 SOUTHERN WOOD PIEDMONT COMPANY  
 WILMINGTON, NORTH CAROLINA



Site Name: Southern Wood Piedmont  
 Site Number: NCD 058 517 467  
 Site Location: Wilmington, N.C.  
                   New Hanover County  
                   Latitude: 34 12 58.0  
                   Longitude: 77 56 54.5  
 Date: July 06, 1992

Calculation Results

Distance from Site Location	Population		Number of Households	
	Per Ring	Cumulative	Per Ring	Cumulative
0 to 1/4 mile	429	429	207	207
>1/4 to 1/2 mile	607	1,036	331	538
>1/2 to 1 mile	6,366	7,402	3,064	3,602
>1 to 2 miles	14,936	22,338	7,422	11,024
>2 to 3 miles	12,965	35,303	6,050	17,074
>3 to 4 miles	14,611	49,914	6,487	23,561

Note: The populations and number of households within specified target distance rings were calculated for the NC Superfund Section by the NC State Center for Geographic Information and Analysis using the 1990 US Census data. These values were calculated by summing the population and the number of households data for each census block located within each target ring. For census blocks lying only partially within the ring, the per cent area of the block within the ring was multiplied by the population and household densities of the block.

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #2  
LI USING ENGINEER'S SCALE (1/60)

SITE NAME: Southern Wood Piedmont Co. CERCLIS #: NC0 058 517 467

AKA: \_\_\_\_\_ SSID: \_\_\_\_\_

ADDRESS: P.O. Box 450, Greenfield St. ~~easternmost RR spur crossing site~~  
CITY: Wilmington STATE: NC ZIP CODE: 28401 (near eastern border of site)

SITE REFERENCE POINT: intersection of Greenfield St. with

USGS QUAD MAP NAME: Wilmington TOWNSHIP: \_\_\_\_\_ N/S RANGE: \_\_\_\_\_ E/W

SCALE: 1:24,000 MAP DATE: 1970 (P.F. 1979) SECTION: \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4

MAP DATUM: 1927 1983 (CIRCLE ONE) MERIDIAN: \_\_\_\_\_

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy):

LONGITUDE: 77° 52' 30" LATITUDE: 34° 07' 30"

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 77° 55' 00" LATITUDE: 34° 12' 30"

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM LATITUDE GRID LINE TO SITE REF POINT: 85

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

$$A \times 0.3304 = \underline{28.1} "$$

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 00' 28.1"

D) ADD TO STARTING LATITUDE: 34° 12' 30.0" + 00' 28.1" =

SITE LATITUDE: 34° 12' 58.0"

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM RIGHT LONGITUDE LINE TO SITE REF POINT: 347

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

$$A \times 0.3304 = \underline{114.6} "$$

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 01' 54.6"

D) ADD TO STARTING LONGITUDE: 77° 55' 00.0" + 01' 54.6" =

SITE LONGITUDE: 77° 56' 54.6"

INVESTIGATOR: Fal Obyed DATE: 4/28/92

SITE NAME:

*Southern Wood Piedmont Co.*

NUMBER: *NCD 058 517 467*

57°30"

CASTLE HAYNE 8 MI.

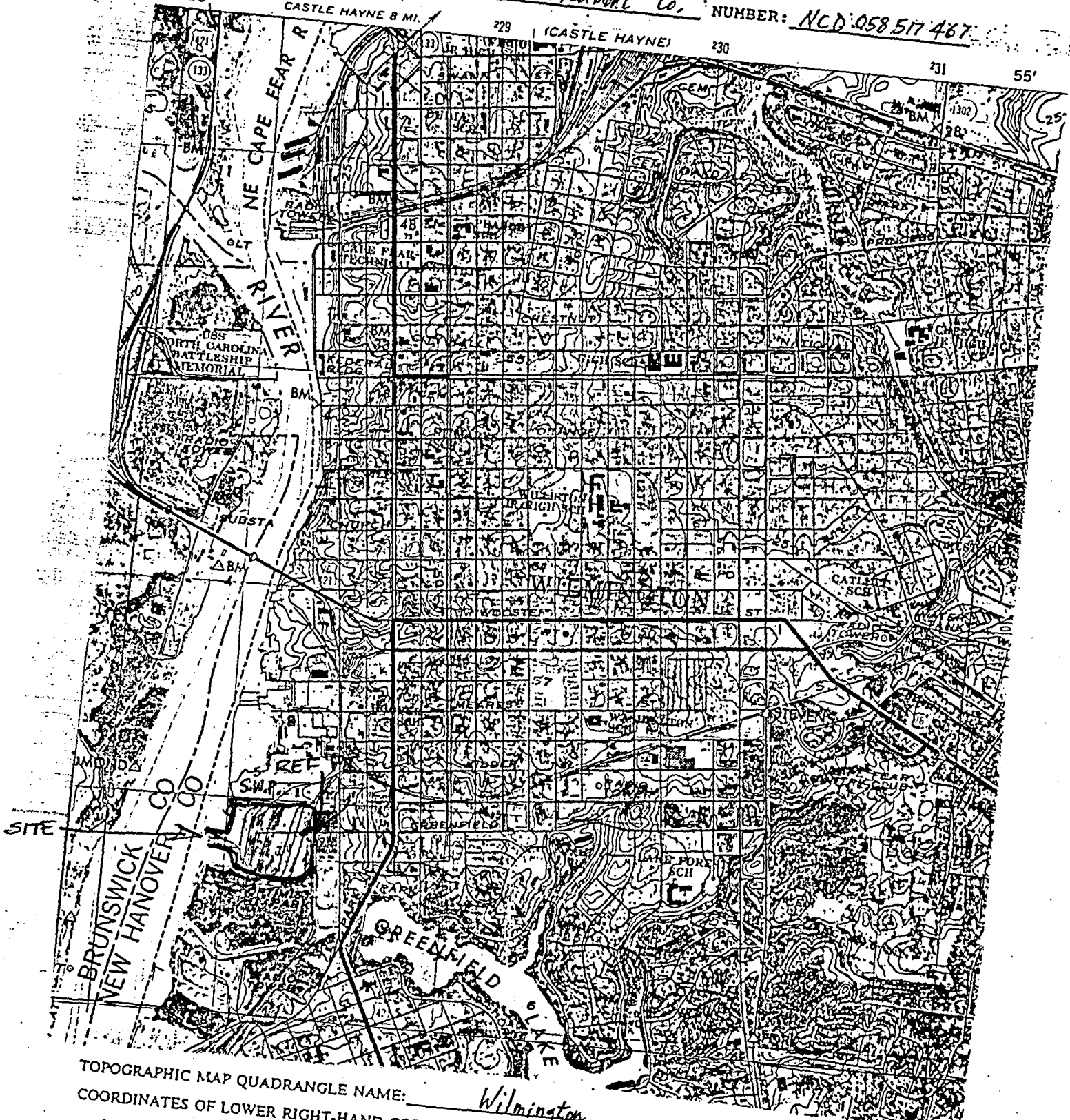
229

(CASTLE HAYNE)

230

231

55'



TOPOGRAPHIC MAP QUADRANGLE NAME:

*Wilmington*

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: *34° 12' 30"* LONGITUDE: *77° 55' 00"*

SCALE: 1:24,000.





BRUNSWICK RIVER

BRUNSWICK NEW HANOVE

ISLAND

GREENFIELD LAKE

*only area for station  
1500-2000 from Plaza PE*

*checked with*

*SWP  
Wilmington, N.C.  
7.5' USGS Quad  
1970*

*SWP  
Wilmington*



MILVIO

DATE: 2/5/92

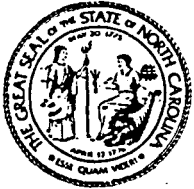
TO: File

SUBJECT: \_\_\_\_\_

Southern Wood Piedmont  
NCD 058517467  
Wilmington, New Hanover

I called Sandra Watson  
(703) 599-1082 + requested a site  
map with sampling locations to match  
up with the sample results attached.  
She said she would send them in the  
next week or two.

From: Pat DePava



North Carolina Department of Environment,  
Health, and Natural Resources



Printed on Recycled Paper

April 2, 1990

TO: File  
FROM: Pat DeRosa PD  
RE: Southern Wood Piedmont  
NCD058517467

I called Bonnie Albritton, SPA, (919) 763-1621 today and related to her the information which Flint Worrell gave me last week. I told Bonnie I would keep her posted on any updates at this site.

PD/ds/memos.4

March 27, 1990

TO: File

FROM: Pat DeRosa *PD*

RE: Southern Wood Piedmont Company  
NCD058517467  
Wilmington, North Carolina

Flint Worrell, Hazardous Waste Management Branch, (919) 486-1191, called me today to tell me about his conversation with Chuck Davis, Southern Wood Piedmont Company, regarding the Wilmington site. Flint relayed the following:

1. No post-cleanup samples of the ditch (on SPA property) have been collected. Soil was removed from the ditch based on visual contamination. The ditch has since been backfilled. Southern Wood Piedmont plans to sample the ditch to check for contaminants.
2. The company plans to make one more land application to the land farm area.
3. They plan to take additional monitoring well samples.
4. The company plans to submit a completion report/risk assessment after the above three activities have been completed. This report is expected by the end of the year. Mr. Davis said he would prefer to meet after the report is complete, however, he can meet with us earlier if we wish.

Flint thought that the report would be submitted to the Hazardous Waste Section to determine whether the terms of the administrative order had been met. At that time, Superfund would also review the report to identify any additional Superfund concerns at the site.

PD/ds/memos/2

CONFIRMATION LIST

MAR 16 '90 15:56

SENDER: 919 733 4811

SUPERFUND BRANCH

RECEIVER: 1 919 763 6440

PAGES SENT: 11

DURATION: 07:10



# Fax Record

North Carolina Department of Environment, Health, and Natural Resources  
Solid Waste Management Division

From: \_\_\_\_\_, Solid Waste Management Division  
\_\_\_\_\_, Solid Waste Section  
\_\_\_\_\_, Hazardous Waste Section  
Pat DeRosa, Superfund Section

Date: 3-16-90

To: Bonnie Albritton, NC State Ports Authority  
919-763-6440

Re: Southern Wood Piedmont, Wilmington, NC  
As we discussed, here is a copy of the  
Admin. Order on Consent. Will contact you Monday.

No. of Pages (Including Cover) 11

PD.

Confirm receipt of document(s)

Division of Solid Waste Management	(919) 733-4996	_____
Hazardous Waste Section	(919) 733-2178	_____
Superfund Section	(919) 733-2801	_____
Solid Waste Section	(919) 733-0692	_____

STATE OF NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES

DEPARTMENT OF HEALTH SERVICES

In Re: )  
SOUTHERN WOOD PIEDMONT COMPANY )  
NCD058517467 )

ADMINISTRATIVE ORDER  
ON CONSENT

BACKGROUND

From about 1964 to 1983, Southern Wood Piedmont Company (Southern Wood), a subsidiary of ITT Rayonier, Inc., a Delaware corporation, owned and operated a plant in Wilmington, North Carolina, which engaged in the business of wood preserving. The preservatives used were creosote coal tar, pentachlorophenol (PCP) in diesel oil and copper, chromate and arsenate (known as CCA). As part of that operation, residues were deposited in several locations on the plant site. The areas, identified in Southern Wood's February 13, 1983, correspondence to Mr. William Paige, Environmental Engineer, are summarized in Attachment I and shown in the map in Attachment II.

AGREEMENT

In order to resolve a dispute regarding the applicability of the Resource Conservation and Recovery Act (RCRA) and the Solid Waste Management Act and rules (N.C.G.S. 130-A, Article 9 and 10 NCAC 10 F), and to avoid costly protracted litigation, Southern Wood and the State do hereby enter into this Administrative Order on Consent (Consent Order).

The purpose of this Order is to address soil and ground water contamination and to provide clean-up/remedial actions which will minimize the site's impact on the environment and public health in a manner which is consistent with the State and Federal hazardous waste laws and rules.

Therefore, in order to further the public interest and to protect the public health and environment, Southern Wood Piedmont and the State, by and through their authorized representatives, do enter into the following Consent Order and agree:

1. That Southern Wood is a Delaware corporation, which rents a plant site in North Carolina at Wilmington owned by the city of Wilmington and the Port Authority of the State.
2. That, to protect the public health and environment, the Solid and Hazardous Waste Management Branch, Environmental Health Section, Department of Human Resources of the State of North Carolina (State) is empowered to implement and seek compliance with the standards for generation, transportation, treatment, storage and disposal of waste pursuant to the Solid Waste Management Act, N.C.G.S. Chapter 130-A (Act), and the rules promulgated thereunder at 40 CFR 260-271, codified at 10 NCAC 10 F (rules). The State has been authorized to implement the State program in lieu of the Federal hazardous waste program under the Resource Conservation and Recovery Act (RCRA). William L. Meyer, Head of the Branch, has been delegated those responsibilities.
3. This Consent Order shall apply and be binding upon Southern Wood, its successors and assigns and upon all persons or firms acting under or for them. Southern Wood shall provide a copy of this Consent Order to each contractor or other person performing any work under this Order and shall condition each contract or agreement for such work upon these Consent Order terms.
4. That nothing in this Consent Order shall be construed as limiting the State from performing its duty to protect the public health and the environment of the State as required by law.

5. That nothing herein shall be construed to affect any rights, claims or defenses as may exist between Southern Wood and any other person or entity.
6. That the State shall suspend the Compliance Order and Notice of Penalty, dated September 7, 1984, if compliance with this Consent Order is achieved as set forth herein. If compliance with this Order is not achieved, the September 7, 1984, Order and penalty shall become effective immediately upon written notice.
7. That Southern Wood shall continue with the ongoing remedial action being implemented in the operating areas as set forth in the remedial action plan submitted to the State on July 31, 1984, as modified by the terms of this Order. This action currently consists of land treatment to reduce the oil preservative residuals in contaminated soil to an acceptable residual level. The land treatment shall be conducted on treated pole storage areas where there are presently low levels of preservative residuals in the soil.

The contaminated areas described below shall be addressed in the following manner:

a. Superfund Area I

Excavate this area and landfarm the discolored soil in one of the treated pole storage areas.

b. Track Area

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

c. Oil Treating Areas

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

d. Large Storage Tank Containment Area

Remove the visually, heavily contaminated soil and landfarm in a treated pole storage area.

e. Treated Product Storage Area

The treated pole storage areas not used for landfarming of heavily contaminated soil shall be tilled in place.

f. CCA Storage Tank Area

Soil testing 0.5PPM arsenic or greater on the basis of the EP toxicity test for arsenic will be excavated from the site, but not from a depth in excess of five feet. Soil testing greater than 5.0 PPM arsenic will be sent offsite to a permitted land disposal facility, while soil which contains between 5.00 PPM and 0.5PPM arsenic will be mixed with Portland cement in a ratio which does not allow arsenic to extract above 0.5PPM as determined by the EP toxicity test. The treated material will then be buried on site.

g. Storage Tank Sludges

Remove the CCA sludge for disposal in a hazardous waste landfill. Remove the sludges from the bottom of the various oil tanks for disposal or energy recovery in a State approved landfill, incinerator, or boiler that has no outstanding Class I RCRA violations, or a landfill or combustion process out of the State which is approved by the environmental agency of the state concerned.

h. The landfarming will be done in an area identified as LF1 or LF2, or both, if needed, as outlined on the plant layout diagram (Attachment II).

i. The designated landfarm areas will be bermed and ditched to prevent rain runoff or runoff.

- j. Lysimeters will be installed at depths sufficient to monitor soil water quality. These lysimeters shall be protected to prevent damage by tilling equipment. Three down gradient monitoring wells and one upgradient monitoring well shall be installed to monitor groundwater quality. Groundwater monitoring devices shall be in accordance with the standards established by the Division of Environmental Management, Department of Natural Resources.
- k. Contaminated soil from the areas identified earlier shall be spread not to exceed a maximum two-inch layer over the landfarm area. Land treatment shall be limited to the upper six inches.
- l. The application of a commercial fertilizer shall be determined based upon soil analysis.
- m. The soil will be tilled weekly, weather permitting, to promote biological and photochemical breakdown of treating chemical residuals.
- n. Tillage and aeration of the land treatment areas shall continue until residual concentrations are determined not to have a significant impact on the public health and the environment as determined by the State.
- 8. That Southern Wood shall adhere to the following sampling and testing schedule:
  - a. Lysimeters will be sampled prior to application of contaminated soil to the landfarm areas, and every two months thereafter.
  - b. Soil will be sampled immediately after the initial tilling is completed. Samples will be obtained at 0-3", 9-12", and 21-24" depths. The soil sampling will be in accordance with SW 846.
  - c. All samples (soil, water) will be analyzed for PCP and the major constituents of creosote.
  - d. The sample results shall be submitted to this agency within 7 days after analysis.

9. All sampling and analysis shall be in accordance with EPA Publication, SW-846, "Test Methods for Evaluating Solid Waste" as revised.
10. That the landfarming operation will continue until a concentration of residual PCP and major constituents of creosote is reached which will protect public health and the environment. At this time it is not known what these concentrations are or how long it will take to reach them, but it is possible that up to two years may be required to stabilize the waste taken from Superfund Area I. Nothing in this order shall be interpreted to preclude Southern Wood from exercising its right to challenge any State determination as to safe residual concentrations if the company does not agree with such determination.
11. It is recognized that groundwater flow under the site is towards the Cape Fear River and that any contaminants reaching the groundwater from the site should eventually reach the river. Accordingly, Southern Wood will monitor the Cape Fear River upstream and downstream from the site to see if any water quality standard which could be affected by residues at the site is causing a violation of state water quality standards. Such monitoring shall be done at least twice per year during the time the land treatment operation to which this Order is in process. Further action to protect surface water quality standards or groundwater may be required by the Department of Human Resources or the Department of Natural Resources and Community Development pursuant to Chapter 143, Articles 21, 21A, and Chapter 87, Article 7 of the North Carolina General Statutes and 15 NCAC 2C, 2E, and 2L depending on the results of such monitoring, and the parties expressly reserve their respective rights with respect to such further action.

12. That Southern Wood shall arrange with the owners of the property, City of Wilmington and the State Port Authority, to provide the notice in the deed that the land has been used for hazardous waste as required by 40 CFR 265.120 codified at 10 NCAC 10 F .0033.
13. That Southern Wood shall complete the clean-up remedial steps authorized in the Consent Order and the Plan in paragraph 7(f) & (g) by November 1, 1985, and shall also commence land treatment of contaminated soil from areas a, b, c, d, and e as described in paragraph 7 by November 1, 1985.
14. The scope of the State's overview shall consist of the following:
  - a. The option to inspect the work performed and to collect and perform analysis of waste and soil samples upon any phase completion.
  - b. A comprehensive site inspection and record review after June 1, 1985 to determine compliance with the approved plan and other terms of the order.
15. The Branch shall designate Mr. William Paige, Environmental Engineer, as the primary contact for technical matters concerning the implementation of the plan. Mr. Jerry Rhodes, Environmental Chemist, will be available upon Mr. Paige's absence. Other Branch resources may be used for review and inspection as determined by Mr. Paige or Mr. Rhodes.
16. Southern Wood will designate one person as the primary contact for technical matters concerning implementation of the plan.



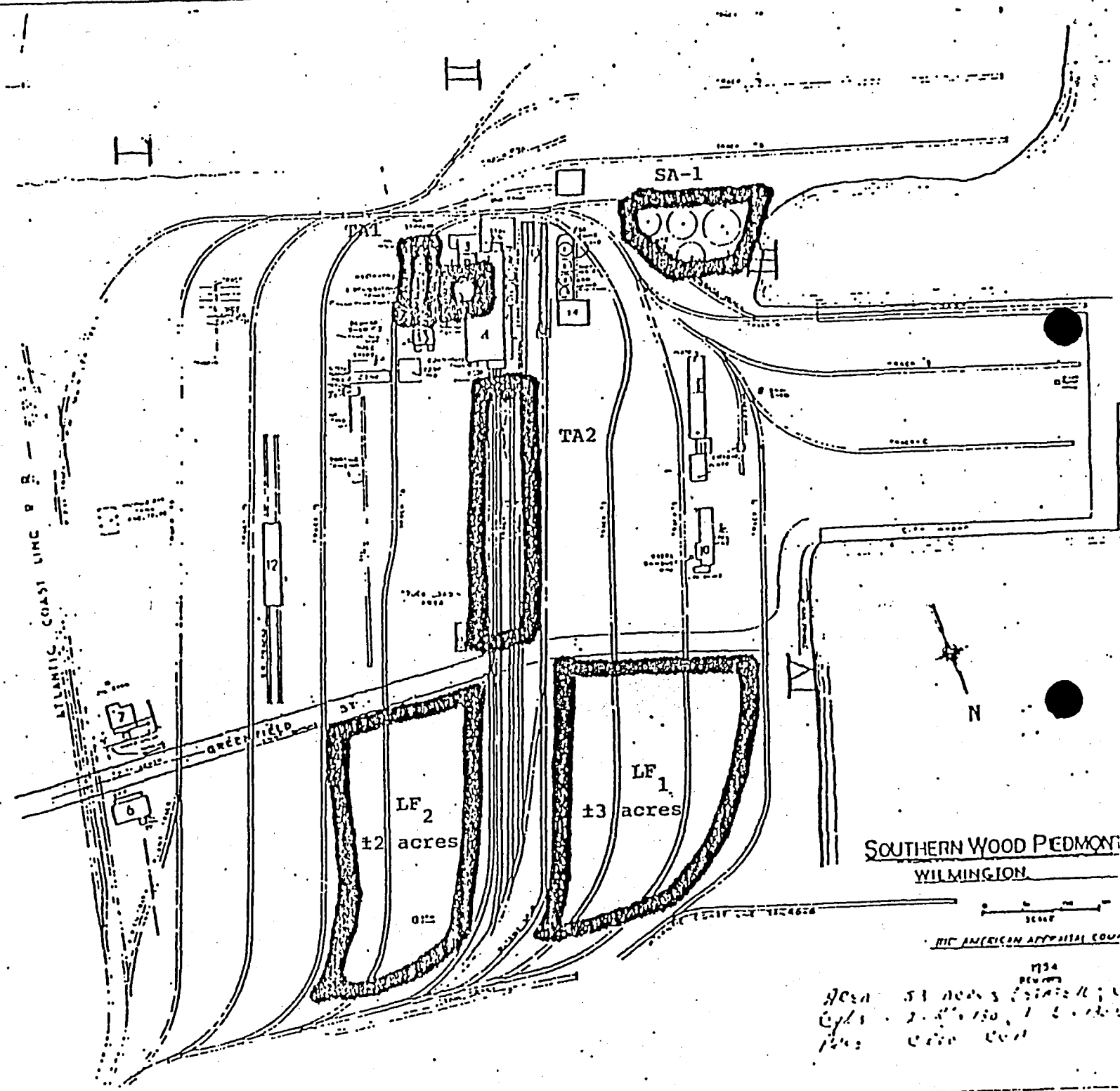
DEPOSITS REPORTED UNDER SUPERFUND

1. Superfund Area I, Covered Sludge Ditch  
An area described as a covered ditch containing creosote sludges from early plant operations. The location is on property leased from the State's Port Authority.
2. Superfund Area II, Trash Dump Area  
An area described as a general waste landfill used by the plant for many years. It is believed to consist almost exclusively of wood waste, dirt, and metal waste. Small amounts of creosote cleanup material may also have been deposited here.
3. Superfund Area III, Dike Area  
An area containing old, hard and solid creosote residuals similar to road tar were disposed of in an area near the south slip.
4. Superfund Area IV, Trash Fill Area  
Located in the north slip, this area was filled with mill waste consisting of mainly wood waste and metal bands. Some creosote sludge was deposited on the top of part of this area.

OPERATING AREA DEPOSITS

1. Track Area  
An area located in front of a treatment cylinder. Residual samples collected by Southern Wood suggest contamination to a depth of approximately six (6) inches.
2. Oil Treating Areas  
The soil areas around both oil treating room buildings contain treating chemical residuals. Soil around the working tanks is noticeably contaminated with oil to a depth of approximately two feet. The soil area around the waste water-oil recovered tank system is noticeably discolored to about a one foot depth.
3. Large Storage Tank Containment Area  
The soil in this area contains creosote residuals to a depth of approximately one foot.
4. Treated Product Storage Areas  
Relatively large areas on both State Port Authority property and City of Wilmington property contain creosote residuals in the soil as evidenced by some discoloration. These are areas where the treated poles were stored prior to shipment.
5. CCA Storage Tank Area  
Soil around the CCA storage tanks is discolored due to CCA residuals.
6. Storage Tank Sludges  
Varying amounts of sludge is present in the bottom of the various treating tanks.

- LEGEND:
- SA - Stg. Tank Area
  - TA - Treating Areas
  - LF - Landfarming Areas
  - LF<sub>1</sub> = ±3 acres
  - LF<sub>2</sub> = ±2 acres



SOUTHERN WOOD PIEDMONT  
WILMINGTON

THE AMERICAN APPRAISAL COMPANY

1974  
 Area 51 acres (including)  
 C/L 2.5 to 150, 1 to 100  
 Plus other land

IN WITNESS WHEREOF, the parties have executed this Agreement, on this  
the 20th day of May, 1985, by their duly authorized  
representatives.

Solid and Hazardous Waste Management  
Branch, Environmental Health Section  
Division of Health Services  
Department of Human Resources of the  
State of North Carolina

By:

William L Meyer  
William L. Meyer, Head

Southern Wood Piedmont Company

By:

Timothy H. Brannon  
Vice President and Chief Operator

# Fax Record

North Carolina Department of Environment, Health, and Natural Resources  
Solid Waste Management Division

From: \_\_\_\_\_, Solid Waste Management Division  
\_\_\_\_\_, Solid Waste Section  
\_\_\_\_\_, Hazardous Waste Section  
Pat DeRosa, Superfund Section

Date: 3-14-90

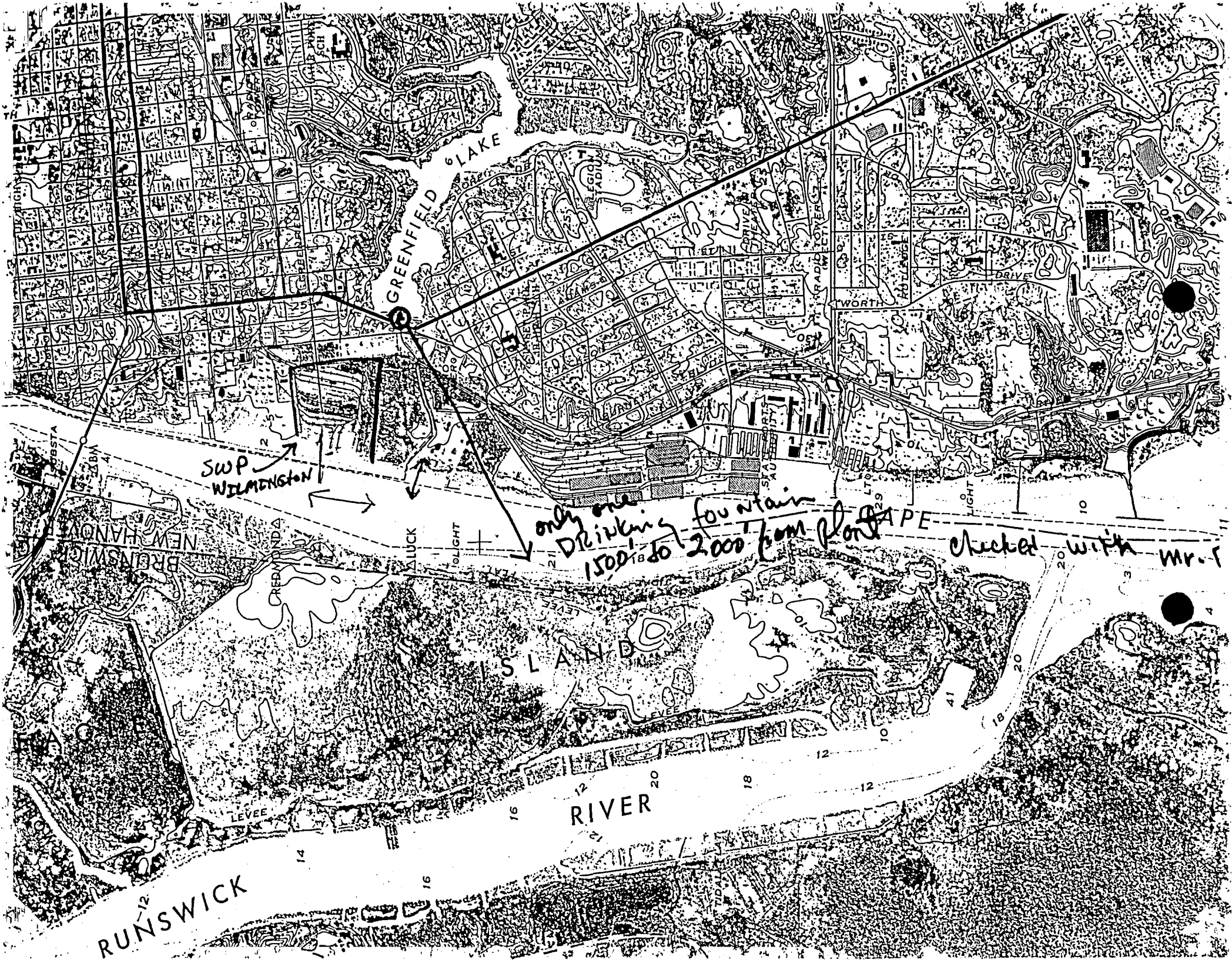
To: Bonnie Albritton, NC State Ports Authority  
919 763-6440

Re: Southern Wood Piedmont, Wilmington, N.C.

No. of Pages (Including Cover) 3

Confirm receipt of document(s)

Division of Solid Waste Management	(919) 733-4996	_____
Hazardous Waste Section	(919) 733-2178	_____
Superfund Section	(919) 733-2801	_____
Solid Waste Section	(919) 733-0692	_____



GREENFIELD LAKE

SWP  
WILMINGTON

only one Drinking fountain  
1500' to 2000' from plant

checked with Mr. F

BRIMS WICK  
NEW HANOV

ISLAND

RIVER

RUNSWICK

WORTH

LEVEE

BLUCK

LIGHT

LIGHT

DRIV

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LE

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LEVEE

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LEVEE

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37

NORTH CAROLINA STATE PORTS AUTHORITY  
2202 BURNETT BLVD.  
P. O. BOX 9002

TEL: 919/763-1621  
FAX: 919/763-6440  
TELEX: 510-937-0351

TELECOPIER COVER LETTER

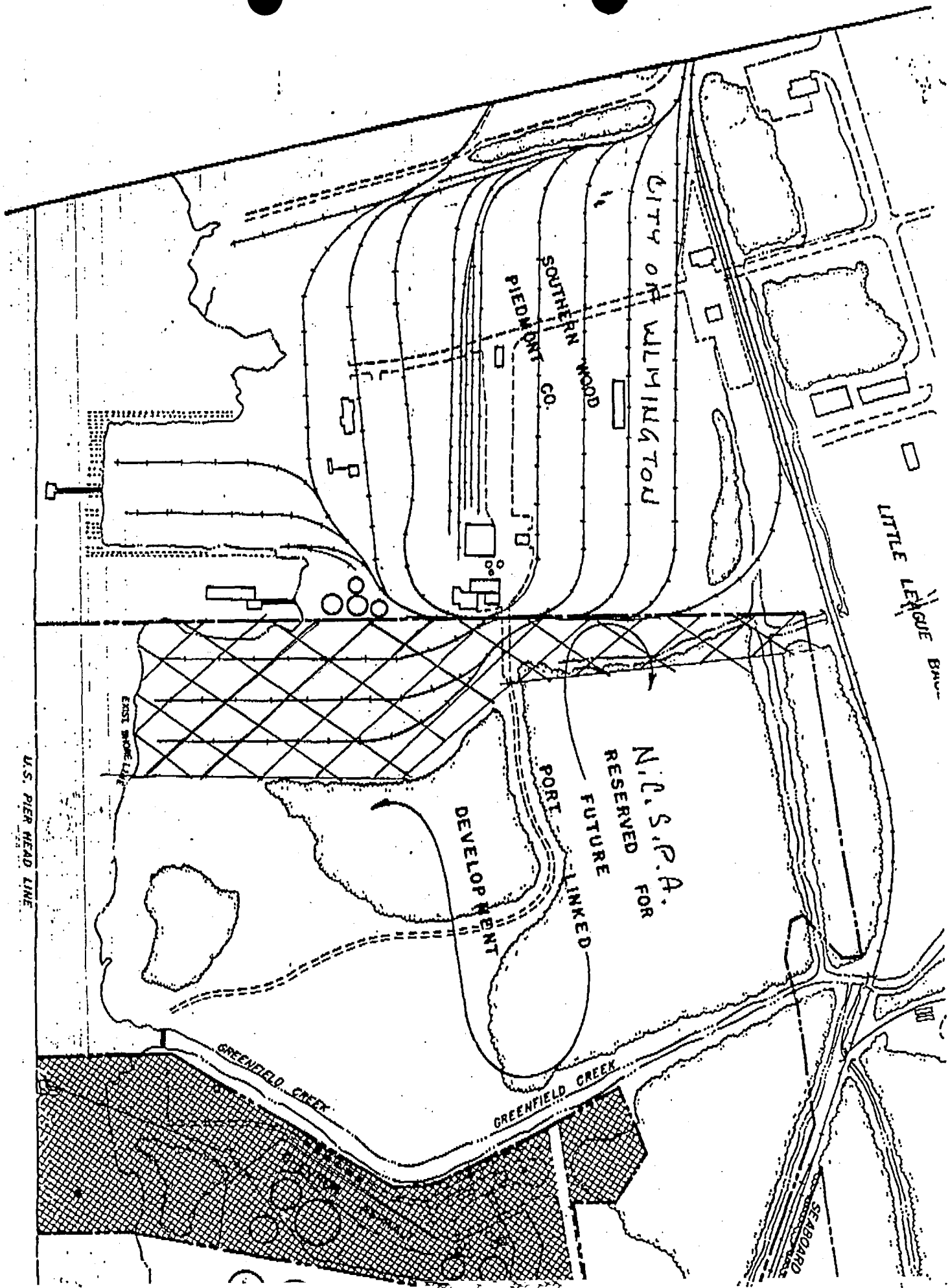
DATE: 3-14-90

PLEASE DELIVER THE FOLLOWING TO:

NAME: Pat de Rosa  
COMPANY: Super Fund  
FROM: Bonnie Albritton  
NC State Ports

WE ARE TRANSMITTING 2 PAGE(S), INCLUDING THIS COVER LETTER.  
IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL BACK AS SOON AS POSSIBLE.

Attached shows Southern Wood Piedmont (City of Wilmington) and South of that property is the Ports property that was leased to Southern Wood Piedmont. It is identified by large hatching and shows the three rail spurs. Hopefully this will help you identify our concern.



CITY OF WILMINGTON

SOUTHERN WOOD  
PIEDMONT CO.

LITTLE LEAGUE BALL

N.C.S.P.A.  
RESERVED FOR  
FUTURE DEVELOPMENT

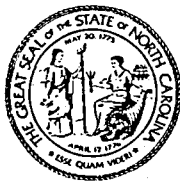
PORT LINKED  
DEVELOPMENT

GREENFIELD CREEK

GREENFIELD ENTRY

U.S. PIER HEAD LINE

SEABOARD



State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

14 March 1990

William L. Meyer  
Director

Ms. Bonnie Albritton  
Property Officer  
NC State Ports Authority  
Post Office Box 9002  
Wilmington, NC 28402  
Courier #413

Dear Ms. Albritton:

RE: Southern Wood Piedmont  
Wilmington, NC  
NCD058517467

As we discussed, I have enclosed a copy of the Site Screening Investigation Report for the Southern Wood Piedmont site in Wilmington, NC. The site investigation was conducted by EPA contractors in 1985. The site investigation report is the most recent report on this site that we have in the Superfund files. I understand that Southern Wood Piedmont has been working in cooperation with the Hazardous Waste Section to address some of the environmental concerns at the site. I will telephone you on Friday after I have had the opportunity to talk with Doug Holyfield, Hazardous Waste Section, regarding the current status of the site.

If you have any additional questions, please feel free to contact me at (919) 733-2801.

Sincerely,

A handwritten signature in cursive script, appearing to read "Pat DeRosa".

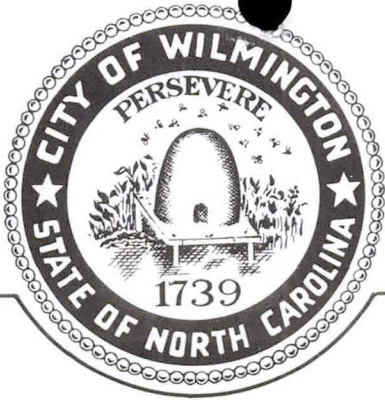
Pat DeRosa, Environmental Chemist  
Superfund Section  
Solid Waste Management Division

PD/ds/1

Enclosures

cc: Lee Crosby





CITY of WILMINGTON  
North Carolina

P.O. BOX 1810  
28402

PARKS AND RECREATION DEPARTMENT

Mr. R. Douglas Holyfield,  
Field Operations Supervisor  
Solid and Hazardous Waste Management Branch  
North Carolina Department of Human Resources  
Division of Health Services  
Post Office Box 2091  
Raleigh, North Carolina 27602-2091



Re: Southern Wood Piedmont  
Wilmington, North Carolina

Dear Mr. Holyfield:

Per our discussion on January 31, 1989, I have enclosed a site map of the Southern Wood Piedmont facility. This map symbolizes information given to the City Survey Crew by Henry Phillips, Southern Wood Piedmont Representative overseeing the landfarming operations.

In addition, a letter dated December 20, 1989 from Gary Babb, Supervisor Waste Management Unit.

I would like to take this opportunity to thank you in advance for reviewing this site and for discussing it with Stan Atwood in the superfund branch.

Sincerely,  
  
Richard A. King,  
Superintendent of Parks Department

RAK/vh



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director

December 20, 1988

Mr. Richard King  
Wilmington Parks and Recreation  
P.O. Box 1810  
Wilmington, North Carolina 28401

Re: Southern Wood Piedmont Site, Wilmington, NC

Dear Mr. King:

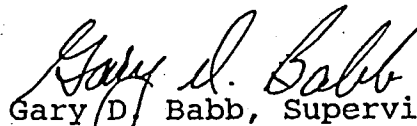
As we discussed by phone today, our office is continuing to work with Southern Wood Piedmont Company through an Administrative Order on Consent dated May 20, 1985. The site is also listed with the US EPA Superfund Program for evaluation of past waste handling activities.

The land farming of creosote wastes on-site, has shown some degradation of constituents over the past year, however, there is no means of anticipating an end date for the land farming activity. Irregardless of the outcome of this treatment activity, the Southern Wood Piedmont site will remain on EPA's Superfund list.

Due to the treatment activity occurring at the site, I would not recommend any other use of the land at this time. If, at some time in the future, the treatment is completed, the property may be available for some limited use, however, this should be cleared with our Superfund Branch prior to initiation. The contact person is Stan Atwood at (919) 733-2801.

If you have any questions, please call me at (919) 733-2178.

Sincerely,

  
Gary D. Babb, Supervisor  
Waste Management Unit  
Hazardous Waste Branch

GDB/dd

GB25

6 August 1987

TO: Bill Meyer

FROM: Lee Crosby *lee*

RE: Southern Wood Piedmont

I have talked with Felicia Barnett about Southern Wood Piedmont. She seems to recall "someone around the office" mentioning that the facility was planning its own cleanup, but does not recall who it was. Calls have also been made to Dick Green who was out of the office this morning.

This site will not score above 28.5 under the current HRS system because water intakes are above the facility.

LC/pc

file

NC DOS8517467  
Southern Wood Piedmont



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30365

APR 30 1986

4WD-ER

Ms. Lee Crosby  
NC Solid and Hazardous Waste Management Branch  
NC Division of Health Services  
P.O. Box 2091  
Raleigh, NC 27602

Dear Ms. Crosby:

Enclosed is a copy of the final report on the January 7, 1985 site investigation of Southern Wood Piedmont in Wilmington, North Carolina. If you have any questions, please contact me at (404) 347-2234.

Sincerely,

*Felicia Barnett*

Felicia Barnett  
Environmental Engineer  
Investigation and Compliance Section

P. O. Box 5447  
Spartanburg, S. C. 29304

Phone 803/576-7660



**Southern Wood Piedmont Company**

*Wilmington, N.C.*

*File*  
July 31, 1984  
11-M-1.10.7

Mr. William Paige  
Solid and Hazardous Waste Management Board  
N.C. Department of Human Resource  
Box 2091  
Raleigh, N.C. 27402

Dear Mr. Paige

The following is in response to your letter of July 6th and our meeting in Wilmington on July 23rd.

Items:

Question:

1. Sludge from the waste water treatment system is considered K001. Any sludge generated at the Wilmington site would thus be classified as such and subject to RCRA.

SWP Response:

By definition K001 is the bottom sediment sludge from the treatment of waste water from the wood treated with creosote. We never treated the waste water at Wilmington as such. The in plant process handling of water to oil separations were done for recycling and reuse: a modified API steel tank and an air floatation system (Wemco unit). All oils that settled out were recycled in the plant or were sent to our other plant locations. None of this oil was placed into the landfarm area.

Question:

2. North Carolina has not recognized landfarming as a suitable method to handle wood preserving waste. The Solid and Hazardous Waste Management Branch as authorized land application in one case which was deemed an imminent hazard and in another case which had suitable geological conditions.

SWP Response:

This subject was covered verbally at our Wilmington meeting.

Question:

3. The CCA waste is a RCRA hazardous waste as defined in 40 CFR 261.24 as adopted in 10 NCAC 10F .0029 and is thus subject to closure plan as defined in 40 CFR 265.110-265.120 as adopted in 10 NCAC 10F .0033.

SWP Response:

As stated in our June 8th letter, page 6 section S, Southern Wood Piedmont will remove the CCA soil not meeting the EPA toxicity test in 40CFR 261.24. Soil samples are being analyzed now for determining what disposal procedure to use. A disposal proposal on this will follow.

Question:

4. If landfarming is allowed, any residual levels must be approved by the North Carolina Department of Human Resources. Proposed levels shall be submitted by Southern Wood Piedmont Company.

SWP Response:

As is known there is no published criteria on "how clean is clean". In discussing this subject in regard to the oil perservatives with Dr. Gary McGinnis, Mississippi State University, and with our Rayonier Research Center in Shelton, Washington, we propose the following:

- a. That in the soil farming project as in our June 8th letter we use as basis the University of Florida study, attachment 6, which level is .475 ppm penta.
- b. For creosote components of carbon<sub>13</sub> and under a 95% removal will be achieved. For carbon<sub>14</sub> and over a 80% removal will be achieved. The higher carbon compound's solubility, volatility and migration are extremely stable. They will breakdown but at a much slower rate. Initial samples are being analyzed. As soon as we receive the results, we will estimate starting concentrations and will forward them on to you.

Toxicity data: We are reviewing the creosote information available to us. As soon as this is completed the information will be forwarded on to you for toxicological review. A number of the creosote components are listed in N. Ervin Saxs book "Dangerous Properties of Industrial Materials" published by VanNostrum.

Question:

5. Landfarming if approved, shall be limited to the upper six inches.

SWP Response:

As discussed our harrow will be turning the soil to about a 6 to 8 inch depth.

Question:

6. The application rate of a commercial fertilizer shall be determined based upon soil analysis. Analysis can be obtained free through the Department of Agriculture. For additional details, contact me.

SWP Response:

Fertizler was applied at a rate of 200 pounds per acre of a 5, 10, 10 type. The recommended rate by Mississippi State University and EPA Ada Research is a 20 to 1 on a carbon-nitrogen ratio. An initial sample analysis for carbon-nitrogen are now being done by a commerical laboratory. Adjustment of ph was done by addition of lime at about 1 ton per acre to bring the soil to a ph of about 7.

Question:

7. The selection of indicator parameters to monitor the degradation process shall occur prior to the implement of the plan. As noted in earlier correspondence, more detail analysis will be required at some point to determine degradation efficiency. Sampling shall be performed to determine initial concentration levels.

SWP Response:

As covered in section 5 the indicator parameter initial and final parameter will be penta and creosote components: These are the P.N.A.'s that will be read from the GC scan - naphthalene, 2 methylnaphthalene, 1 methylnaphthalene, biphenyl, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthrene, pyrene, chrysene, penta. Phenol will be used as the initial, interim and final work to tract breakdowns of chemicals.

Question:

8. Discussion with the Department of Environmental Management's ground water section suggest that a joint meeting arranged by myself should take place as soon as possible.

SWP Response:

The suggested meeting took place at our Wilmington plant on July 23rd with you and Messrs. Reynolds, Holyfield, Marsh, Moore, H. O. Phillips, E. F. Button and myself.

During our meeting you asked for our rationale concerning the RCRA or non-RCRA nature of the material we are excavating at the former Wilmington plant site. You will readily understand that it is impossible to look back and be certain of the chemical composition of the wood preservatives that have been leaked or released at the plant site in the past. Some enabling assumptions had to be made in order to get on with the aerobic breakdown of these wood preservatives while we still had time on the lease of the plant site and while the weather was warm enough to promote rapid degradation of such residues.

Accordingly, we assumed that the oil residue on the ground, around the tanks which were used to store received creosote, was commercial grade creosote when spilled. Such residue will be sent off site for disposal. Conversely, the oil residue that was on the ground around the working tanks was not commercial grade creosote when spilled. This residue was generated by operator error, that sometimes occurred, when the cylinder was blown back to these tanks at the end of a treating cycle. If the air pressure was not shut off quickly enough the mixture of creosote water and wood sugars, remaining in the cylinder at the end of a treating cycle, would be blown out the top of the tank. The operator would then add commercial grade creosote, from storage, to the working tank before starting the treating cycle on the next charge.

In addition, leaks have occurred around the treating area when a pipe going to the cylinder would break or leak. We have assumed that such oil residue would be commercial grade creosote, and we are going to send such material gathered from under and around the cylinder off site for disposal. The same analysis holds true for Penta.

Pages 7 and 8 of our June 8th letter and attachment 8 and 9 have been updated and modified to final proposed plan. Please send us information on well permitting that Mr. Marsh said was available.

If you have any questions please advise. We will appreciate the comments.

Sincerely,  
Southern Wood Piedmont



Charles A. Burdell  
Technical Director

CAB/dm

CC: E. F. Button - Stamford  
R. H. Watts - Stamford  
S. R. Crabbe  
E. L. Gibbs  
H. O. Phillips - Wilmington



VI. Proposed Landfarming Procedure

1. The landfarming will be done in the Area LF1 and Area LF2, outlined on the plant layout diagram (attachment 8). These areas are already lightly contaminated with treating chemical residues from many years use as treated pole storage.
2. The designated landfarm areas are bermed and ditched to prevent rain runoff or runoff.
3. Six suction vacuum lysimeters are installed at one and two foot depths to monitor soil water quality. The proposed lysimeter cluster locations are indicated on the landfarm layout diagram (Attachment 9). These lysimeter clusters will be protected by barricades to prevent damage by tilling equipment. We will install two monitoring wells immediately downgradient of the landfarm areas. We propose to utilize the existing upgradient well. A proposal showing well design and location will be submitted shortly by Law Engineering. We are convinced that these samples will demonstrate that the wood treating chemicals are breaking down, not leaching into the groundwater.
4. Contaminated soil from the areas outlined in Section V-A page 4 above; the treating cylinder track area and treating area; will be spread in a maximum two inch layer over the landfarm area. This will be at a maximum additional rate of 20% of the underlying soil when tilled to a depth of six to eight inches. From previous analysis these soils contain less than 5% creosote.
5. Nutrients will be added at an application rate of 200 lbs. per acre as commercial fertilizer (such as 8-8-8) or a 20 to 1 carbon nitrogen ratio.
6. The initial application of contaminated soil and fertilizer will be thoroughly tilled into the underlying soil to a depth of six to eight inches.
7. The soil will be tilled weekly, weather permitting, to promote biological and photochemical breakdown of treating chemical residuals.
8. Sampling and Testing Schedules

Extraction and analytical procedures are outlined in Attachment 10.

- a. Lysimeters will be sampled for soil water just prior to application of contaminated soil to the landfarm areas, and every two months thereafter. Soil water will be analyzed for total phenol content using the Standard Methods Test 222 Method and for PCP and the creosote compounds using the gas chromatograph method (G/C), EPA SW8040 through 8100.
- b. Soil will be sampled immediately after the initial tilling is completed. It will be resampled after one, two, four, and six months. Soil samples will be sampled at the points indicated on the landfarm diagram (Attachment 8). Samples will be obtained at 0-3", 9-12", and 21-24" depths. The soil samples from each of the two landfarm areas will be composited for equal depths for analysis.

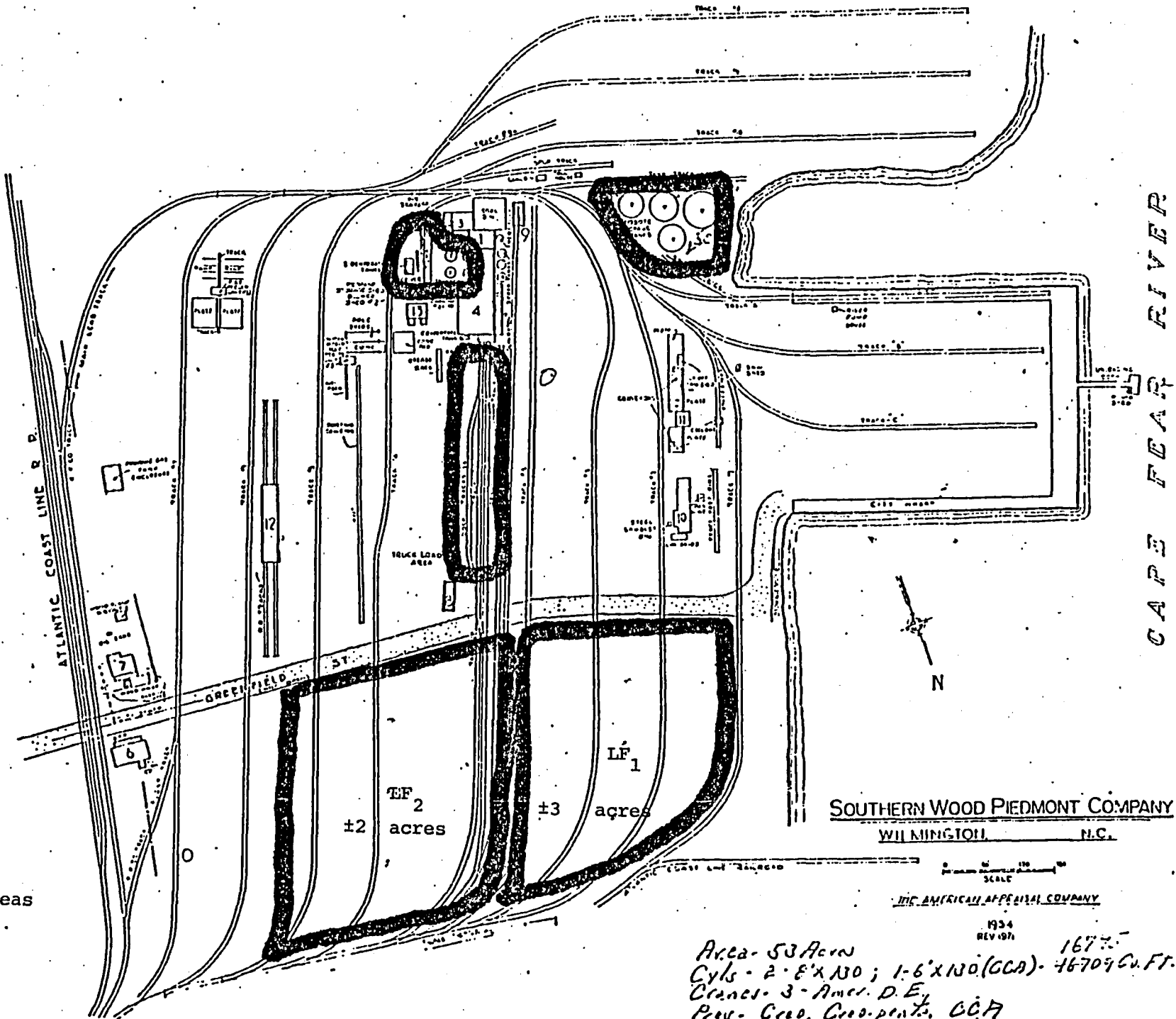
c. All samples will be analyzed for total extractable phenol. The initial samples and the four and six-month samples will be analyzed by G/C for other organics.

9. After the six month sample analysis results are available, all results will be reviewed with the North Carolina agency.

#### VII. Outline of Tilling Procedure

All lightly contaminated treated product storage areas and the soil underlying areas not utilized for landfarming where heavily contaminated soil is removed will be tilled to encourage breakdown of any residual treating chemicals that might be present. Some of the areas where soil is removed may be too wet to till due to soil moisture conditions.

1. The overlying soil will be removed for landfarming; or for offsite disposal in the case of the soil around the creosote storage tanks. No soil will be removed from the treated pole storage areas.
2. Immediately after soil removal, fertilizer will be added at the rate of 200 lbs. per acre (estimate of a ratio suggested by MSU of 20 to 1 in carbon to nitrogen), and the underlying soil will be tilled, soil moisture content permitting.
3. Tilling will be repeated weekly for the first 12 to 16 weeks, weather permitting, and will be done once per month until the six months.
4. After six months of tilling, soil samples will be obtained at 0-3", 9-12", and 21-24" depths.
5. Soil samples will be composited by depth for each major area and analyzed for organics by G/C.
6. Analytical results will be reviewed with the agency.



CAPE FEAR RIVER

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, N.C.

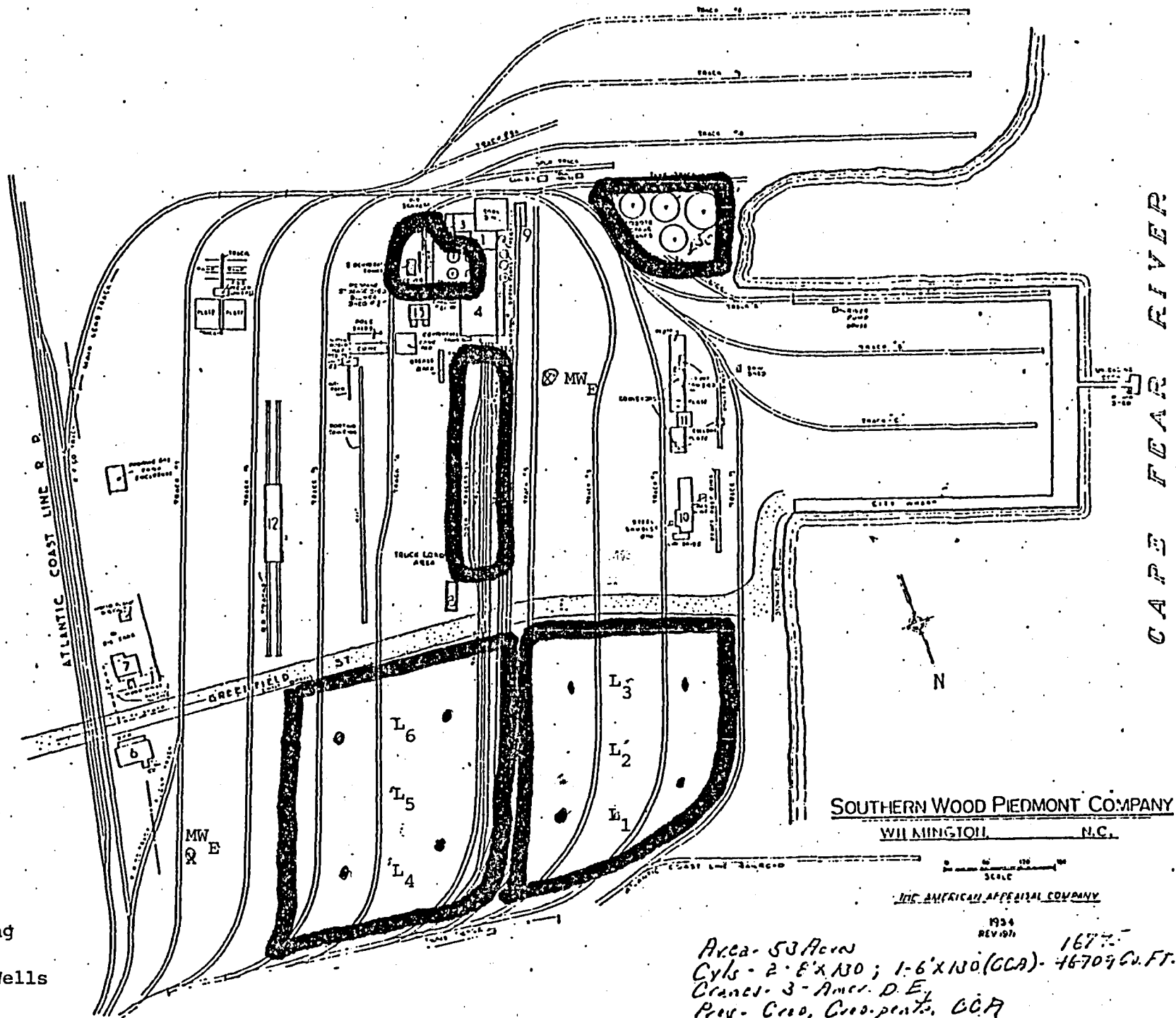
SCALE  
THE AMERICAN APPRAISAL COMPANY

1934  
REV 1971

Area - 53 Acres  
Cyls - 2 - 8' x 130 ; 1 - 6' x 130 (CCA) - 16775  
Cranes - 3 - Amer. D.E.  
Pier - Ciro, Ciro-pent, CCA

NOTES:

- LF=Landfarming Areas
- LF<sub>1</sub> = ±3 acres
- LF<sub>2</sub> = ±2 acres



NOTES:

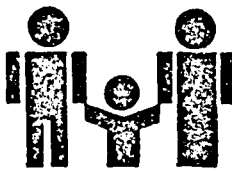
- L<sub>1-6</sub> = Lysimeters
- = Soil Sampling Points
- MW E = Monitoring Wells Existing

05493  
53131

Area - 53 Acres  
 Cyls - 2 - 8' x 130'; 1 - 6' x 130' (GCA) - 46709 Cu. Ft.  
 Cranes - 3 - Amer. D. E.  
 Pile - Ciro, Ciro-pent, CCA

1934  
REV 1071

1677



Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

August 10, 1984

*PA  
File*

Mr. Walton Jones  
EPA 3012 Regional Project Officer  
Air and Hazardous Materials Division  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

RE: Preliminary Assessment Reports/  
Transmittal Letter

Dear Mr. Jones:

Submitted under this cover are the Preliminary Assessment Reports for the following ERRIS List Sites in North Carolina:

North State Chemicals, Inc.  
3301 Spring Garden Street  
Greensboro, N. C. 27407

NCD991278839  
Guilford County

The location noted here is where the facility began operations sometime in 1978 as a processor and reclaimer of industrial chemical wastes. The company had problems with the property owner and moved to another location. The State forced a cleanup of the second location when the company went out of business in 1983. Both sites are "clean" and are not CERCLA hazardous waste disposal sites.

Based on the review of available information we recommend that no further action is required at this site. It is therefore requested that North State Chemicals be placed on the inactive ERRIS List.

Rohm & Haas, Inc.  
Cedar Creek Road  
Fayetteville, N. C. 28302

NCD039047485  
Cumberland County

This listing is an ERRIS List Duplication and therefore request that it be removed from ERRIS. The correct site identification is: Rohm & Haas Co. - Corodel Plant NCD990714479, Cedar Creek Rd, Fayetteville. The correct listing is already on the ERRIS List and a PA is being completed for the site. The RCRA ID number is also NCD990714479.

Hoover Universal, Inc.  
1131 Blandwood Circle  
High Point, N. C. 27261

NCD990715625  
Guilford County

Hoover notified for some 600 gallons of paint sludges and solvents stored on site since 1972 in steel drums. The wastes were properly disposed of under RCRA. Past hazardous waste disposals were also requested and have been noted. No disposals on-site.

Based on the review of available information we recommend that no further action is required at this site. It is therefore requested that Hoover Universal be placed on the inactive ERRIS List.

Indian Grave Gap Drum Disposal  
SR # 1513  
Lenoir, N. C. 28645

NCD980839757  
Caldwell County

In April of 1984 and undetermined quantity of relatively poor condition 55 gallon drums containing sludges and solids were reported to this office. Analyses of samples taken indicate some of the drums may contain hazardous wastes, heavy metals and organic solvents. This remote area, accessible by dirt road, has been used as a garbage dump for many years. Although no public health risks have been associated with this site a medium priority for site inspection is recommended. The SI would determine number and condition of drums, identify hazardous constituents present and check for wastes migration potential. The use of aerial photographs will probably be requested for the SI. An initial study for responsible parties should also be considered.

Therefore, based on the review of available information we recommend that this site remain on the active ERRIS List for further evaluation as a hazardous waste disposal site.

Photo Chemical Systems, Inc.  
11 N. Pine Street  
Wendell, N. C. 27591

NCD000831065  
Wake County

The company is no longer at this address, and will not be at its present address after September of this year. This operation sells commercial chemicals to its customers to use for plating and finishing of printed circuit boards. They notified under RCRA as a transporter, so they could dispose of their customers chemical plating wastes as a service to the customer. All hazardous waste is manifested to SCA. No disposals or releases of hazardous waste were reported for either location.

Based on the review of available information we recommend that no further action is required at this site. It is therefore requested that Photo Chemical Systems be placed on the inactive ERRIS List.

Woolfolk Chemical Works  
Wilson Road  
Wendell, N. C. 27591

NCD991277807  
Wake County

Woolfolk sold commercial brands of pesticides and herbicides in small prepackaged containers. They notified under RCRA as a precaution in case of a ruptured container or fire they would have an I.D. number. No disposals or releases were reported during the time they operated out of this location, 1978 to 1982. Woolfolk no longer operates in Wendell and has closed several such facilities, similar to this one, elsewhere in North Carolina.

Based on the review of available information we recommend that no further action is required at this site. It is also requested that Woolfolk be placed on the inactive ERRIS List.

DuPont  
Station Road  
Cedar Mountain, N. C. 28718

NCD003152329  
Transylvania County

DuPont notified under CERCLA 103(c) of two (2) disposal sites on plant property. One for acid disposals, 1958-1963 and the other for a gel with 170 ppm cadmium chloride, 1973-1980. DuPont later notified 3012 of additional disposal sites on plant property during an information request by this office. These other disposal sites range from nonhazardous garbage to hazardous liquid solvent disposals. As far as potential problem areas, the liquid solvent waste disposals are probably of greater concern than some of the other solid hazardous waste burials. None of these disposals have ever had subsurface monitoring for G-W contamination. No public health risks are associated with these disposals as they are all confined to company property, which in this case is quite extensive.

Based on the review of available information a medium to low priority for site inspection is recommended for this site. Future work at these disposal locations would evaluate them for groundwater contamination and potential for off-site migration and impact. It should also be noted that N. C. Solid Wastes Rules for sanitary landfills were in possible violation and should be investigated for possible monitoring requirements under those rules. This site should remain on the active ERRIS List.

DuPont/Brevard Plant

NCD980557920  
Transylvania County

This listing is an ERRIS List duplication and therefore request that it be removed from ERRIS. DuPont was on the list because of a 103(c) notification and a RCRA notification. This is one site and we request that DuPont be listed the same as in RCRA: DuPont NCD003152329. (see above for site priority, already in ERRIS)

Chloride Automotive Batteries  
2539 Timberlake Road  
Raleigh, N. C. 27604

NCD080894645  
Wake County

This site is on the ERRIS List because of a RCRA notification. Our investigation shows that it is not a disposal site and that all wastes generated were taken off-site for disposal or re-use at other company facilities. This is not a CERCLA site. The RCRA program is investigating the site for improper closure under RCRA when the facility stopped manufacturing batteries here in 1981.

Based on the review of available information we recommend that no further action is required at this site. Therefore, it is requested that Chloride be placed on the inactive ERRIS List.

Westinghouse - Meter & Light Division  
US #1 North  
Raleigh, N. C.

NCD003195963  
Wake County

This facility was placed on the ERRIS List due to notification under the RCRA program. However, investigation by this Branch shows that the facility does have an electroplating sludge pile/disposal area on site. According to our records, Westinghouse did not notify under a CERCLA 103(c) as required for hazardous waste disposal sites. It is possible they considered this "pile" to be storage and in that case should be addressed by RCRA. Further clarification of this matter is pending additional work by the RCRA program. If however, the hazardous waste is not addressed by RCRA we recommend a medium priority for site inspection at this time (SI completed 7-20-84). The SI should confirm the presence of the hazardous waste and sample for potential off-site migration. No public health risks noted.

Based on the review of available information we recommend that an investigation be initiated to determine the status of this site under RCRA or CERCLA and that the site remain on the active ERRIS List until the issue is resolved.



Note, past disposal activities of Westinghouse may lead to other disposal locations, off-site.

Southern Wood Piedmont Company  
Greenfield Street  
Wilmington, N. C. 28401

NCD058517467  
New Hanover County

This site was the location of a wood treating facility from 1933 to 1983. They used, spilled and disposed on-site creosote residues, pentachlorophenol residues as well as CCA mixtures. The company is trying to address some of the areas of concern under their closure with RCRA. The other areas will not be cleaned-up. The major CERCLA area reported is where creosote sludges and residues were disposed in a lagoon and later buried. The site is on the edge of the Cape Fear River and G-W is reported to be only 18" below the surface. Significant creosote contamination was visible during a site visit on 7-23-84. (Soil & Water)

Based on the review of available information, we recommend a medium priority for site inspection at this site. Therefore it is requested that Southern Wood Piedmont remain on the active ERRIS List as a hazardous waste disposal site.

Note: Site referred to EPA for FIT evaluation and SI.

Southern Wood Piedmont Company  
SR #2139  
Gulf, N. C. 27256

NCD053488557  
Chatham County

This site was reported by the company under a CERCLA 103(c) notification for disposal of creosote, PCP and CCA wood treating residues and sludges on site. The site was recommended for a medium priority for site inspection and referred to EPA for FIT evaluation. It was later learned that a FIT SI had been done in 1983. (Attached)

Based on the review of available information and the FIT SI a low priority for follow-up is recommended. This is based primarily on the conclusion that the FIT SI detected no off-site impact from past disposals. However, it is requested that this site remain on the active ERRIS List.

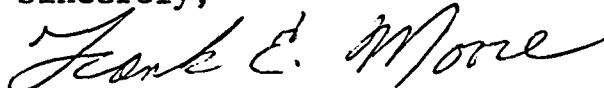
Note: The company is reportedly planning to do additional site clean-up in the future.

Mr. Walton Jones  
August 13, 1984  
Page 6

Please find attached the site summary sheet for the above sites.

If you have any questions or comments regarding the contents of this report, please call me.

Sincerely,

A handwritten signature in cursive script that reads "Frank E. Moore".

Frank E. Moore, Geologist

Solid & Hazardous Waste Management Branch  
Environmental Health Section

FEM:jj

PRELIMINARY ASSESSMENTS SUBMITTED TO EPA

Date August 13, 1984

EPA ID NUMBER	SITE NAME	DISPOSITION			NO FURTHER ACTION
		PRIORITY-INSPECTION HIGH	MEDIUM	LOW	
NCD991278839	N. State Chemicals, Inc.				X
NCD039047485	Rohm & Haas, Inc.		(Duplication)		X
NCD990715625	Hoover Universal, Inc.				X
NCD980839757	Indian Grave Gap Drum Disposal		X		
NCD000831065	Photo Chem Systems, Inc.				X
NCD991277807	Woolfolk Chemical Wks.				X
NCD980557920	DuPont/Brevard		(Duplication)		X
NCD003152329	DuPont		X to	(X)	
NCD080894645	Chloride Automotive Batt.				X
NCD003195963	Westinghouse		X		
NCD058517467	Southern Wood Piedmont		X		
NCD053488557	Southern Wood Piedmont		X to	(X)	



Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

July 6, 1984

Mr. Charles A. Burdell  
Southern Wood Piedmont Company  
P.O. Box 5447  
Spartanburg, SC 29304

Dear Mr. Burdell:

I have reviewed your June 8th remedial action proposal (received June 18, 1984) for the Wilmington site. The following comments must be addressed prior to the implementation of any plan.

- 1 - Sludge from the wastewater treatment system is considered K001. Any sludge generated at the Wilmington site would thus be classified as such and subject to RCRA.
- 2 - North Carolina has not recognized landfarming as a suitable method to handle wood preserving waste. The Solid and Hazardous Waste Management Branch has authorized land application in one case which was deemed an imminent hazard and in another case which had suitable geological conditions.
- 3 - The CCA waste is a RCRA hazardous waste as defined in 40 CFR 261.24 as adopted in 10 NCAC 10F .0029 and is thus subject to a closure plan as defined in 40 CFR 265.110-265.120 as adopted in 10 NCAC 10F .0033.
- 4 - If landfarming is allowed, any residual levels must be approved by the North Carolina Department of Human Resources. Proposed levels shall be submitted by Southern Wood Piedmont Company.
- 5 - Landfarming if approved, shall be limited to the upper six inches.
- 6 - The application rate of a commercial fertilizer shall be determined based upon soil analysis. Analysis can be obtained free through the Department of Agriculture. For additional details, contact me.

Mr. Charles A. Burdell

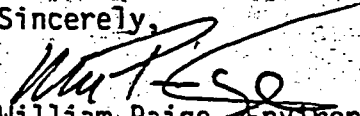
Page 2

July 6, 1984

- 7 - The selection of indicator parameters to monitor the degradation process shall occur prior to the implementation of the plan. As noted in earlier correspondence, more detail analysis will be required at some point to determine degradation efficiency. Sampling shall be performed to determine initial concentration levels.
- 8 - Discussion with the Department of Environmental Management's groundwater section suggest that a joint meeting arranged by myself should take place as soon as possible.

Please address the above concerns in a detail written plan (i.e., closure plan for RCRA related activities) and submit to me. Once received, I will begin the review process immediately so that remedial work may begin this summer.

Sincerely,

  
William Paige Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

WP:lp

cc: Mr. Jerry Rhodes  
Mr. Doug Holyfield

July 23, 1984 Meeting  
Southern Wood Piedmont  
Wilmington Site

William Puze	DHR
Michael S. Marsh	DNR CD
Jerry Rhoads	DHR
Doug Holfield	DHR
Frank E. Moore	DHR
Charles Burdell	Southern Wood Piedmont
E F Button	Rayonier
© HD Phillips	Southern Wood Piedmont

Decided that Southern Wood Pied.  
would ~~like~~ <sup>let</sup> the State know within  
7-10 days what areas would be  
handled under RCRA. A problem  
arose with the ~~had~~ application  
of possible ~~drippage~~ <sup>leakage</sup> from the tank area  
mixed with drippage from treated  
pole area.

Areas that are under RCRA today:  
(1) CCA area (2) PCP; ~~Creosote~~ <sup>Creosote</sup> ~~Comm.~~  
Product Storage area

POTENTIAL HAZARDOUS WASTE SITE

ASSESSMENT  
ON AND ASSESSMENT

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER  
NC | D058517467

NCD058517467 NEW HANOVER  
SOUTHERN WOOD PIEDMONT CO#  
PO BOX 450 GREENFIELD ST  
WILMINGTON NC 28401

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER

04 STATE | 05 ZIP CODE | 06 COUNTY | 07 COUNTY CODE | 08 CONG DIST  
New Hanover | | 065 | 07

09 COORDINATES LATITUDE | LONGITUDE  
34 12 45.0 | 077 57 15.0

10 DIRECTIONS TO SITE (Starting from nearest public road)

Map attached -

III. RESPONSIBLE PARTIES

01 OWNER (if known) | 02 STREET (Business, mailing, residential)  
City of Wilmington - N.C. Ports Authority

03 CITY | 04 STATE | 05 ZIP CODE | 06 TELEPHONE NUMBER  
Wilmington | NC | 28401 | ( )

07 OPERATOR (if known and different from owner) | 08 STREET (Business, mailing, residential)  
Southern Wood Piedmont Company | P. O. Box 5447

09 CITY | 10 STATE | 11 ZIP CODE | 12 TELEPHONE NUMBER  
Spartanburg | SC | 29304 | (803) 576-7660

13 TYPE OF OWNERSHIP (Check one)  
 A. PRIVATE  B. FEDERAL: \_\_\_\_\_ (Agency name)  C. STATE  D. COUNTY  E. MUNICIPAL  
 F. OTHER: \_\_\_\_\_ (Specify)  G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)  
 A. RCRA 3001 DATE RECEIVED: \_\_\_\_/\_\_\_\_/\_\_\_\_ MONTH DAY YEAR  B. UNCONTROLLED WASTE SITE (CERCLA 103(c)) DATE RECEIVED: \_\_\_\_/\_\_\_\_/\_\_\_\_ MONTH DAY YEAR  C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION BY (Check all that apply)  
 YES DATE 7/23/84 MONTH DAY YEAR  NO  
 A. EPA  B. EPA CONTRACTOR  C. STATE  D. OTHER CONTRACTOR  
 E. LOCAL HEALTH OFFICIAL  F. OTHER: \_\_\_\_\_ (Specify)  
CONTRACTOR NAME(S): \_\_\_\_\_

02 SITE STATUS (Check one) | 03 YEARS OF OPERATION  
 A. ACTIVE  B. INACTIVE  C. UNKNOWN | 1933 | 1983 |  UNKNOWN  
BEGINNING YEAR | ENDING YEAR

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED  
Creosote, pentachlorophenol (PCP), and CCA wood preserving residues. Several disposal areas on site, with spills, leaks and drippings in production areas. (52 ac. tract)

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION  
Surface and G-W contamination known as well as several acres of soil contamination. Part of the area is being addressed under RCRA - Most will not be. This site is adjacent to Cape Fear River. Referred to F.I.T. team for SI.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one, if high or medium is checked, complete Part 2 - Waste information and Part 3 - Description of Hazardous Conditions and Incidents)  
 A. HIGH (Inspection required promptly)  B. MEDIUM (Inspection required)  C. LOW (Inspect on time available basis)  D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT | 02 OF (Agency/Organization) | 03 TELEPHONE NUMBER  
William Paige | Engr. S & HW Mgt. Br., N. C. | 919 733-2178

04 PERSON RESPONSIBLE FOR ASSESSMENT | 05 AGENCY | 06 ORGANIZATION | 07 TELEPHONE NUMBER | 08 DATE  
O. W. Strickland | DHR | S&HW Mgt. Br. | 919 733-2178 | 7/24/84  
MONTH DAY YEAR



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER  
NC | D058517467

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

<p>01 PHYSICAL STATES (Check all that apply)</p> <p><input checked="" type="checkbox"/> A. SOLID  <input type="checkbox"/> B. POWDER, FINES  <input checked="" type="checkbox"/> C. SLUDGE  <input type="checkbox"/> D. OTHER _____ (Specify)</p> <p><input type="checkbox"/> E. SLURRY  <input checked="" type="checkbox"/> F. LIQUID  <input type="checkbox"/> G. GAS</p>	<p>02 WASTE QUANTITY AT SITE (Measure of waste quantity must be independent)</p> <p>TONS _____</p> <p>CUBIC YARDS <u>Unknown</u></p> <p>NO. OF DRUMS _____</p>	<p>03 WASTE CHARACTERISTICS (Check all that apply)</p> <p><input checked="" type="checkbox"/> A. TOXIC  <input type="checkbox"/> B. CORROSIVE  <input type="checkbox"/> C. RADIOACTIVE  <input checked="" type="checkbox"/> D. PERSISTENT</p> <p><input checked="" type="checkbox"/> E. SOLUBLE  <input type="checkbox"/> F. INFECTIOUS  <input type="checkbox"/> G. FLAMMABLE  <input type="checkbox"/> H. IGNITABLE</p> <p><input checked="" type="checkbox"/> I. HIGHLY VOLATILE  <input type="checkbox"/> J. EXPLOSIVE  <input type="checkbox"/> K. REACTIVE  <input type="checkbox"/> L. INCOMPATIBLE  <input type="checkbox"/> M. NOT APPLICABLE</p>
---	--	--

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Yes		Several on-site disposal areas estimate of ditch 500' x 25' x 5'
CLW	OILY WASTE	500,000	gallons	
SCL	SOLVENTS			
PSD	PESTICIDES			
CCC	OTHER ORGANIC CHEMICALS	yes		
ICC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Yes		Chromium from CCA

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently used CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SLU	Creosote		Landfill & OD		
OLW	Creosote		Landfill		
	Pentachlorophenol	87-86-5			
OOC	PCP (penta)	87-86-5	OD LF		
MES	CCA Chromated, Copper Arsenate		OD LF		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (List specific references, e.g., State Med. Service Reports, Reports)

RCRA Files  
Site Visit 7-23-84





POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D058517467

II. HAZARDOUS CONDITIONS AND INCIDENTS

01  A. GROUNDWATER CONTAMINATION      02  OBSERVED (DATE: 7-23-84)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

G-W is contaminated, - oil sheen visable on water. Water table reported 18" below surface - discharge to Cape Fear River and Greenfield Creek.

01  B. SURFACE WATER CONTAMINATION      02  OBSERVED (DATE: 7-23-84)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

Observed oily sheen on water in several areas on site.

01  C. CONTAMINATION OF AIR      02  OBSERVED (DATE: 7-23-84)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

Votatiles coming off "tars" in large storage tanks

01  D. FIRE/EXPLOSIVE CONDITONS      02  OBSERVED (DATE: \_\_\_\_\_)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

In tank storage area - large tanks were cut open to clean out the bottoms. Very high BTU & votatile.

01  E. DIRECT CONTACT      02  OBSERVED (DATE: \_\_\_\_\_)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

N/A

01  F. CONTAMINATION OF SOIL      02  OBSERVED (DATE: 7-23-84)       POTENTIAL       ALLEGED  
03 AREA POTENTIALLY AFFECTED: 50 ac.      04 NARRATIVE DESCRIPTION  
(ACRES)

Contamination is greater in tank storage and production areas - less in finished product storage areas - plus disposal sites. (see maps)

01  G. DRINKING WATER CONTAMINATION      02  OBSERVED (DATE: \_\_\_\_\_)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

None reported

01  H. WORKER EXPOSURE/INJURY      02  OBSERVED (DATE: \_\_\_\_\_)       POTENTIAL       ALLEGED  
03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

None reported

01  I. POPULATION EXPOSURE/INJURY      02  OBSERVED (DATE: \_\_\_\_\_)       POTENTIAL       ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_      04 NARRATIVE DESCRIPTION

N/A



WILMINGTON

sketch & Notes  
Site Visit 7-27-84  
F.M.

GATE  
To POTW

OFFICE  
LOCKER ROOM

Greenfield Creek

NPDES

#1 Superfund Area  
Covered/Filled  
Trench area w/  
Creosote Sludges  
BLACK

Land Farm Areas

Heavy Soil  
Contaminated

WATER TREATMENT

SETTLING BASIN

TREAT ROOM

DRIP AREA

TANK FARMS

Creosote  
Trench  
Area

DRIP AREA

DIKED CCA  
SYSTEM

TREAT ROOM

TANK FARM

w/ pile of  
Creosote sludge  
SHORE LINE  
covered w/ plastic

TRASH/FILL AREA

Fiber Press Tars  
disposed of in dikes  
as core material

CAPE FEAR  
RIVER

NPDES Cooling

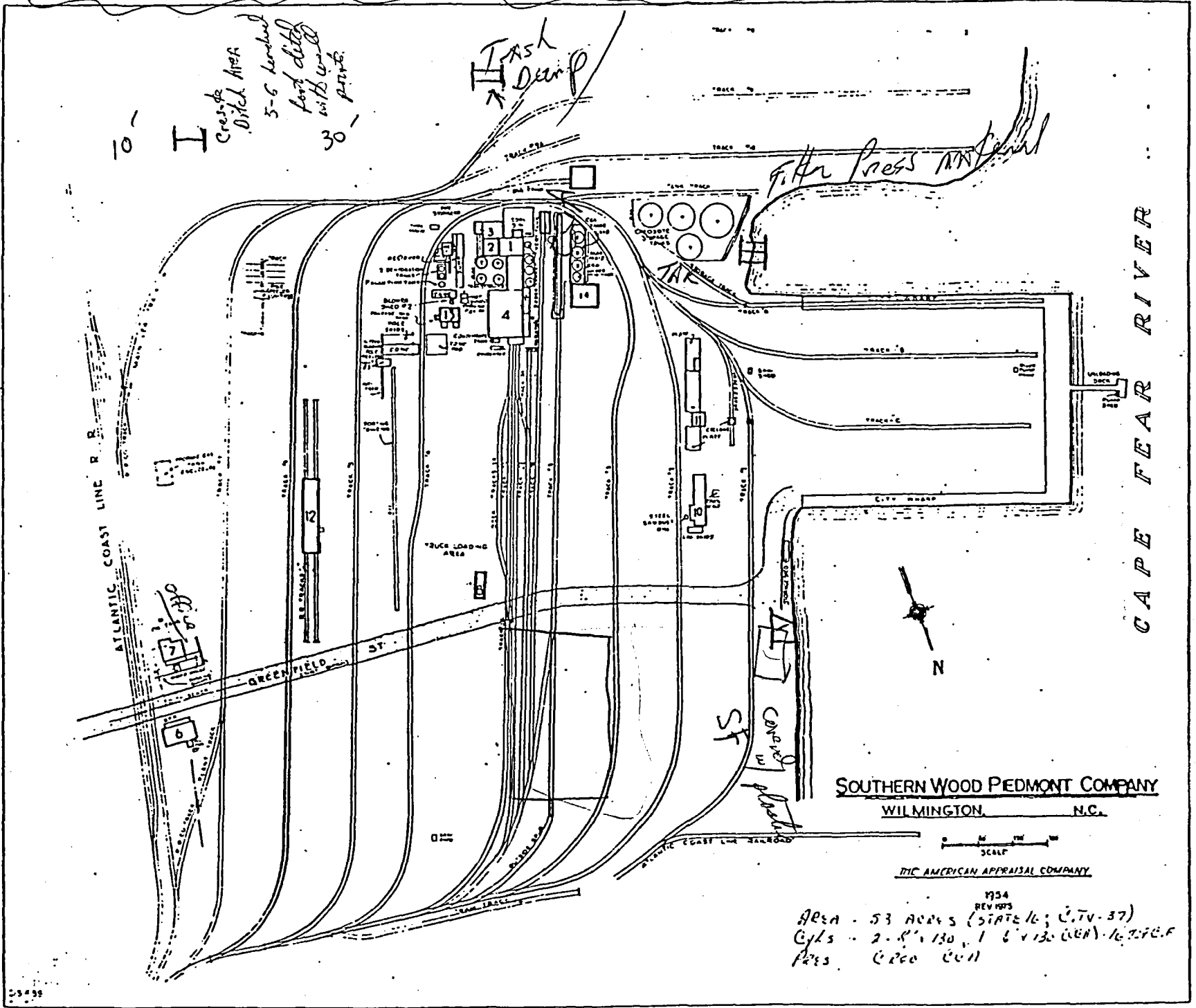
0 60 120 180  
SCALE

*Greenfield  
Creek*

*10-  
I  
Cross the  
Ditch Area  
5-6 hundred  
foot ditch  
with water  
30-  
private*

*Trash  
Dump*

*Filter Press Material*



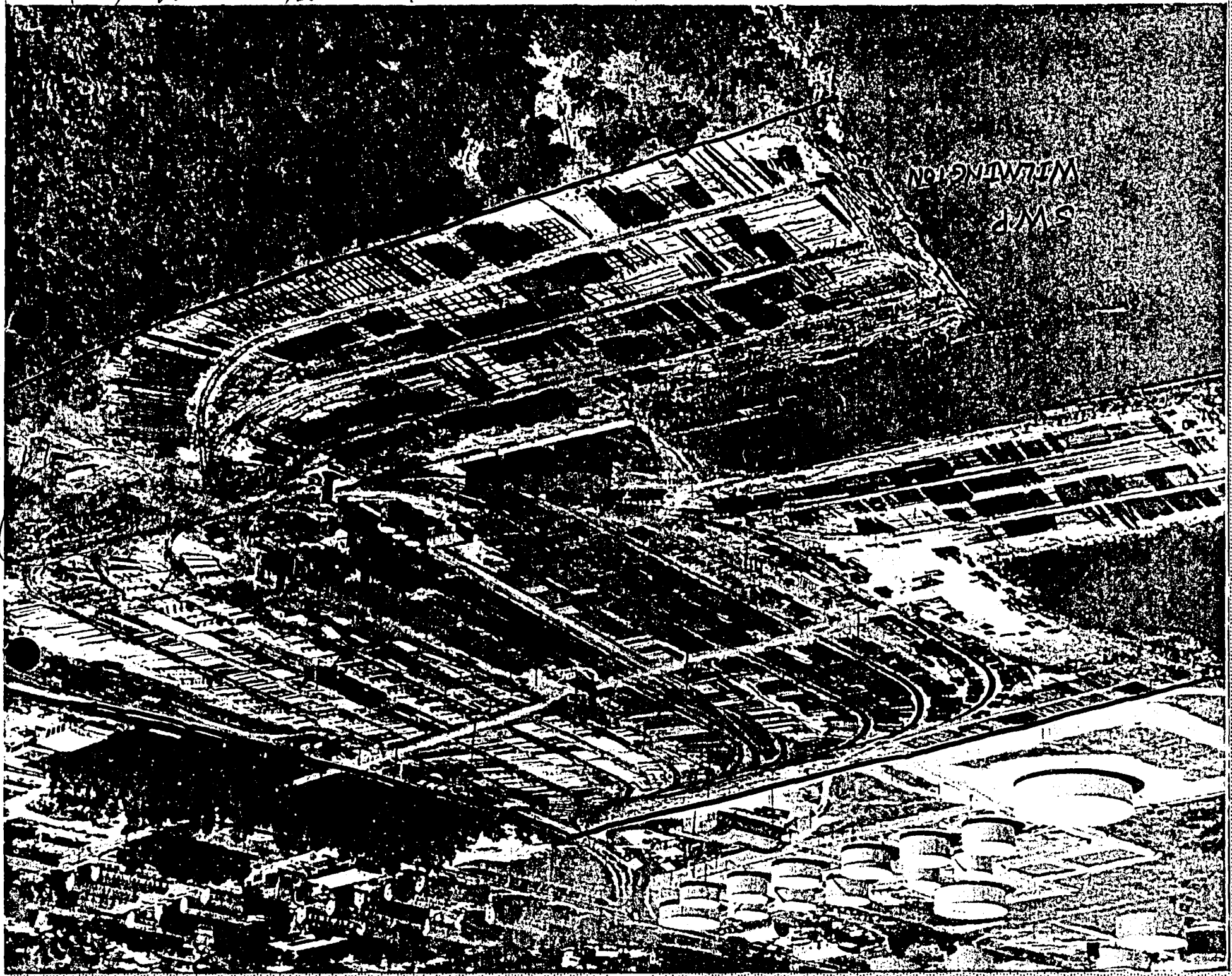
**SOUTHERN WOOD PEDMONT COMPANY**  
WILMINGTON, N.C.

SCALE  
1" = 100'  
TIC AMERICAN APPRAISAL COMPANY

Area - 53 acres (STATE 16; C.T.V. 37)  
Cyls - 2 - 8" x 130, 1 - 6" x 130 (CEN) 16, 2 - 20" F  
Pcs - 6200 (CEN)

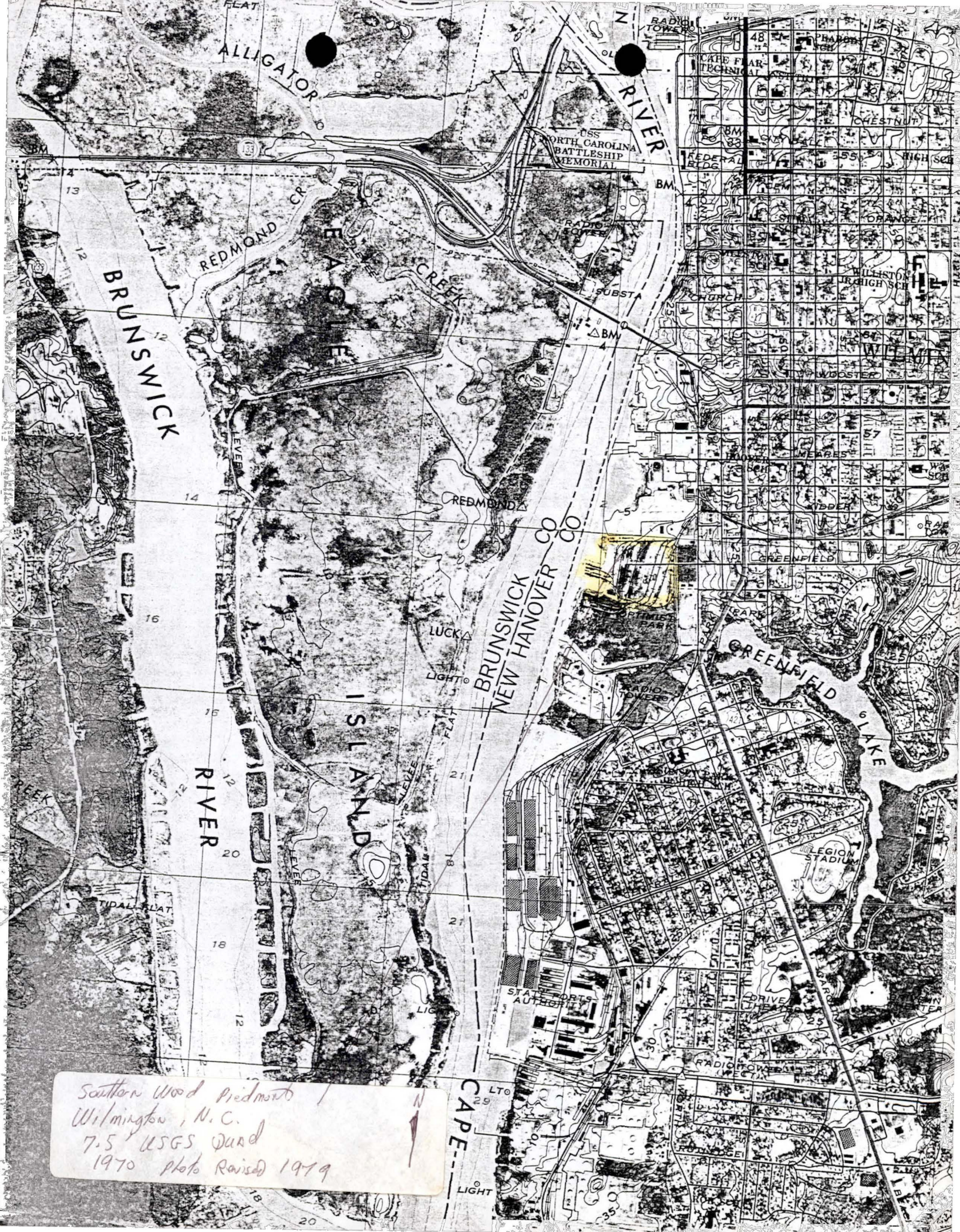
Original on file - RDA (W)

Supernat Crasside Disposal Area



WILMINGTON  
SVP





ALLIGATOR

RIVER

BRUNSWICK

REDMOND CR

EA

CREEK

USS NORTH CAROLINA BATTLESHIP MEMORIAL

BRUNSWICK NEW HANOVER CO

ISLAND

GREENFIELD

RIVER

LEGION STADIUM

STATE PORTS AUTHORITY

CAPE LIGHT

Southern Wood Piedmont /  
Wilmington, N.C.  
7.5 USGS Quad  
1970 photo Raised 1979



P. O. Box 5447  
Spartanburg, S. C. 29304

Phone 803/576-7660



## Southern Wood Piedmont Company



11-M-1.10.7  
June 8, 1984

Mr. William Paige  
Solid and Hazardous Waste Management Branch  
N. C. Department of Human Resources  
Box 2091  
Raleigh, N. C. 27602

Dear Mr. Paige:

Enclosed please find the detailed procedure we plan to follow in cleaning up our former Wilmington, N. C. plant site. As you know, aerobic breakdown of the wood preservatives is accelerated as temperature increases. In order to take advantage of the summer temperatures and the remainder of our lease term we plan to implement the enclosed procedure at once.

The wood preservative wastes we are subjecting to bacterial degradation are not classified as a hazardous waste under the Resource Conservation Recovery Act or North Carolina's solid waste management regulations. Therefore, we are not asking your office to approve this practice or to issue any form of permit. What we do ask, is that you inform us at once if you believe this procedure will violate any laws or regulations. In the absence of such notice we plan to proceed, as we believe this is the best way to clean the site of residual wood preservatives.

You asked Mr. Ned Button about the stage of the tide corresponding to the November 1982 groundwater samples. We did not record the time these samples were taken so we cannot tie them into the tide stage. We did not observe a significant change of water level in the wells as tide level changed. We do not believe that the groundwater is affected by tide change in this area.

In answer to your question regarding the direction of groundwater flow, our groundwater consultant, Law Engineering and Testing Company, believes that it is flowing somewhat parallel but towards the shoreline. This would mean it is flowing from the city parcel towards the port parcel towards the mouth of the creek south of the plant site.

June 8, 1984

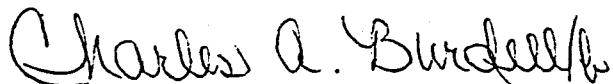
-page 2-

I did meet again with Mr. Farris of the City and explained in more detail our plans.

We have changed the scope of the procedures to be used and modified the methodology to accommodate the suggestions you made with respect to our initial suggestion submitted on February 13, 1984. If you have further suggestions with respect to monitoring of methodology we would be pleased to discuss them with you, but again we need to know about them in the immediate future.

Very truly yours,

SOUTHERN WOOD PIEDMONT COMPANY



Charles A. Burdell  
Director, Technical Services

CAB:bsb

attachments

cc: E. F. Button - Stamford  
E. L. Gibbs

0832T



The following is a list of attachments referenced in the attached proposal. Attachments 1 thru 7 were included in the package mailed to you February 13. Please refer to them.

- Attachment 1 - Map with Locations of Various Deposits
- Attachment 2 - Summary of Groundwater Data
- Attachment 3 - Copy of Law Engineering Testing Company's Findings
- Attachment 4 - Map showing Cape Fear Water Locations
- Attachment 5 - Summary Memo Regarding the Monitoring of the NPDES Discharge
- Attachment 6 - University of Florida Study
- Attachment 7 - EPA Submittal by MSU Illustrating the Breakdown of PCP in the Soil

The below listed Attachments 8 thru 10 are included in this package:

- Attachment 8 - Landfarming Areas Diagram
- Attachment 9 - Landfarming Lysimeter Locations
- Attachment 10 - Extraction and Analytical Procedure/Methods

PROPOSED CLEANUP PROGRAM FOR SOUTHERN WOOD PRESERVING COMPANY  
WILMINGTON, N. C. PLANT SITE

I. Site Description

The plant is located in Wilmington, New Hanover County, N. C. at the end of Greenfield Street on the Cape Fear River (map attached). There are approximately 39 acres leased from the city and about 7 acres leased from the State Port Authority (SPA). The soil is classified as gray clay and sand to a 3.5' depth by Froehling and Robertson, Inc. There was a 24-hour water table of 19" in the treatment room area when sampled in May of 1971.

II. Site History

The site was originally developed during World War I as a plant to construct concrete barges and ships. Northstate Creosote Company constructed a wood treating plant on the site about 1932. This plant was purchased by the Taylor-Colquitt Company in 1935. In 1964, Southern Wood Preserving Company (now SWP) purchased the Taylor-Colquitt Company and has operated it since then. Through 1971, creosote coal tar was the only preservative used. In 1972, a separate treating system was installed to use the water salt preservatives: copper, chromium, and arsenic (known as CCA). In 1980, penta-petroleum preservative treatment was added using an existing creosote treating cylinder.

In 1975, a large area of cull and broken poles along the city/Port District property line was cleaned up. At this time, a permit was obtained to close a surface drainage ditch on the Port District property which contained settled creosote sludge. This buried material was reported under Superfund (see Section A).

There has never been any aeration water treatment at the Wilmington plant. Original waste water treatment was simple settling and discharge. In recent years, process waste water was given thorough settling and discharged to the Wilmington sewage treatment plant (POTW). More recently, since 1980, the settled effluent was further clarified using a Wemco flotation clarification system prior to discharge to the POTW. Oil and float separated in the settling tanks and in WEMCO have been recycled to the process or burned for fuel value in the plant waste wood boiler. No KOOL sludge was ever generated by this treatment approach.

III. Current Status of Site

The plant ceased production in May of 1983. Removal of physical inventory and plant equipment started at that time. At present, all material except three rail tracks have been removed from the State Port Authority property. The ditch area covered in 1975 has grass growing on it. SPA personnel have inspected the site and stated it was acceptable for their use. About one-half of the area nearest the river was used for storage of treated poles and piling.

All the wood inventory has been removed from the city's acreage and raked reasonably clean. The CCA treating tanks and cylinder have been removed. The oil preservative tanks have been removed. The pole machine and maintenance equipment have been removed. All of the tanks and equipment used in handling the process waste water have been removed. The tracks in front of the oil preservative cylinder have been removed back to the road crossing (about 200 feet). We are in the process of having the creosote sludge removed from the large storage tanks.

#### IV. Description of Treating Chemical Deposits

Please see attached map showing location of various deposits (Attachment 1).

##### A. Deposits Reported Under Superfund

A Superfund report was filed in June of 1982. A copy of this report is attached, listing four deposits. When this report was filed, we were not clear as to what K001 sludge was. We have since learned that it is sludge resulting from the aerobic stabilization of wood preservative waste waters. As mentioned in section II, no such sludge was ever created at the Wilmington plant.

##### 1. Superfund Area I, Covered Sludge Ditch

This area was described in section II above. Creosote sludges from early plant operations were buried when this ditch was filled.

##### 2. Superfund Area II, Trash Dump Area

This area is a general waste landfill used by the plant for many years. It consists almost exclusively of wood waste, dirt, and metal waste. Small amounts of creosote cleanup material were deposited here from time to time. It was listed under Superfund because of the suspected presence of creosote material.

##### 3. Superfund Area III, Dike Area

Old, hard and solid creosote residuals similar to road tar were used to seal some of the earthfilled dike near the south slip.

##### 4. Superfund Area IV, Trash Fill Area

Part of the north slip was filled with trash a number of years ago. This mill waste consisted of mainly wood waste and metal bands. Some creosote sludge was deposited on the top of part of this area.

## B. Operating Area Deposits

### 1. Track Area

The track area in front of the cylinder was inspected in 1982 by your office and Mr. Ray Church. Two soil samplings were made which showed residuals to a depth of 18" about 10 feet in front of the cylinder and to 6" deep about 200 feet out in front of the cylinder.

### 2. Treating Areas

The soil areas around both oil treating room buildings have treating chemical residuals. Soil around the working tanks is noticeably contaminated with oil to about two feet deep. The soil area around the waste water-oil recovered tank system is noticeably discolored to about a one-foot depth.

### 3. Large Storage Tank Containment Area

The soil in this area contains creosote residuals to about a foot in depth.

### 4. Treated Product Storage Areas

Relatively large areas on both Port District and city property have a small degree of creosote residuals in the soil as evidenced by some discoloration. These are areas where the treated poles were stored prior to shipment.

### 5. CCA Storage Tank Area

Soil around the CCA storage tanks is discolored and has some CCA chemical content.

### 6. Storage Tank Sludges

Varying amounts of sludge is present in the bottom of the various treating tanks.

## V. Proposed General Approach to Cleanup of Chemical Residuals

### A. Landfarming of Contaminated Soils

We propose to utilize the landfarming method to reduce the oil preservative residuals in non-hazardous contaminated soils. This landfarming approach has already been recognized by the North Carolina Solid and Hazardous Waste Management Branch for other wood preserving plant locations. We propose to conduct the landfarming on treated pole storage areas at the Wilmington plant where there are already low levels of preservative residuals in the soil.

NO

Monitoring wells have been in place at the Wilmington site since 1981. The effect on groundwater from years of plant operation is therefore known. Preservative chemicals have been detected at low levels in some of the groundwater samples. A summary of groundwater data is attached (Attachment 2). Our groundwater consultant, Law Engineering, is convinced that this groundwater discharges to the Cape Fear River. Further, there are no groundwater uses that would be impacted. A copy of Law Engineering's findings is also attached (Attachment 3). The Cape Fear River has been tested upstream and downstream at the plant. Treating chemicals were not detected indicating no impact by the site (Attachment 4). The surface drainage at the NPDES discharge to ditch drainage to Greenfield Creek has been monitored and reported for several years. This data is on file at your department, a summary memo is attached (Attachment 5).

We realize that some of our contaminated soils contain traces of pentachlorophenol (PCP). For this reason, an acceptable residual concentration for PCP needs to be established. The University of Florida, Gainesville has established 0.475 ppm as such a concentration. We have attached their study used to develop this proposed standard (Attachment 6). We propose to use 0.475 ppm PCP as an acceptable residual level for soil requiring landfarming, and to consider landfarmed soil having less than this concentration to be acceptable (with respect to PCP). We have also attached information submitted to EPA by Mississippi State University illustrating the breakdown of PCP in the soil (Attachment 7).

We propose to landfarm the contaminated soils from the following areas:

1. Track area.
2. Treating areas.
3. Treated product storage areas.


These areas have been contaminated with treating chemical residues from working solutions and/or treated product drippage. These deposits occurred slowly over many, many years and tended to "weather" as they were deposited. We are convinced that these contaminated soils are not classified as hazardous waste under RCRA definitions. We are, therefore, not proposing to landfarm RCRA hazardous material.

It is our understanding that standards for creosote residuals in landfarmed soil have not been established as yet. As this is somewhat a site specific question, we propose to discuss this with the Agency after the six-month testing program is completed. We have been in contact with Dr. Gary McGinnis of Mississippi State University regarding possible standards. We will be submitting information that he has developed separately.

B. Disposition of Other Contaminated Material

Following is an outline of our planned disposition of other contaminated material present on the site.

1. Superfund Area I, Filled Ditch

We are currently doing further sampling of this area. We will discuss proposed disposition with the owner, the State Port District, prior to finalizing our disposition plans. 

2. Superfund Area II, Trash Dump Area

We propose to leave this area as it is since there is very little creosote material here and it is dispersed in large amounts of wood waste.

3. Superfund Area III, Dike Area

We propose to remove the large chunks of creosote contaminated soil; and landfarm in a treated pole storage area.

4. Superfund Area IV, Trashfill Area

We propose to remove the creosote sludge piled on top of the area and send to a permitted hazardous waste landfill.

Plant Operating Areas

1. Track Area

We propose to remove the visually contaminated soil and to landfarm in a treated pole storage area. After removal of the contaminated soil, we would till the underlying soil in place, soil moisture conditions permitting, to obtain the maximum breakdown of any remaining chemicals. We would not follow the full landfarm procedure, but would fertilize, till and retill one to three times.

2. Oil Treating Areas

We propose to handle as described in Section 1 above.

3. Large Storage Tank Containment Area

The visually contaminated soil will be removed and sent to a hazardous waste landfill. If dry enough, we will till the underlying soil as outlined in section 1 above.

4. Treated Product Storage Area

Those treated pole storage areas not used for landfarming of heavily contaminated soil would be tilled in place as outlined in section 1 for the underlying soil.

5. CCA Storage Tank Area

We propose to remove soil containing CCA salts, as determined by the EPA EP toxicity tests. Some soil has been removed and will be sent to a permitted hazardous waste landfill. Further tests will be made to determine if more soil needs to be removed. If we elect to encapsulate some contaminated soil, we will submit a separate proposal.

6. Storage Tank Sludges

The CCA sludge has already been removed and sent to a hazardous waste landfill.

508  
oil  
?

We are in the process of removing the sludges from the bottom of the various oil tanks. These sludges are being burned in one of our pulp mill waste wood boilers (the State of Georgia has approved) to recover heat value. Any sludge that cannot be burned will be sent to a permitted hazardous waste landfill.

## VI. Proposed Landfarming Procedure

1. The landfarming will be done in either the Area LF1 or Area LF2, or both, if needed, outlined on the plant layout diagram (Attachment 8). These areas are already lightly contaminated with treating chemical residues from many years use as treated pole storage.
2. The designated landfarm areas will be bermed and ditched to prevent rain runoff or runoff.
3. Three to six suction vacuum lysimeters will be installed at one, two, and three foot depths to monitor soil water quality. The proposed lysimeter cluster locations are indicated on the landfarm layout diagram (Attachment 9). These lysimeter clusters will be protected by barricades to prevent damage by tilling equipment. We will install two monitoring wells immediately downgradient of the landfarm areas. We propose to utilize the existing upgradient well. A proposal showing well design and location will be submitted shortly. We are convinced that these samples will demonstrate that the wood treating chemicals are breaking down, not leaching into the groundwater.
4. Contaminated soil from the areas outlined in Section V A above; the treating cylinder track area and treating area; will be spread in a maximum two inch layer over the landfarm area. This will be at a maximum additional rate of 20% of the underlying soil when tilled to a depth of ten to twelve inches. From previous analysis these soils contain less than 5% creosote.
5. Nutrients will be added at an application rate of 200 lbs. per acre | as commercial fertilizer (10/10/10 or 10/5/5). *J. P. P.*
6. The initial application of contaminated soil and fertilizer will be thoroughly tilled into the underlying soil to a depth of ten to twelve inches.
7. The soil will be tilled weekly, weather permitting, to promote biological and photochemical breakdown of treating chemical residuals.
8. Sampling and Testing Schedules

Extraction and analytical procedures are outlined in Attachment 10.

- a. Lysimeters will be sampled for soil water just prior to application of contaminated soil to the landfarm areas, and every two months thereafter. Soil water will be analyzed for total phenol content using the Standard Methods Test 222 Method and for PCP and the creosote compounds using the gas chromatograph method (G/C), EPA SW8040 through 8100.
- b. Soil will be sampled immediately after the initial tilling is completed. It will be resampled after one, two, four, and six months. Soil samples will be sampled at the points indicated on the landfarm diagram (Attachment 8). Samples will be obtained at 0-3", 9-12", and 21-24" depths. The soil samples from each of the two landfarm areas will be composited for equal depths for analysis.



c. All samples will be analyzed for total extractable phenol. The initial samples and the four and six-month samples will be analyzed by G/C for other organics.

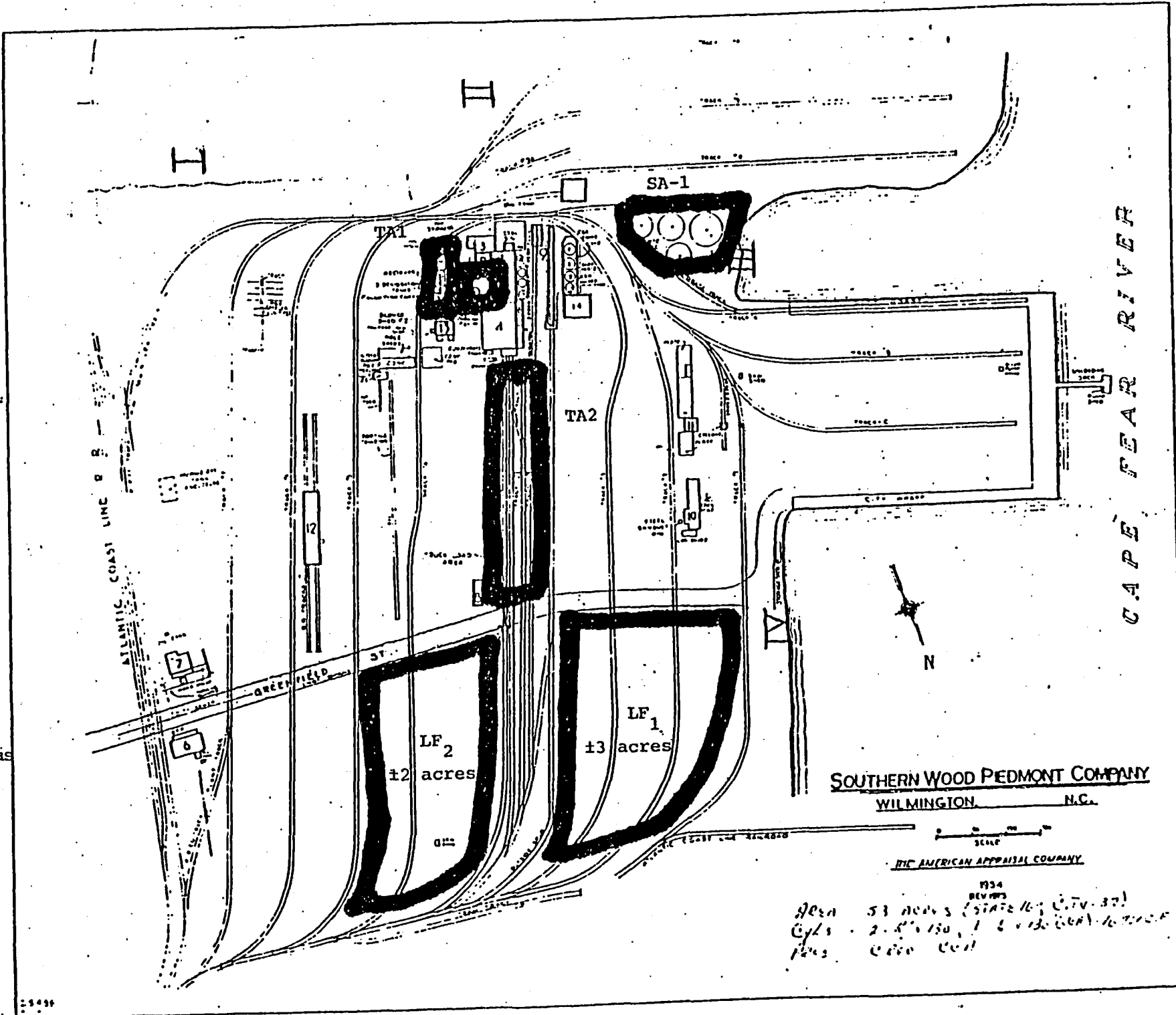
9. After the six month sample analyses results are available, all results will be reviewed with the North Carolina agency.

#### VII. Outline of Tilling Procedure

All lightly contaminated treated product storage areas and the soil underlying areas not utilized for landfarming where heavily contaminated soil is removed will be tilled to encourage breakdown of any residual treating chemicals that might be present. Some of the areas where soil is removed may be too wet to till due to soil moisture conditions.

1. The overlying soil will be removed for landfarming; or for offsite disposal in the case of the soil around the creosote storage tanks. No soil will be removed from the treated pole storage areas.
2. Immediately after soil removal, fertilizer will be added at the rate of 200 lbs. per acre and the underlying soil will be tilled, soil moisture content permitting.
3. Tilling will be repeated weekly for the first 12 to 16 weeks, weather permitting, and will be done once per month until the six months.
4. After six months of tilling, soil samples will be obtained at 0-3", 9-12", and 21-24" depths.
5. Soil samples will be composited by depth for each major area and analyzed for organics by G/C.
6. Analytical results will be reviewed with the agency.



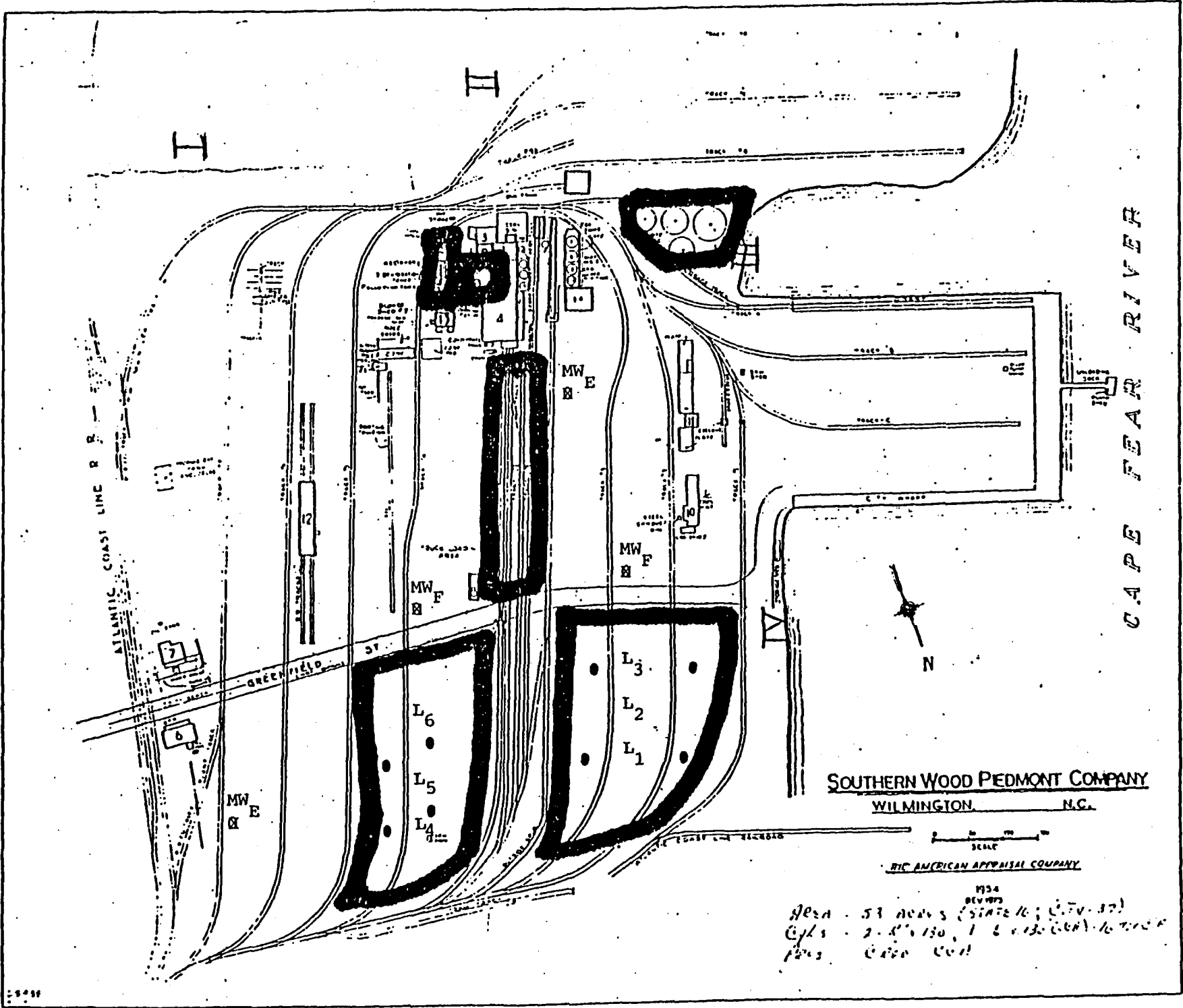


- NOTES:  
 A=Stg. Tank Area  
 A=Treating Areas  
 F=Landfarming Areas  
 F<sub>1</sub> = ±13 acres  
 F<sub>2</sub> = ±12 acres

SOUTHERN WOOD PIEDMONT COMPANY  
 WILMINGTON, N.C.

THE AMERICAN APPRAISAL COMPANY

1954  
 REVISED  
 Area 53 acres (STATE LOG C.T.V. 37)  
 Cyls. 2, 5, 150, 1, 2, 130 (C.A.) 1, 2, 130  
 Piles 000 001



NOTES:

- L1-6=Lysimeters
- =Soil Sampling Points
- MW =Monitoring Wells
- E =Existing
- F =To be added by Law Eng. Recommendation

SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, N.C.

SCALE  
RIC AMERICAN APPRAISAL COMPANY

1934  
REV 1975  
Area - 57 acres (STATE 10; C.F.V. 32)  
C/L's - 2, 4, 130, 1 & 130 (C.F.V.) 10, 130  
PWS Case 001

METHODS OF ANALYSIS

Phenol - EPA SW846, 261 or Standard Method for Water and Wastes, Method 222

O & G - Standard Method for Water and Wastes, 209A

Organic - Test Methods for Evaluating Solid Waste, SW846, 8040-8100

CCA - Standard Methods for Water and Wastes, 307B (Cu)  
104A (As)  
308C (Cu)



## Southern Wood Piedmont Company

11-M-1.10.7  
February 13, 1984



Mr. William Paige  
Solid and Hazardous Waste Management Branch  
N. C. Department of Human Resources  
Box 2091  
Raleigh, N. C. 27602

Dear Mr. Paige:

You will recall last November we had a meeting at our Wilmington plant to inspect the site and discuss methods and alternatives to cleaning up the plant soils containing residuals of the wood preservatives. The purpose of this letter is to propose a conceptual approach for final cleanup of the plant site. We would like to meet with your group in Raleigh after you have had an opportunity to review our proposed approach. At this meeting, we would hope to work out any details necessary to obtain your approval to proceed.

We believe that this proposed cleanup program will clean the plant site to a degree that will allow safe use for subsequent activities by future tenants. If you need any additional information prior to our meeting with you, please contact me by phone. We would like to establish a date for a meeting as soon as you have reviewed this material.

Sincerely,

SOUTHERN WOOD PIEDMONT COMPANY

A handwritten signature in cursive script, appearing to read 'Charles A. Burdell'.

Charles A. Burdell  
Director, Technical Services

CAB:bsb

cc: Ray Church/H. O. Phillips/E. F. Button/E. L. Gibbs

attachment

0632T

PROPOSED CLEANUP PROGRAM FOR SOUTHERN WOOD PIEDMONT  
WILMINGTON, N. C. PLANT SITE

I. Site Description

The plant is located in Wilmington, Hanover County, N. C. at the end of Greenfield Street on the Cape Fear River (map attached). There are approximately 39 acres leased from the city and about 7 acres leased from the State Port Authority (SPA). The soil is classified as gray clay and sand to a 3.5' depth by Froehling and Robertson, Inc. There was a 24-hour water table of 19" in the treatment room area when sampled in May of 1971.

II. Site History

The site was originally developed during World War I as a plant to construct concrete barges and ships. Northstate Creosote Company constructed a wood treating plant on the site about 1932. This plant was purchased by the Taylor-Colquitt Company in 1935. In 1964, Southern Wood Preserving Company (now SWP) purchased the Taylor-Colquitt Company and has operated it since then. Through 1971, creosote coal tar was the only preservative used. In 1972, a separate treating system was installed to use the water salt preservatives: copper, chromium, and arsenic (known as CCA). In 1980, penta-petroleum preservative treatment was added using an existing creosote treating cylinder.

In 1975, a large area of cull and broken poles along the city/Port District property line was cleaned up. At this time, a permit was obtained to close a surface drainage ditch on the Port District property which contained settled creosote sludge. This buried material was reported under Superfund (see Section A).

III. Current Status of Site

The plant ceased production in May of 1983. Removal of physical inventory and plant equipment started at that time. At present, all material except three rail tracks have been removed from the State Port Authority property. The ditch area covered in 1975 has grass growing on it. SPA personnel have inspected the site and stated it was acceptable for their use. About one-half of the area nearest the river was used for storage of treated poles and piling.

All the wood inventory has been removed from the city's acreage and raked reasonably clean. The CCA treating tanks and cylinder have been removed. The oil preservative tanks have been removed. The pole machine and maintenance equipment have been removed. All of the tanks and equipment used in handling the process waste water have been removed. The tracks in front of the oil preservative cylinder have been removed back to the road crossing (about 200 feet). We are in the process of having the creosote sludge removed from the large storage tanks.

IV. Description of Treating Chemical Deposits

Please see attached map showing location of various deposits (attachment 1).

A. Deposits Reported Under Superfund

A Superfund report was filed in June of 1982. A copy of this report is attached, listing four deposits. When this report was filed we were not clear as to what K001 sludge was. We have since learned that it is sludge resulting from the aerobic stabilization of wood preservative waste waters. No such sludge was ever created at the Wilmington plant. Therefore, the material we wish to landfarm is not a hazardous waste or a substance which actually should have been reported under Superfund. Nevertheless, for the purpose of this petition, we will refer to the areas concerned according to their Superfund report designation.

1. Superfund Area I, Covered Sludge Ditch

This area was described in section II above. Creosote sludges from early plant operations were buried when this ditch was filled.

2. Superfund Area II, Trash Dump Area

This area is a general waste landfill used by the plant for many years. It consists almost exclusively of wood waste, dirt, and metal waste. Small amounts of creosote cleanup material were deposited here from time to time. It was listed under Superfund because of the suspected presence of creosote material.

3. Superfund Area III, Dike Area

Old, hard and solid creosote residuals similar to road tar were used to seal some of the earthfilled dike near the south slip.

4. Superfund Area IV, Trash Fill Area

Part of the north slip was filled with trash a number of years ago. This mill waste consisted of mainly wood waste and metal bands. Some creosote sludge was deposited on the top of part of this area.

B. Operating Area Deposits

1. Track Area

3. The track area in front of the cylinder was inspected in 1982 by yourself and Mr. Ray Church. Two soil samples showed residuals to a depth of 18" about the cylinder and to 6" deep about 200 feet from the cylinder.

*where*

2. Treating Areas

The soil areas around both oil treating room buildings have treating chemical residuals. Soil around the working tanks is noticeably contaminated with oil to about two feet deep. The soil area around the waste water-oil recovered tank system is noticeably discolored to about a one foot depth.

3. Large Storage Tank Containment Area

The soil in this area contains creosote residuals to about a foot in depth.

4. Treated Product Storage Areas

Relatively large areas on both Port District and city property have a small degree of creosote residuals in the soil as evidenced by some discoloration. These are areas where the treated poles were stored prior to shipment.

5. CCA Storage Tank Area

Soil around the CCA storage tanks is discolored and has some CCA chemical content.

6. Storage Tank Sludges

Varying amounts of sludge is present in the bottom of the various treating tanks.

V. Proposed General Approach to Cleanup of Chemical Residuals

We propose to utilize the landfarming method to reduce the oil preservative residuals in contaminated soil to an acceptable level. This landfarming approach has already been recognized by the North Carolina Solid and Hazardous Waste Management Branch for other wood preserving plant locations. We propose to conduct the landfarming on treated pole storage areas at the Wilmington plant where there are already low levels of preservative residuals in the soil.

Monitoring wells have been in place at the Wilmington site since 1981. The effect on groundwater from years of plant operation is therefore known. Preservative chemicals have been detected at low levels in some of the groundwater samples. A summary of groundwater data is attached (attachment 2). Our groundwater consultant, Law Engineering, is convinced that this groundwater discharges to the Cape Fear River. Further, there are no groundwater uses that would be impacted. A copy of Law Engineering's findings is also attached (attachment 3). The Cape Fear River has been tested upstream and downstream at the plant. Treating chemicals were not detected indicating no impact by the site (attachment 4). The surface drainage at the NPDES discharge to ditch drainage to Greenfield Creek has been monitored and reported for several years. This data is on file at your department, a summary memo is attached (attachment 5).



We realize that some of our contaminated soils contain traces of pentachlorophenol (PCP). For this reason, an acceptable residual concentration for PCP needs to be established. The University of Florida, Gainesville has established 0.475 ppm as such a concentration. We have attached their study used to develop this proposed standard (attachment 6). We propose to use 0.475 ppm PCP as an acceptable residual level for soil requiring landfarming, and to consider landfarmed soil having less than this concentration to be acceptable (with respect to PCP). We have also attached information submitted to EPA by Mississippi State University illustrating the breakdown of PCP in the soil (attachment 7).

We would suggest that a concentration of 15 ppm water extractable phenol be used to indicate adequate breakdown of the chemical constituents in creosote. It is our understanding that the North Carolina Solid and Hazardous Waste Management Branch has accepted this residual concentration in approving landfarming operations of creosote wastes elsewhere in the state.

Sludges from the treating chemical tanks are being removed from the site. These will be burned to recover heat value or sent to an approved hazardous waste disposal site. We are currently working with the State of Georgia to see if these creosote sludges can be burned in a pulp mill boiler.

We propose to encapsulate CCA contaminated soil in concrete. We would then use the resulting concrete for riprap at the plant site.

#### A. Superfund Areas

##### 1. Superfund Area I, Filled Ditch

We propose to excavate this area and to landfarm the discolored soil in one of the treated pole storage areas. Any buried wood waste would be hauled to the city landfill. The covering soil would be excavated until the concentration of phenols exceeds the 15 ppm residual level. The soil containing above residual level of phenols would be removed for landfarming. The ditch would then be filled with clean soil.

##### 2. Superfund Area II, Trash Dump Area

We propose to leave this area as it is since there is very little creosote material here and it is dispersed in large amounts of wood waste.

##### 3. Superfund Area III, Dike Area

We propose to remove the large chunks of old creosote sludge and landfarm in a treated pole storage area.

##### 4. Superfund Area IV, Trashfill Area

We propose to remove the creosote sludge piled on top of the area and landfarm in a treated pole storage area.

B. Plant Operating Areas

1. Track Area

We propose to remove the visually, heavily contaminated soil and to landfarm in a treated pole storage area. We would till the underlying soil in place to obtain the maximum breakdown of any chemicals in the underlying soil.

2. Oil Treating Areas

We propose to handle as described in Section B.1 above.

3. Large Storage Tank Containment Area

We propose to handle as described in Section B.1 above.

4. Treated Product Storage Area

Those treated pole storage areas not used for landfarming of heavily contaminated soil would be tilled in place. We propose to run a few spot checks on residual phenolic content to confirm that the landfarming criteria has been met. We expect that these areas are below the criteria at present.

5. CCA Storage Tank Area

We propose to remove soil containing CCA salts, as determined by the EPA EP toxicity tests, and encapsulate such soil in cement. The resulting concrete will be used for fill or for riprap on the site. The cement will be tested using the modified EP toxicity test supplied to us by your department.

6. Storage Tank Sludges

The CCA sludge has already been removed and sent to a hazardous waste landfill.

We are in the process of removing the sludges from the bottom of the various oil tanks as mentioned above. These sludges will be burned in one of our pulp mill boilers (if the State of Georgia approves) to recover heat value or will be sent to an approved hazardous waste landfill.

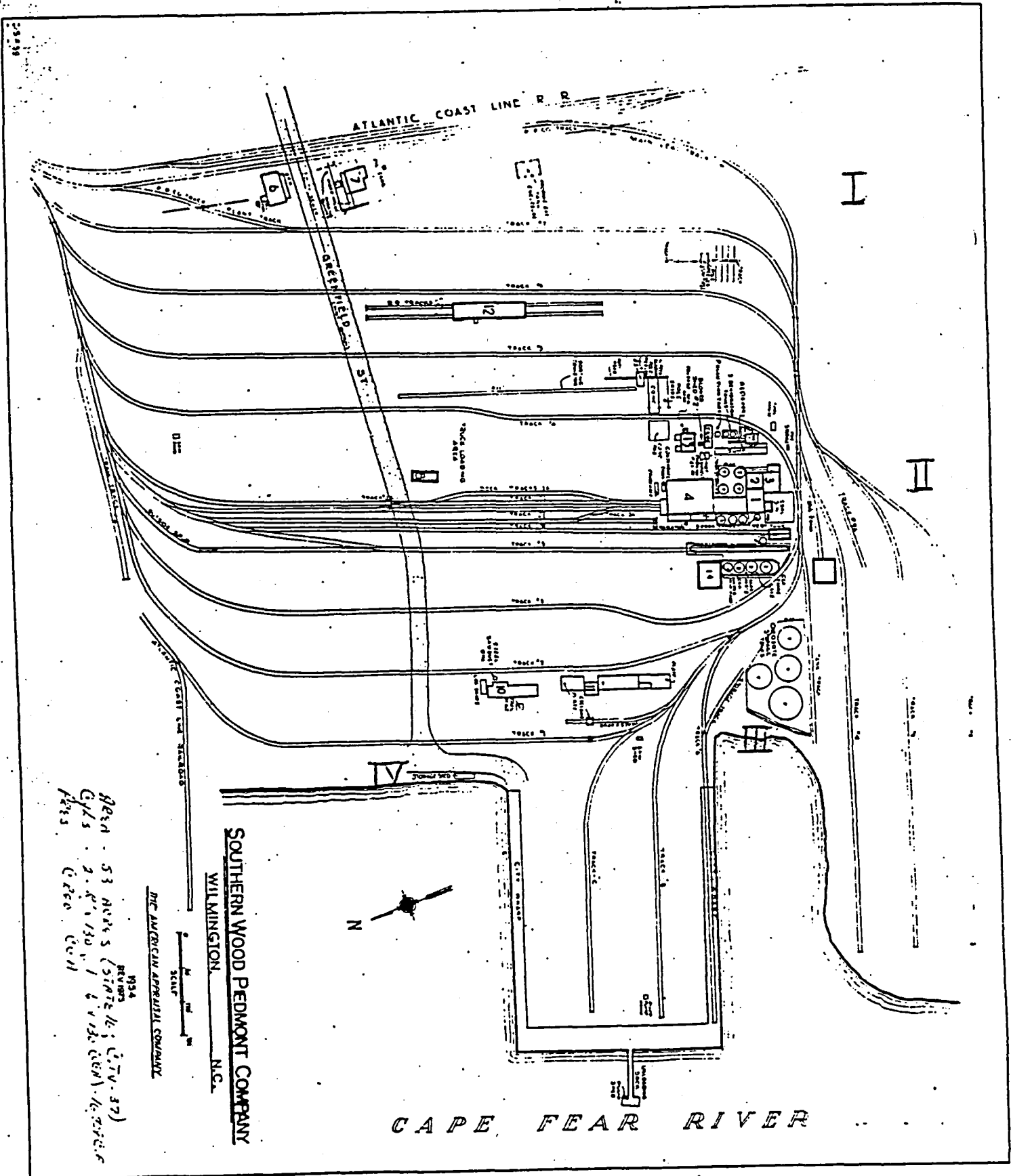
## VI. Proposed Landfarming Procedure

The contaminated soils and sludges from the areas beforementioned will be spread on treated pole storage areas (already lightly contaminated) to about three to four inches in depth and disked or tilled in. Commercial fertilizer will be added to stimulate fungal and bacterial growth to breakdown the organics. Aeration by frequent cultivation will supply oxygen. Sunlight will aid photochemical breakdown of the residuals on the surface and cultivation will keep organics on the surface.

1. Only those soils and sludges exceeding a level of 15 ppm phenols and 0.475 ppm penta will be landfarmed.
2. The treated pole storage area or areas to be used for landfarming will be bermed to prevent rain runoff.
3. Weather permitting, all areas will be tilled weekly to promote biological and photochemical breakdown of residuals. Nutrients will be added initially at about 400 pounds per acre of a commercial fertilizer (10-10-10) or (10-5-5).
4. Composite samples from representative areas will be collected and analyzed for total phenols, and penta. Frequency of sampling will be monthly until a level for 15 ppm of phenol and 0.475 ppm penta is reached.
5. If a second application of contaminated soil is to be treated after the first application has approached the accepted level, it will be handled as in steps 1 to 4.
6. The monitoring wells will be sampled for phenol and penta at the start and completion of the landfarming program and analyzed.

## List of Attachments

1. Plant site map.
2. Groundwater monitoring summary.
3. Law Engineering findings on groundwater flow direction.
4. Summary of Cape Fear River analyses for treating chemicals.
5. Summary of NPDES discharge tests.
6. University of Florida study on acceptable level of PCP in soil.
7. Mississippi State University information on breakdown of PCP.



**SOUTHERN WOOD PIEDMONT COMPANY**  
**WILMINGTON, N.C.**

DIC AMERICAN APPRAISAL COMPANY

1934  
 REVISION  
 OPEN - 53 ACRES (STATE LK; CIV. ST)  
 C/Ls - 2, 8, 130, 1 & 113 (CIV.) 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100  
 Plans C-250 C-211

CAPE FEAR RIVER

SUMMARY GROUND WATER ANALYSIS - WILMINGTON PLANTDecember, 1981

WELL NO.		COPPER	CHROMIUM TOTAL	ARSENIC	PHENOLS	PENTA	LOCATION*	
		EPA 220.1	EPA 218.1	EPA 206.2	SM 510-B	GC	SURFACE	WELL
1	HT	.020	.050	.080	.020	.0013	DS	US
	LT	.025	.025	.005	.050	.005		
2	HT	.030	.060	.005	.040	.016	DS	DS
	LT	.010	.040	.008	.060	.016		
3	HT	.030	.070	.011	.005	.038	DS	DS
	LT	.080	.050	.005	.045	.001		
4	HT	.020	.080	.036	.016	.001	US	DS
	LT	.020	.060	.038	.048	.001		
5	HT	.050	.040	.008	.020	.001	US	US
	LT	.010	.040	.005	.011	.001		

\*Location - DS = Downstream US = Upstream

Surface - Flow of Cape Fear River Well - Expected Hydrological Flow

EPA + No. = Analytical Procedure SM = Standard Method

GC = Gas Chromatograph HT = High Tide LT = Low Tide

November, 1982

WELL NO.	COPPER	CHROMIUM	ARSENIC	PHENOLS	PENTA
1	0.02	<0.01	0.08	0.06	<0.0001
2	0.04	0.02	<0.05	<0.01	0.70
3	0.08	<0.01	0.07	<0.01	0.03
4	0.07	0.01	0.11	0.04	0.004
5	0.03	<0.01	<0.05	0.02	0.07

June, 1983

See attached map and data (attachment 2A).

February 27, 1984

Southern Wood Piedmont  
P.O. Box 5447  
Spartanburg, S.C. 92301

Attn: Mr. Edward L. Gibbs  
Environmental Manager

RE: Ground Water Flow Direction  
Wilmington Plant  
Law Engineering Project No. MH2345

Dear Mr. Gibbs:

As requested, the following summarizes directions of ground water flow directions of the Wilmington Plant. Three sets of ground water elevation data (November (?) 1981, December 1981 and September, 1983) are available.

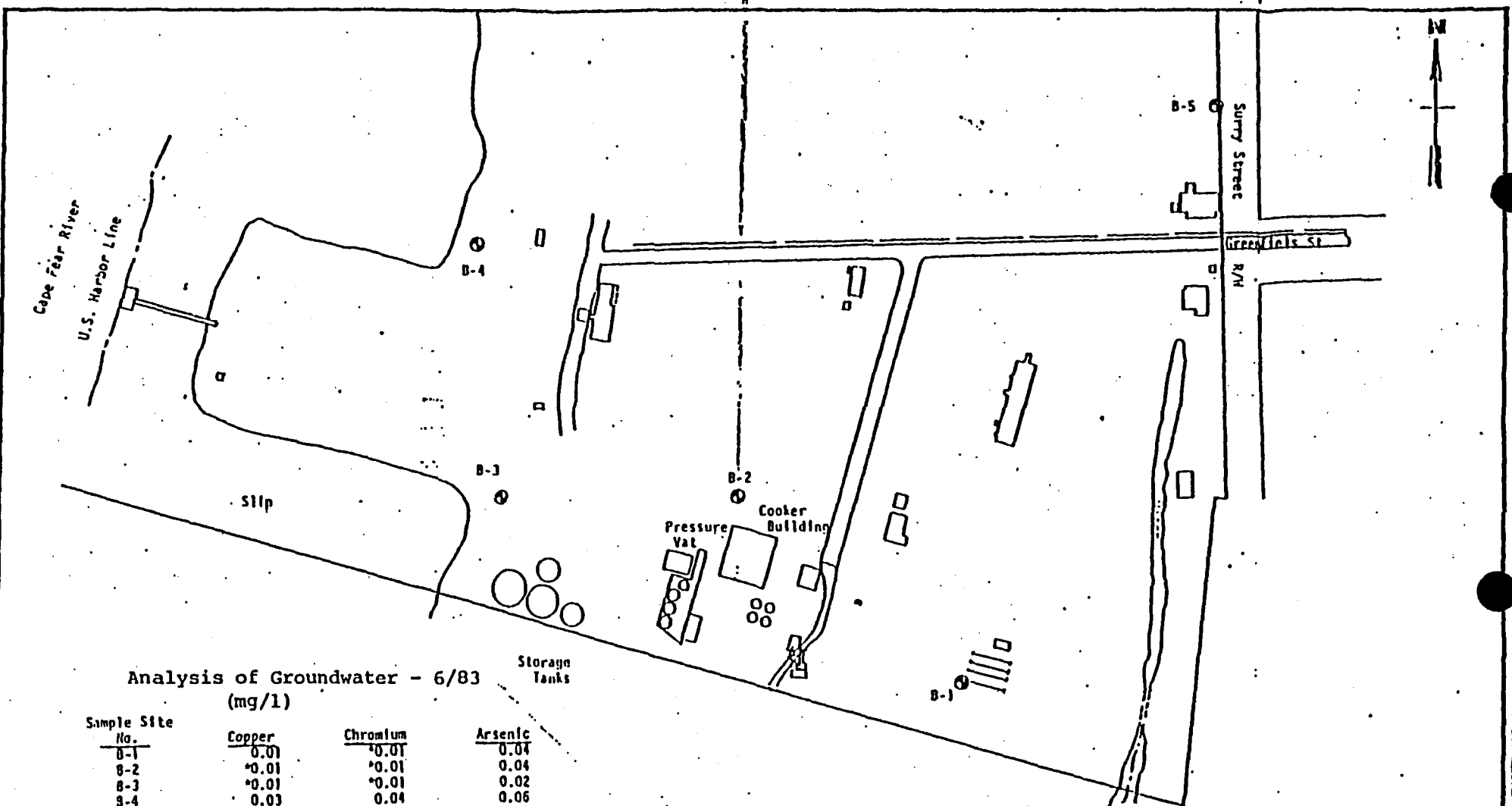
The 1981 data are very consistent and show ground water flow to the south-southwest.

The corresponding ground water elevations range from about +3 feet (msl) to the north of Greenfield St. to less than +1.5 feet (msl) along the southern boundary of the plant. Therefore, the hydraulic gradient is on the order of .001.

Of the 1983 data, ground water elevations in wells B-5, B-1 and B-2 are generally consistent with the 1981 data. However, well B-3 was caved with no groundwater to an elevation of about +2 feet msl and well B-4 had an apparent ground water elevation of +3.3 feet msl. Both the B-3 and B-4 data for September 1983 are anomalous but still generally indicate ground water flow toward the south. It is noted that the September 1983 data were taken at high tide which may explain the higher elevation in B-4 which is closest to the Lope Fear River.

Thus the available data indicate ground water flow in the shallow ground water system to generally be to the south. Accordingly,

GROUNDWATER MONITORING WELL LOCATIONS



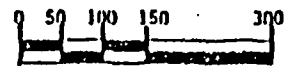
Analysis of Groundwater - 6/83  
(mg/l)

Sample Site No.	Copper	Chromium	Arsenic
B-1	0.01	*0.01	0.04
B-2	*0.01	*0.01	0.04
B-3	*0.01	*0.01	0.02
B-4	0.03	0.04	0.06
B-5	*0.01	*0.01	0.01

Sample Site No.	TCP	PCP	Naphthalene	Phenanthrene
B-1	*.001	.001	*.001	*.001
B-2	.010	.180	*.001	.000
B-3	*.001	.003	*.001	*.001
B-4	*.001	.007	*.001	*.001
B-5	.005	.005	*.001	*.001

\*Indicates less than

Results in P.P.O.



<b>SOIL &amp; MATERIAL ENGINEERS, INC.</b> RALEIGH, NORTH CAROLINA			
Boring Location Plan Southern Hood Piedmonts City of Wilmington Property Wilmington, N. C.		DRWN. BY: RII	CHKD. BY: PJB
		JOB NO.: RS-1759	DATE: 12-4-81
SCALE: Graphic		SHEET 1 OF 2	

ATTACHMENT 2A



Mr. Edward L. Gibbs  
Page 2  
February 27, 1984

discharge of the shallow ground water system appears to be to the creek immediately to the south of Wilmington plant.

Sincerely,

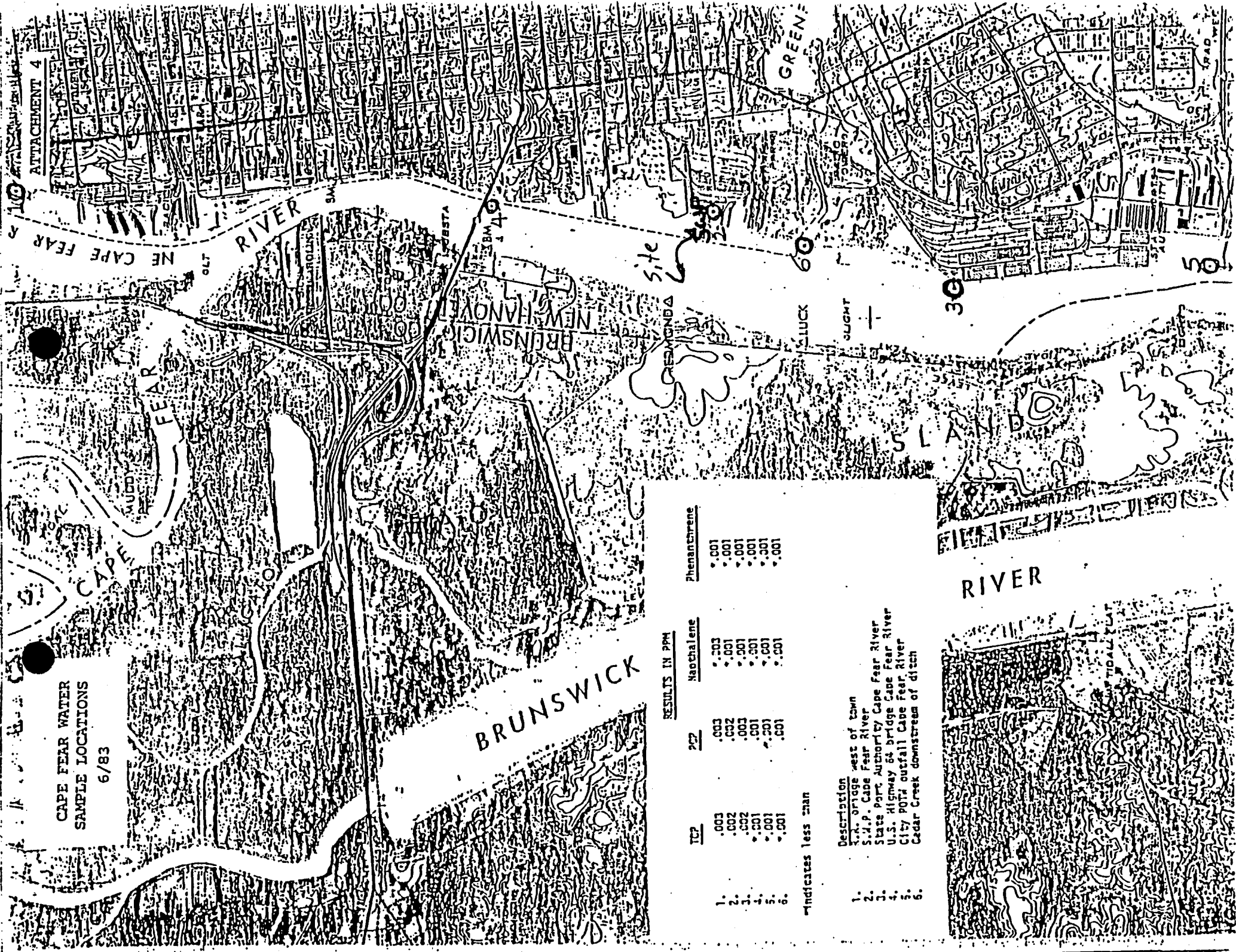
LAW ENGINEERING TESTING COMPANY

Donald G. Miller, Jr., P.E.  
Corporate Consultant

dlh

CAPE FEAR WATER  
SAMPLE LOCATIONS

6/83



## RESULTS IN PPM

TC7	TC7	Naphthalene	Phenanthrene
1. .003	.003	.003	.001
2. .002	.002	.001	.001
3. .001	.001	.001	.001
4. .001	.001	.001	.001
5. .001	.001	.001	.001
6. .001	.001	.001	.001

Indicates less than

1. Description west of town
2. S.A. bridge west of town
3. S.J.P. Cape Fear River
4. State port Authority Cape Fear River
5. U.S. Highway 64 bridge Cape Fear River
6. City POTW outfall Cape Fear River

Cedar Creek downstream of ditch

RIVER



*Southern Wood  
Piedmont Company  
P. O. Box 5447  
Spartanburg, S. C. 29304*

To: E. L. Gibbs

From: M. A. Roldan

Date: October 25, 1983

Subject: NPDES SYNOPSIS - PERMIT NO. NC 0000761

This permit authorizes SWP to discharge non-contact cooling water to the Cape Fear River and to discharge storm water runoff to the Greenfield Creek which in turn discharges into the Cape Fear River.

SWP is required to monitor and maintain certain effluent limitations on these discharges. Across the board PH and temperature and specifically for the storm water runoff phenols and Oil and Grease, because this includes runoff from treated wood areas. SWP also monitors upstream and downstream from the plant site to monitor any possible effect the plant effluent might have on the Cape Fear River.

These effluent limitations are:

PH 6-9

Temperature 32°C (In Cape Fear River due to local discharge)

Phenols - 1 mg/l - Daily Maximum

Oil & Grease - 15 mg/l - Daily Maximum

As a footnote the permit adds that there shall be no CCA or zinc added to the cooling water discharge.

For the Period of 1980-1983

Actual Ranges for all three sources are:

PH	6.7 to 7.0
TEMP	Seasonal variation but never over limitations
OIL & GREASE	1.6 minimum to 11.8 maximum
PHENOLS	0.011 minimum to 0.35 maximum

SWP has maintained an excellent record in complying with the NPDES statutes in the State of North Carolina.

Reports are on file with: Division of Environmental Management; North Carolina Department of Natural Resources and Community Development, P. O. Box 27687, Raleigh, North Carolina, 27611.

/bsb



## Southern Wood Piedmont Company

11-M-1.10.7  
April 7, 1982



Mr. William L. Meyer  
Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section  
Division of Health Services  
P. O. Box 2091  
Raleigh, North Carolina 27602-2091

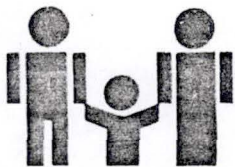
Dear Mr. Meyer:

This is in response to your letter of March 9 which asserts jurisdiction over track area in front of the treating cylinder at our Wilmington plant on the basis of North Carolina's Solid Waste Disposal Regulations.

While we are willing to perform the joint monitoring your letter refers to and to continue our discussions on all aspects of this matter, we are not able to agree that creosote reaching the ground in front of the cylinder is a solid waste, that we need a permit issued under North Carolina's Solid Waste Disposal Regulations to continue this practice, or that we are required under these regulations to remove the soil from in front of the cylinders and to provide some form of drip pad protection.

Allow me to start our explanation of this position by noting that you have not asserted that creosote released from charges withdrawn from the treating cylinders is a solid waste as that term is defined under Section 130-166.16 (16) Article 13B, Chapter 130 General Statutes of North Carolina. Rather you assert that the creosote and woodsugar mixture thus released is a solid waste under federal law. We are unable to find any section in North Carolina law which authorizes you to use the federal definition of solid waste and disregard the North Carolina definition which is part of the Act which you are exerting jurisdiction under. Upon comparison of the two definitions, however, we can readily see why you would wish to take this position. North Carolina classifies garbage refuse as sludge from a waste treatment plant and other discarded material as solid waste, whereas EPA includes materials leaked or spilled on to the land so that such materials may enter the environment. We do not believe that the release of creosote and woodsugars which occurs when a charge is removed from the treating cylinder may be regarded as material which is discarded.

To discard something one must have the intent to cast it off; to be rid of it. Refuse and garbage are items which people rid themselves of. Indeed, it is the very act of discarding some substance which makes that substance, theretofore under the discarding person's control, subject to the jurisdiction of the North Carolina Solid and Hazardous Waste Management Act.



DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

*Frank Moore*  
Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

December 29, 1983



M E M O R A N D U M

TO: Solid and Hazardous Waste Branch Staff  
FROM: June Swallow, Engineer *June Swallow*  
SUBJECT: ERRIS List Site Information

The abandoned sites group is about to begin work on the following list of sites. Please read through the list, check any sites that you have information on, and then return the list. Even if you have no information on any of the sites, tell us and return the list as this is valuable information too. We ask this so that we can do a thorough job, and to avoid duplication of effort. One of us will get back to you to read the file or discuss the site(s) when we get to it.

Thank you for your cooperation.

JS:jj  
Attachment

cc: Frank Moore, Geologist  
Lee Crosby, Chemist

Castle Hayne Quarry	Country Rd. 002, Castle Hayne
Diamond Shamrock/Castle Hayne Plant	Off St. Rd. 002, Castle Hayne
Hercofina/Hanover Plant	Hwy 421 N., Wilmington
✓ R. J. Reynolds Tobacco Co.	Brooke Cove St., St. Rd. 1941, Winston-Salem
Koppers Co., Inc.	Hwy 54 West, Morrisville
Cone Mills Corp./Granite Finishing Plant	Old Hwy 70, Haw River
Weyerhaeuser Company/Lewiston	Hwy 308, Lewiston
Dupont, E.I./Cape Fear Plant	St. Rd. 1426, Phoenix
Kerr-McGee Chemical Corp.	Navassa Rd., Navassa
Style Upholstering, Inc.	33 23rd Ave. NE, Hickory
Weyerhaeuser Co.	St. Rd. 1916, Moncure
Allied Corp./Moncure Plant	Pea Ridge Rd., Moncure
Kaiser Acme Farmarket	St. Rd. 1870, Riegelwood
USS Agri-Chemicals Farm Service Center	Hwy 701, Whiteville
LCP Chemicals (Acme Plant)	Industrial Dr., Riegelwood
LCP Chemicals	B St. and Dixie Hay, Riegelwood
Monsanto Company	Cedar Crk Rd., Fayetteville
✓ Burlington Furniture (Lumber Plnt 191)	US 64 East, Lexington
✓ Southern Résins	1510 Denton Rd., Thomasville
Monsanto, Triangle Park Development Ctr.	3025 Cornwallis Rd., RTP
Mitchell Engineering Co.	Hwy 301 Bypass, Rocky Mount
✓ Johnson Controls/Globe-Union	Old Greensboro Rd., Winston-Salem
✓ Douglas Battery Manufacturing Co.	500 Battery Dr., Winston-Salem
✓ Beaunit Corp./Dyeing and Finishing Plant	3801 Kimwell, Winston-Salem
Burlington Furniture/Robbinsville Plant	116 Atohah St., Robbinsville
Cone Mills Corp./Print Works Plant	1800 Fairview St., Greensboro
American Petrofina MKTG/Greensboro Term.	7115 W. Market St., Greensboro
Unitex Chemical	520 Broome Rd., Greensboro
✓ Private Farm - <i>Smith Farm</i>	Rte. 1, Stokesdale
Helena Chemical Company	Dennis St. Ext., Enfield



*Steve Phipps*

Fishburne Landfill (closed)

Grove Stone Landfill (closed)

Fairview Landfill (closed)

Pond Road Landfill (closed)

Hominy Creek Landfill (closed)

Swannanoa Landfill (closed)

Elk Mountain Landfill (closed)

Buncombe County Landfill (11-02)

Caldwell County Landfill (14-01)

Lenoir City Solid Waste Burial

→ ✓ Lexington Municipal Landfill

Graham County Landfill (38-01)

Henderson County Landfill (45-01)

Lee County Landfill (53-01)

City of Charlotte Landfill

UNC Old Solid Waste Burial Site

Greenville City Landfill (closed)

City of Greenville Utility Dept.  
Burial Site

Asheboro Municipal Landfill

Swain County Landfill (87-01)

DuPont/Brevard Plant

NCSU Lot 86, Farm Unit #1

Wilkes County Landfill (97-02)

Unican Security Systems

Amcel Propulsion, Inc.

Southern Wood Piedmont

✓ Monarch Furniture/Thaden Molding

Carolina Aluminum

SCM Corp./Glidden Coatings Resins Div.

Airport Rd., Fletcher

Grove Stone Rd., Black Mtn.

Fairview Rd., Fairview

Pond Rd., Asheville

Rhododendron Park, Asheville

Hwy 70 East, Swannanoa

Elk Mtn Rd., Asheville

Hwy 191 North, Asheville

N. C. Hwy 90, Lenoir

904 Virginia St., Lenoir

US 64 East, Lexington

Atohah Rd., Robbinsville

St. Rd. 1758, Hendersonville

St. Rd. 1177 on Rd. 1238, Sanford

York Rd., Charlotte

Airport Rd., Chapel Hill

Fifth Street, Greenville

Port Terminal Rd., Greenville

Old US 64, Asheboro

Buckner's Branch, Bryson City

Brevard

Carter-Finley Stadium, Raleigh

Greenhorne Rd., Ronda

400 Fawn Drive, Rocky Mount

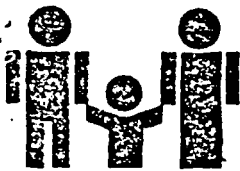
Off Beetree Rd., Swannanoa Township, Swannanoa

St. Rd. 2139 Gulf

300 Scientific St., Jamestown

Metcalf St., Winton

3926 Glenwood Dr., Charlotte



Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

November 15, 1983

Mr. Charles A. Burdell  
Southern Wood Piedmont Company  
P.O. Box 5447  
Spartanburg, SC 29304

RE: Wilmington Site

Dear Mr. Burdell:

Our October 27, 1983 meeting in Wilmington was both informative and indicated a positive step by Southern Wood Piedmont to perform some type of remedial action. Our Branch will assist you in evaluating remedial proposals that offer maximum public health and environmental protection with respect to economics. Of course any proposal should minimize future liability.

Based upon your tentative proposal with land treatment as the focal point for the management of organic waste, the following concentrations are suggested as desirable residual levels.

<u>Constituent</u>	<u>Concentration</u>	<u>Medium</u>
Naphthalene	100 ppb	water
	20 ppm	soil
PCP	680 ppb	water
	6.2 ppb	marine life
TCP	440 ppb	water-saltwater aquatic
Phenol	3.4 ppm	water
	1.0 ppb	water, if Cl present
	0.1 ppm	has been used for some EPA clean-ups

This is by no means a complete listing of those parameters which may require consideration. Attention must be given to the specific creosote and pentachlorophenol mixtures which were in use at the plant. Indicator parameters should be selected for use in monitoring the rate of biodegradation. Once the indicators suggest that the desired level is achieved, a more detailed analysis should be performed to insure that total biodegradation has occurred.



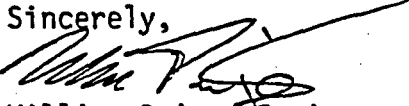
Mr. Charles A. Burdell  
Page 2  
November 15, 1983

The acceptable concentration levels for the inorganics will be based upon results obtained by the EP toxicity test and/or the multiple extraction test. The specific test(s) required is a function of the intended usage of the chemfixed material, provided chemfixing is desirable. The established soil residual levels will probably be 10 x drinking water standards. These are the levels our Branch currently uses in establishing inorganic soil residuals. To obtain these levels, the removal of heavily contaminated soil followed by liming the areas may be necessary.

The final remedial package will be reviewed by the Branch along with input from an Agency's toxicologist to insure that the residual levels proposed are acceptable. Again let me emphasize that the Branches goal is to afford maximum public health and environmental protection with respect to economics.

Your contact at the Raleigh office should be me. In the event that I can not be reached, please ask for Jerry Rhodes, Environmental Chemist. Attached is a listing of references which may prove useful.

Sincerely,



William Paige, Environmental Chemist  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

WP:lc

cc: Mr. Ray Church  
Mr. Jerry Rhodes

## References

1. Decomposition of Toxic and Non-Toxic Organic Compounds in Soil, Michael R. Overcash, Ann Arbor Science.
2. Design of Land Treatment Systems for Industrial Wastes - Theory and Practice, Michael R. Overcash and Dhiraj Pal, Ann Arbor Science.
3. Hazardous Waste Land Treatment, United States Environmental Protection Agency, SW - 874.
4. Appendix A - Health and Environmental Effects Profiles - United States Environmental Protection Agency.
5. Part V Water Quality Criteria Documents, Federal Register/Volume 45, No. 231/ Friday, November 28, 1980/Notices.
6. Multimedia Environmental Goals for Environmental Assessment: Volume IV. Research Triangle Institute, Research Triangle Park, North Carolina.



*Southern Wood  
Piedmont Company  
P. O. Box 5447  
Spartanburg, S. C. 29304*

**To:** C. A. Burdell  
**From:** E. L. Gibbs *ELL* **Date:** October 25, 1983  
**Subject:** WILMINGTON: SOIL ANALYSIS - WATER ANALYSIS

Following are two maps and analytical data for both soil and water at Wilmington.

A plant site map has been segregated into seven (7) major areas with accompanying analytical data relating to these areas.

An area map is included for reference of the Cape Fear River sampling points. The analysis of this water has been superimposed.

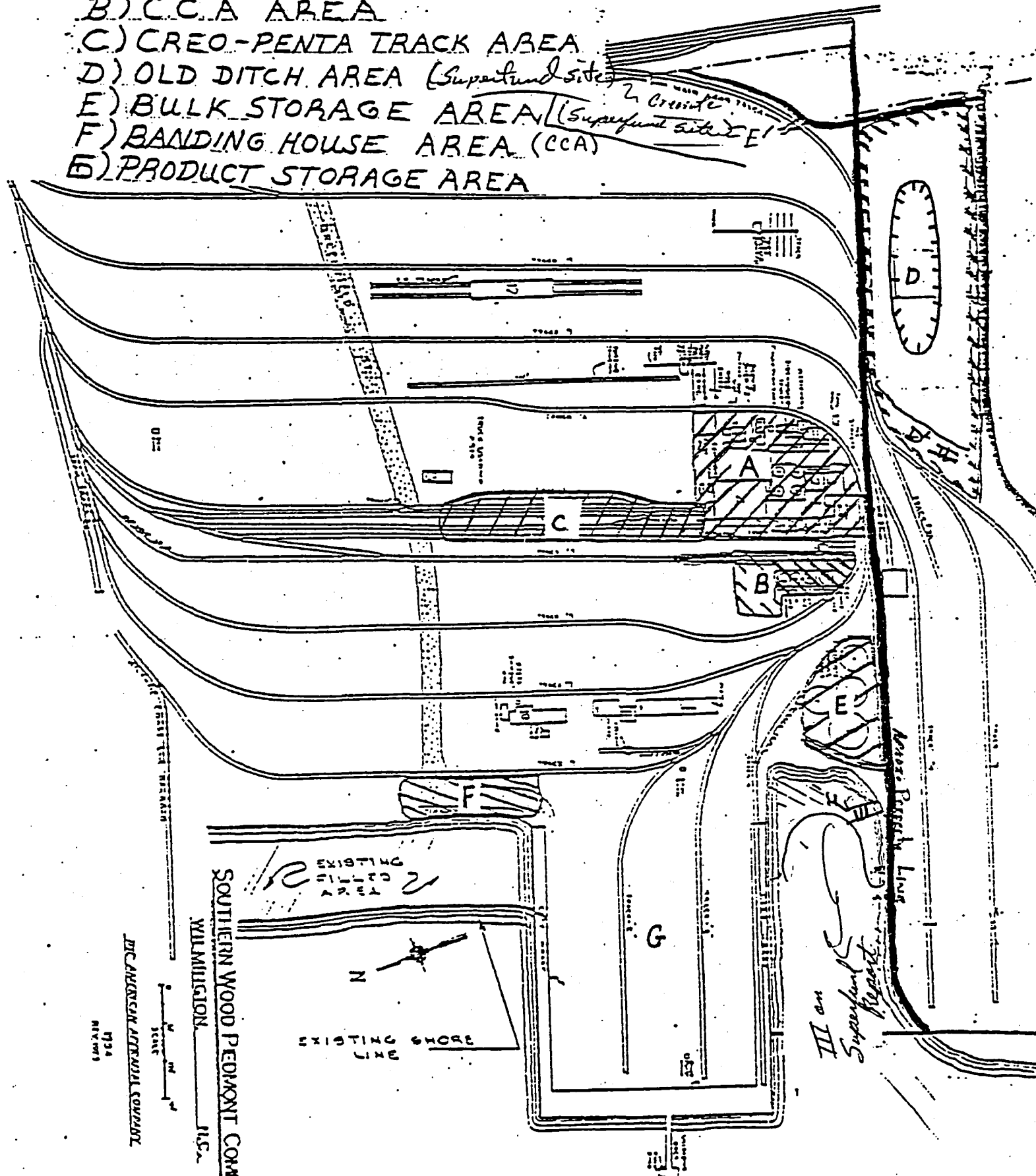
Also following is data on the monitoring wells and NPDES monitoring for the facility.

/bsb

attachments

ZONES OF INFLUENCE:

- A) TREATING AREA
- B) C.C.A AREA
- C) CREO-PENTA TRACK AREA
- D) OLD DITCH AREA (Superfund site)
- E) BULK STORAGE AREA (Superfund site)
- F) BANDING HOUSE AREA (CCA)
- G) PRODUCT STORAGE AREA



SOUTHERN WOOD PIEDMONT COMPANY  
WILMINGTON, N.C.

CAPE FEAR RIVER

WILMINGTON SOIL ANALYSIS - ORGANICS (6/83-9/83)  
 (Caustic Extraction - GC Procedure)  
 (Mg/Kg Dry Soil)

*3-4% of total PCP*  
 ↑

<u>Area A</u>	<u>TCP</u>	<u>PCP</u>	<u>Napthalene</u>	<u>Phenanthrene</u>
	3.5	13.0	1.8	26.0
<u>Area B</u>				
Surface	2.5	4.9	0.1	35.0
0-6"	5.2	83.0	1.2	9.2
	0.008	0.2	*0.1	*0.1
	0.16	4.5	0.9	1.6
	0.01	0.66	*0.1	*0.1
	0.18	0.98	*0.1	3.7
	0.14	0.48	2.6	29.0
Sub-Surface	0.05	0.91	0.1	4.8
<u>Area C</u>				
	0.12	3.0	*0.1	0.7
	2.9	104.0	3.6	16.0
<u>Area D</u>				
	7.9	13.0	81.0	3000.0
	1.2	3.4	420.0	10000.0
	0.022	0.17	0.2	4.6
<u>Area E</u>				
	(Creosote Storage Area Only)			
	No data for PCP, TCP.			
<u>Area F</u>				
<u>Area G</u>				
	1.9	50.0	*0.1	1.1
	0.012	0.24	*0.1	0.4
	0.068	0.32	*0.1	2.1

Note: \* indicates "less than"

ZONES OF INFLUENCE

- A) TREATING AREA
- B) CCA AREA
- C) CREO-PENTA TRACK AREA
- D) OLD DITCH AREA
- E) BULK STORAGE AREA
- F) BANDING HOUSE AREA
- G) PRODUCT STORAGE AREA

WILMINGTON SOIL ANALYSIS - METALS (6/83-9/83)  
 (EPA Toxic Extraction Atomic Absorption Method)  
 (Mg/Kg Soil)

Area B

<u>COPPER</u> ppm In Soil	<u>CHROMIUM</u> ppm In Soil	<u>ARSENIC</u> ppm In Soil
19	22	30
123	13	421
251	53	576
77	238	299
216	1306	496
211	123	552
293	181	150
82	3	40
59	48	266

EPA Toxic Extraction Procedures - Wet Chemistry Method

Area B

Surface

More than 6" depth

56.1	150.0
32.7	130.0
1.76	32.0
00.0	24.0
8.0	2.0
66.9	85.0
00.0	24.0

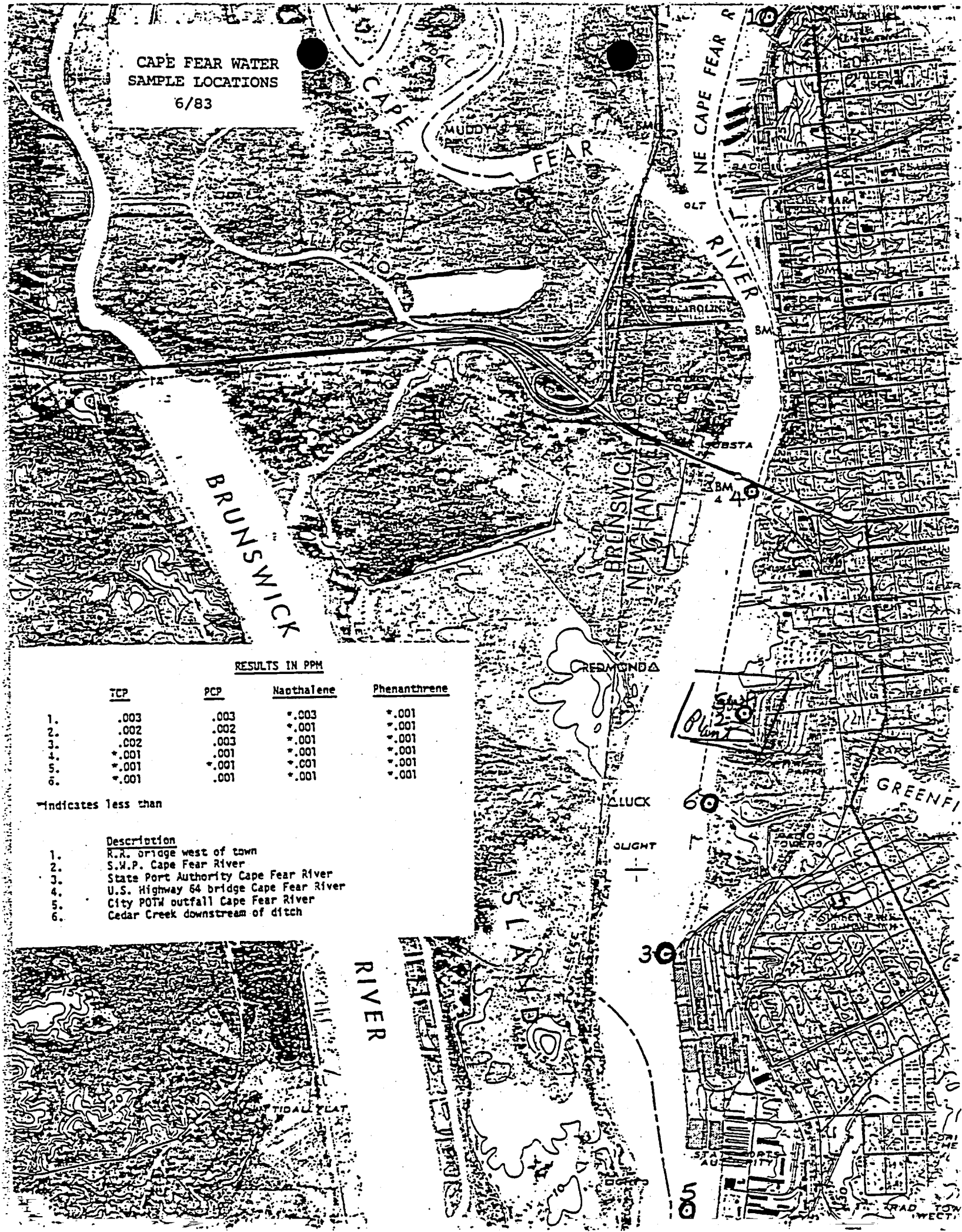
Area F

2.2
4.5
0.1
0.018
0.20
0.8
0.75

ZONES OF INFLUENCE

- A) TREATING AREA
- B) CCA AREA
- C) CREO-PENTA TRACK AREA
- D) OLD DITCH AREA
- E) BULK STORAGE AREA
- F) BANDING HOUSE AREA
- G) PRODUCT STORAGE AREA

CAPE FEAR WATER  
SAMPLE LOCATIONS  
6/83



RESULTS IN PPM

	<u>TCP</u>	<u>PCP</u>	<u>Napthalene</u>	<u>Phenanthrene</u>
1.	.003	.002	*.003	*.001
2.	.002	.002	*.001	*.001
3.	.002	.003	*.001	*.001
4.	*.001	.001	*.001	*.001
5.	*.001	*.001	*.001	*.001
6.	*.001	.001	*.001	*.001

\*Indicates less than

- Description
1. R.R. bridge west of town
  2. S.W.P. Cape Fear River
  3. State Port Authority Cape Fear River
  4. U.S. Highway 64 bridge Cape Fear River
  5. City POTW outfall Cape Fear River
  6. Cedar Creek downstream of ditch

12-15-81 9:15 AM

FOLLOWING RESULTS FROM WELL SAMPLES - 5 LOW TIDE & 5 HIGH TIDE FROM LAW & CO.

151 SOUTHERN WOOD PIEDMONT

LAB ID / INVOICE # SW8756

P.O. BOX 450 WILMINGTON N.C.

DATE & TIME COLLECTED 12-3-81  
DATE & TIME REC IN LAB 12-3-81  
COLLECTED BY CUSTOMER

ATTN: H O PHILLIPS

SAMPLE DESCRIPTION: WASTE WATER

TESTS / SAMPLES	(UNITS)	2-L	5-L	4-H	3-H	2-H	4-L
COPPER EPA 220.1	PPM	.01	.01	.02	.03	.03	.02
CHROMIUM TOTAL EPA 218.1	PPM	.04	.04	.08	.07	.06	.06
ARSENIC EPA 206.2	PPM	.008	.005	.036	.011	.005	.038
PHENOLS SM 510B	PPM	.06	.011	.016	.016	.04	.48?
PENTACHLOROPHENOL G.C.	PPM	.016	.001	.001	.001	.016	.0

TESTS / SAMPLES	(UNITS)	1-L	5-H	3-L	1-H
COPPER EPA 220.1	PPM	.02	.05	.08	.025
CHROMIUM TOTAL EPA 218.1	PPM	.04	.05	.08	.025
ARSENIC EPA 206.2	PPM	.005	.008	.005	.005
PHENOLS SM 510B	PPM	.02	.02	.45	.05
PENTACHLOROPHENOL G.C.	PPM	.0013	.001	.001	.005

TOTAL CHARGES \$960

ROGER OXFORD

LABORATORY SUPERVISOR

THANKS  
H O P  
SOU WD SPA  
SOU WOOD WIN

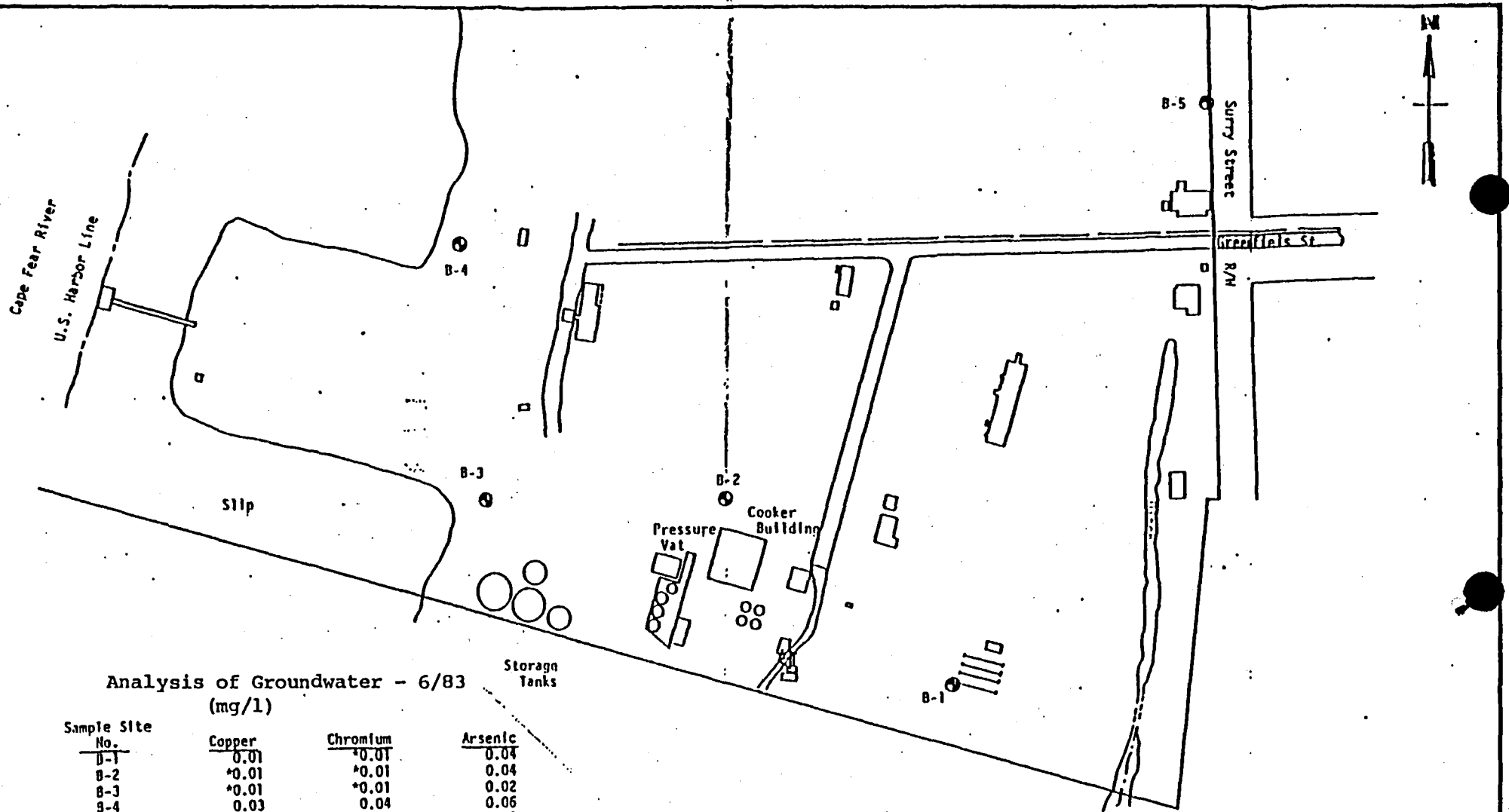
#1 down stream = surface river  
#2 down stream  
#3 " "  
#4 up stream  
#5 up stream

1+5 up hydrographed

11M147



GROUNDWATER MONITORING WELL LOCATIONS



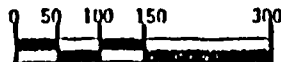
Analysis of Groundwater - 6/83  
(mg/l)


Sample Site No.	Copper	Chromium	Arsenic
B-1	0.01	*0.01	0.04
B-2	*0.01	*0.01	0.04
B-3	*0.01	*0.01	0.02
B-4	0.03	0.04	0.06
B-5	*0.01	*0.01	0.01

Sample Site No.	TCP	PCP	Naphthalene	Phenanthrene
B-1	*.001	.001	*.001	*.001
B-2	.010	.180	*.001	.008
B-3	*.001	.003	*.001	*.001
B-4	*.001	.007	*.001	*.001
B-5	.005	.005	*.001	*.001

\*Indicates less than

Results in P.P.M.



 <b>SOIL &amp; MATERIAL ENGINEERS, INC.</b> RALEIGH, NORTH CAROLINA		
Boring Location Plan Southern Hood Piedmonts City of Wilmington Property Wilmington, N. C.	DRAWN BY: RD JOB NO.: RS-1759	CHKD. BY: PLB DATE: 12-4-81
	SCALE: Graphic	SHEET 1 OF 2



*Southern Wood  
Piedmont Company  
P. O. Box 5447  
Spartanburg, S. C. 29304*

To: E. L. Gibbs

From: M. A. Roldan

Date: October 25, 1983

Subject: NPDES SYNOPSIS - PERMIT NO. NC 0000 761

This permit authorizes SWP to discharge non-contact cooling water to the Cape Fear River and to discharge storm water runoff to the Greenfield Creek which in turn discharges into the Cape Fear River.

SWP is required to monitor and maintain certain efficient limitations on these discharges. Across the board PH and temperature and specifically for the storm water runoff phenols and Oil and Grease, because this includes runoff from treated wood areas. SWP also monitors upstream and downstream from the plant site to monitor any possible effect the plant effluent might have on the Cape Fear River.

These effluent limitations are:

PH 6-9  
Temperature 32°C (In Cape Fear River due to local discharge)  
Phenols - 1 mg/l - Daily Maximum  
Oil & Grease - 15 mg/l - Daily Maximum

As a footnote the permit adds that there shall be no CCA or zinc added to the cooling water discharge.

For the Period of 1980-1983

Actual Ranges for all three sources are:

PH	6.7 to 7.0
TEMP	Seasonal variation but never over limitations
OIL & GREASE	1.6 minimum to 11.8 maximum
PHENOLS	0.011 minimum to 0.35 maximum

SWP has maintained an excellent record in complying with the NPDES statutes in the State of North Carolina.

Reports are on file with: Division of Environmental Management; North Carolina Department of Natural Resources and Community Development, P. O. Box 27687, Raleigh, North Carolina, 27611.

/bsb



Southern Wood  
Piedmont Company  
P. O. Box 5447  
Spartanburg, S. C. 29304

To: E. L. Gibbs  
From: M. A. Roldan *MAR* Date: October 26, 1983  
Subject: CCA WASTE - CONCRETE (PRELIMINARY EXPERIMENT)

The purpose of this experiment was to assess effects of mixing CCA contaminated soil in concrete and water and analyze this resultant solid mixture for leachates, specifically Arsenics.

With sample obtained from the CCA storage area in Wilmington (#5542) this lab proceeded to mix two parts sample to one part concrete. We allowed this to set and cure for 15 and 30 days.

The next step was to run the sample through the 24 hour EP toxicity test. For this we divided the sample into two parts. One was left as it came out of the mold, the other grounded to about one-quarter inch pieces to allow more surface contact.

Test method used was the Silver Diethyldithiocarbamate method for Arsenic, (Page 283, Standard Methods).

\*\*\*\*\*

Original 180 ppm as in sample = 0.18 mg/g As  
Dilution rate of 2 parts sample to 1 part concrete = 0.12 mg/g As  
15 day - Tox. Ext.

	<u>Orig. Conc.</u> ppm	<u>Concrete</u> mg/g	<u>Analysis of</u> <u>Sample mg/g</u>	<u>Recovery</u> %	<u>Reduction</u> %
Whole Sample	120.0	0.12	0.00084 <i>.84</i>	0.7	99.3
Grounded Sample	120.0	0.12	0.0085	7.08	92.9
30 day - Tox. Ext.					
Whole Sample	120.0	0.12	0.00015	1.25	98.75
Grounded	120.0	0.12	0.000098	0.816	99.18

/bsb

cc: C. A. Burdell

Urgent - Please Deliver ASAP!!



*Southern Wood  
Piedmont Company  
P. O. Box 5447  
Spartanburg, S. C. 29304*

**To:** C. A. Burdell

**From:** E. L. Gibbs *ELG*

**Date:** October 24, 1983

**Subject:** WILMINGTON - LANDFARMING EXPERIMENT

Two areas approximately 10' x 10' formerly used for creosote treated pole storage were cleaned of solid debris. One area was inoculated with soil from the cylinder track and the other from soil taken approximately 18" below the surface of the old ditch which was visually confirmed to contain old creosote deposits.

The inoculent was raked homogeneously into the surface of each plot.

These plots were aerated and mixed by disk harrowing to a depth of approximately 18" once every two weeks for a period of four months.

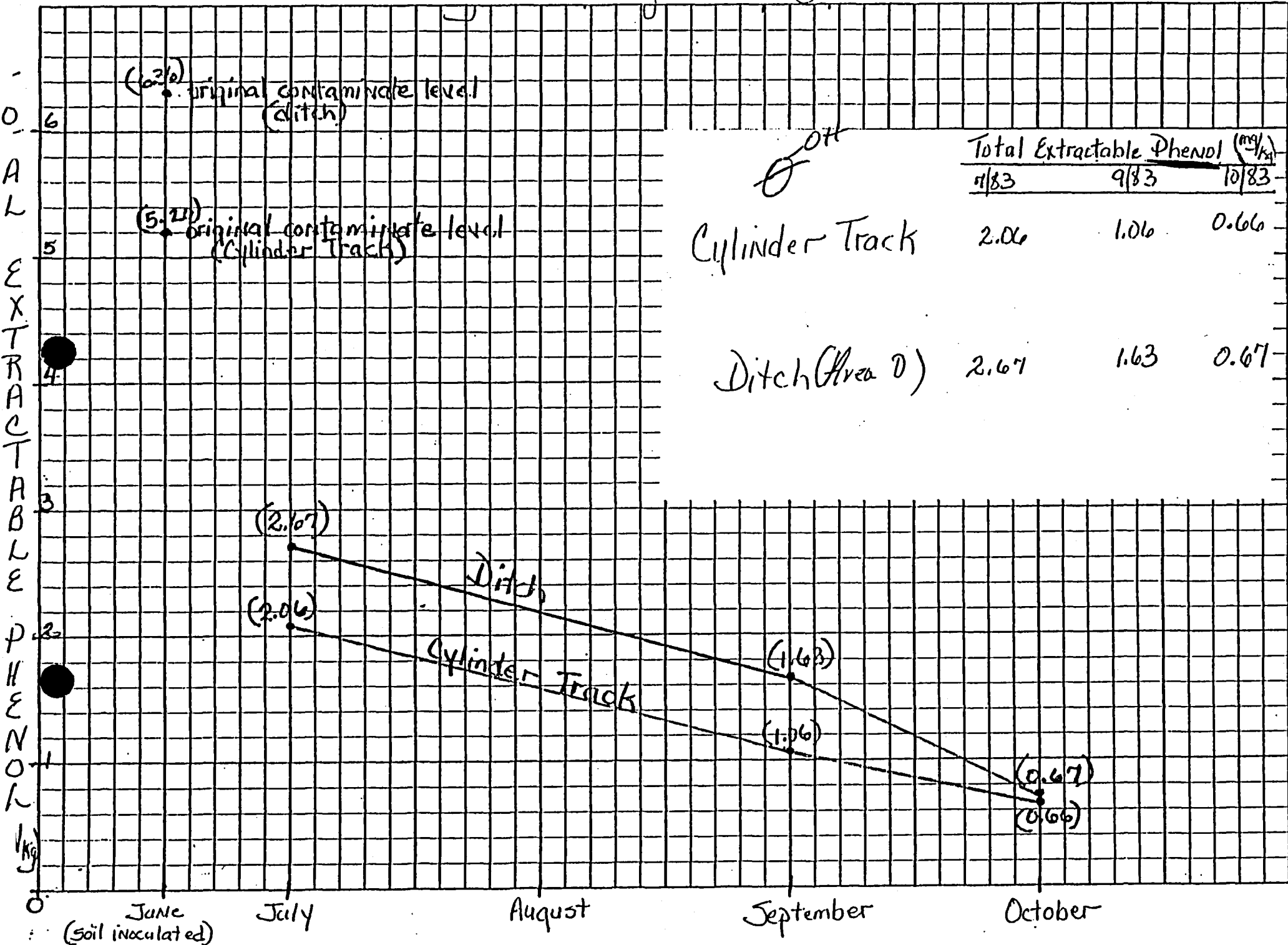
Samples were obtained from each plot by compositing individual samples comprised of surface and several inches deep aliquots. These composites were then analyzed for TOTAL EXTRACTABLE PHENOLS.

Enclosed is a graph depicting results of this experiment.

**Note:** Total Extractable Phenol - Approximately 10 grams of sample was combined with 500 ml. of distilled water. Mixture was then distilled as per standard methods for TOTAL PHENOLS.

/bsb

enclosure



	Total Extractable Phenol (mg/kg)		
	7/83	9/83	10/83

Cylinder Track

Ditch (Area D)

Cylinder Track	2.06	1.06	0.66
Ditch (Area D)	2.67	1.63	0.67

5 DIVISIONS PER INCH

JBW



Southern Wood  
Piedmont Company  
P. O. Box 5447  
Spartanburg, S. C. 29304

To: E. L. Gibbs  
From: M. A. Roldan *MAR* Date: October 26, 1983  
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With sample obtained from the CCA storage area in Wilmington (#5542) this lab proceeded to mix two parts sample to one part concrete. We allowed this to set and cure for 15 and 30 days.

The next step was to run the sample through the 24 hour EP toxicity test. For this we divided the sample into two parts. One was left as it came out of the mold, the other grounded to about one-quarter inch pieces to allow more surface contact.

Test method used was the Silver Diethyldithiocarbamate method for Arsenic, (Page 283, Standard Methods).

\*\*\*\*\*

Original 180 ppm as in sample = 0.18 mg/g As  
Dilution rate of 2 parts sample to 1 part concrete = 0.12 mg/g As  
15 day - Tox. Ext.

	<u>Orig. Conc.</u> ppm	<u>Concrete</u> mg/g	<u>Analysis of</u> <u>Sample mg/g</u>	<u>Recovery</u> %	<u>Reduction</u> %
Whole Sample	120.0	0.12	0.00084	0.7	99.3
Grounded Sample	120.0	0.12	0.0085	7.08	92.9
30 day - Tox. Ext.					
Whole Sample	120.0	0.12	0.00015	1.25	98.75
Grounded	120.0	0.12	0.000098	0.816	99.18

/bsb

cc: C. A. Burdell

*Urgent - Please Deliver ASAP !!*



Southern Wood  
Piedmont Company  
P.O. Box 5447  
Spartanburg, S.C. 29304

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Grounded	120.0	0.12	0.000098	0.816	99.18

/bsb

cc: C. A. Burdell

Urgent - Please Deliver ASAP !!

S.W. Piedmont

M. Hanover

P. O. Box 5447  
Spartanburg, S. C. 29304

Phone 803/576-7660



## Southern Wood Piedmont Company



August 9, 1983  
11-M-10.7

R. L. Church, Jr.  
Division of Health Services  
Eastern Regional Office  
404 St. Andrews Street  
Greenville, N.C. 27834

Dear Ray:

This is to respond to your letter of July 8, in which you state that your office must assume that our Wilmington plant treats, stores, or disposes of hazardous waste because Part A of the permit application covering this facility has not been amended to show otherwise.

Please be informed that the plant did not and does not treat, store, or dispose of K001 sludge because waste water from the plant is sent to the municipal treatment works. I am enclosing an amended Part A which reflects the fact that the plant periodically generates hazardous wastes but does not treat, store or dispose of K001 waste.

I hasten to add that we recognize that we need to furnish your office as soon as possible with a plan concerning the final disposition of previously reported Superfund deposits and also the cleanup of certain plant areas identified in your letter of July 8. It has taken us longer than anticipated to formulate this plan because of slow turnaround on laboratory results. Please be assured that we will be back to you on this as soon as we can.

Sincerely,

SOUTHERN WOOD PIEDMONT COMPANY

E. L. Gibbs  
Environmental Manager

ELG/cac

cc: C. A. Burdell  
E. F. Button  
H. O. Phillips





# Southern Wood Piedmont Company

August 12, 1983

Mr. Ray Church  
Division of Health Services  
Eastern Regional Office  
404 St. Andrews Street  
Greenville, N.C. 27834

Dear Ray:

Please find enclosed the attachments inadvertently omitted from my letter of August 10, 1983.

Thanks.

Sincerely,

SOUTHERN WOOD PIEDMONT COMPANY

E. L. Gibbs  
Environmental Manager

ELG/cac

Attachments

*Note: IF P 2 of Gibbs letter is true  
A PART A (POTSDF's) WAS NEVER NEEDED  
SWPC STATES THAT THEY ARE GENERATORS  
ONLY THEY NEED TO FILE ONLY NOTIFICATION  
AS A generator - IS THERE ANY WASTE  
WATER TET ON SITE, IF SO THE SLUDGES  
MAY BE KOOL, EVEN IF THE WASTE WATER  
eventually is discharged to the Wilmington  
Plant, I CANNOT IMAGINE NO TREATMENT  
(Direct discharge) to the sewer without  
settling/solids removal or skimming  
oils/grease - this is treatment of IFA  
sludge is simulated IS IT KOOL/CHEM  
IS SPECIFIC TO CROSOTE & PCP - OR IF IT  
IS CCA IS IT EPTACEN*

<b>FORM 1</b> <b>GENERAL</b>		<b>EPA</b> <b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> <b>GENERAL INFORMATION</b> <i>Consolidated Permits Program</i> <i>Read the "General Instructions" before starting.</i>		<b>I. EPA I.D. NUMBER</b> <b>F N C D 0 5 8 5 1 7 4 6 7</b>	
<b>II. LABELS</b> <b>EPA I.D. NUMBER</b> <b>III. FACILITY NAME</b> <b>FACILITY MAILING ADDRESS</b> <b>FACILITY LOCATION</b>		<b>PLEASE PLACE LABEL IN THIS SPACE</b>		<b>GENERAL INSTRUCTIONS:</b> If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.	

**II. POLLUTANT CHARACTERISTICS**

**INSTRUCTIONS:** Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any question, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" FORM ATTACHED			SPECIFIC QUESTIONS	MARK "X" FORM ATTACHED		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)			X	B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)			X
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)			X
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X			F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)			X
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)			X	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)			X
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)			X	J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)			X

**III. NAME OF FACILITY**

1 SKIP S O U T H E R N W O O D P I E D M O N T - W I L M I N G T O N

**IV. FACILITY CONTACT**

A. NAME & TITLE (last, first, & title)      B. PHONE (area code & no.)

2 E D W A R D L. G I B B S , E N V I R . M G R .      8 0 3 5 7 6 7 6 6 0

**V. FACILITY MAILING ADDRESS**

A. STREET OR P.O. BOX

3 P . O . B O X 5 4 4 7

B. CITY OR TOWN      C. STATE      D. ZIP CODE

4 S P A R T A N B U R G      S C      2 9 3 0 4

**VI. FACILITY LOCATION**

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 P . O . B O X 4 5 0 G R E E N F I E L D S T .

B. COUNTY NAME

6 W I L M I N G T O N

C. CITY OR TOWN      D. STATE      E. ZIP CODE      F. COUNTY CODE (if known)

6 W I L M I N G T O N      N C      2 8 4 0 1

VII. SIC CODES (4-digit, in order of priority)

A. FIRST		B. SECOND	
2	491 (specify) Wood Preserving	7	(specify)
C. THIRD		D. FOURTH	
7	(specify)	7	(specify)

VIII. OPERATOR INFORMATION

A. NAME: SOUTHERN WOOD PIEDMONT COMPANY

B. STATUS OF OPERATOR: (Enter the appropriate letter into the answer box; if "Other" specify.)  
 FEDERAL STATE PRIVATE  
 M - PUBLIC (other than federal or state)  
 O - OTHER (specify) P Corporation

C. PHONE (area code & no.)  
 A 803 576 7660

E. STREET OR P.O. BOX: P. O. BOX 5447

F. CITY OR TOWN: SPARTANBURG

G. STATE: SC

H. ZIP CODE: 29304

IX. INDIAN LAND: Is the facility located on Indian lands?  
 YES  NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)		D. PSD (Air Emissions from Proposed Sources)	
9 N	N C 0 0 0 0 7 6 1	9 P	
B. UIC (Underground Injection of Fluids)		E. OTHER (specify)	
9 U		2 6 5 2	(specify) Wastewater Treatment
C. RCRA (Hazardous Wastes)		F. OTHER (specify)	
9 R		2 7 0 4 R	(specify) Boiler Operating Permit

XI. MAP: Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Southern Wood Piedmont is a wood preserving company, supplying pressure-treated crossties, switchties, utility poles, lumber, floorblock, crossarms and specialty items. The preservatives used are coal tar creosote, pentachlorophenol in diesel oil (penta) and chromated copper arsenate (CCA).

Southern Wood Piedmont processes its wooden raw materials into desired products, then the material is dried by natural or artificial means. The artificial means are: steaming for softwoods, and vapor drying for hardwoods. Kiln drying is also used.

After drying, the products are treated, stored until needed, and shipped to customers.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print) C. A. Coumsil Executive V.P./Chief Operating Officer	B. SIGNATURE <i>C.A. Coumsil</i>	C. DATE SIGNED 10/31/80
---	-------------------------------------	----------------------------

COMMENTS FOR OFFICIAL USE ONLY

**FORM 1 EPA** U.S. ENVIRONMENTAL PROTECTION AGENCY  
**HAZARDOUS WASTE PERMIT APPLICATION**  
 Consolidated Permits Program  
 (This information is required under Section 3005 of RCRA.)

**EPA I.D. NUMBER**  
 F N C D O 5 8 5 1 7 4 6 7

**FOR OFFICIAL USE ONLY**

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

**II. FIRST OR REVISED APPLICATION**

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

**A. FIRST APPLICATION** (place an "X" below and provide the appropriate date)

1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

2. NEW FACILITY (Complete item below.)

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left).

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN.

**B. REVISED APPLICATION** (place an "X" below and complete Item I above)

1. FACILITY HAS INTERIM STATUS.

2. FACILITY HAS A RCRA PERMIT.

**III. PROCESSES—CODES AND DESIGN CAPACITIES**

**A. PROCESS CODE**— Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the form (Item III-C).

**B. PROCESS DESIGN CAPACITY**— For each code entered in column A enter the capacity of the process.

1. AMOUNT— Enter the amount.

2. UNIT OF MEASURE— For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
<b>Storage:</b>			<b>Treatment:</b>		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)	T04	GALLONS PER HOUR OR LITERS PER HOUR
<b>Disposal:</b>					
INJECTION WELL	D79	GALLONS OR LITERS			
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D81	ACRES OR HECTARES			
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	G
GALLONS PER DAY	U	LITERS PER HOUR	H		

**EXAMPLE FOR COMPLETING ITEM III (shown in line numbers X-1 and X-2 below):** A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PROCESS CODE (from list above)			B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)			B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY
	1	2	3	1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)				1	2	3	1. AMOUNT	2. UNIT OF MEASURE (enter code)		
X-1	S	0	2	600	G			5							
X-2	T	0	3	20	E			6							
1					G			7							
2					G			8							
3					G			9							
4								10							

**L. PROCESSES (continued)**

SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T00"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

**7. DESCRIPTION OF HAZARDOUS WASTES**

**EPA HAZARDOUS WASTE NUMBER** — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

**ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

**UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the wastes.

**D. PROCESSES**

- 1. PROCESS CODES:**  
 For listed hazardous wastes: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.  
 For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.  
 Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

**2. PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

**NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
- Repeat step-2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

**EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below)** — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

**IV. DESCRIPTION OF HAZARDOUS WASTES (continued)**

**E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.**

Southern Wood Piedmont's Wilmington plant does not produce sludge from wastewater treatment.

The oil recovery-water pollution system (Wemco) extracts some material during the water treatment. This is then incinerated as boiler fuel. This treatment extracts 90 to 95% of the oil present. The water is then discharged to the city sewer.

The Wilmington plant also treats with Chromated Copper Arsenate. Some insoluble sludge is produced from the preservative reaction with wood extractives and the contamination of sand and sawdust with the preservative. Occasionally, sludge is produced on mixing the concentrate from the reaction with the dissolved salts in hard water, or for unknown reasons.

EPA I.D. NO. (enter from page 1)

F	N	C	D	0	5	8	5	1	7	4	6	7	T/A	C
														6

**V. FACILITY DRAWING**

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

**VI. PHOTOGRAPHS**

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

**VII. FACILITY GEOGRAPHIC LOCATION**

LATITUDE (degrees, minutes, & seconds)

LONGITUDE (degrees, minutes, & seconds)

3	4	1	2	4	5
45 - 44	27 - 28	46 - 47			

7	7	5	7	1	5
72 - 74	78 - 78	77 - 79			

**VIII. FACILITY OWNER**

A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER

2. PHONE NO. (area code & no.)

3. STREET OR P.O. BOX

4. CITY OR TOWN

5. ST.

6. ZIP CODE

**IX. OWNER CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)

B. SIGNATURE

C. DATE SIGNED

Not required per 11/10/80 telephone conversation between Mr. Andrew Tyan, EPA Region IV, RCRA Activities, and Mr. Michail T. Breen of ITT Rayonier/SWPC - since City of Wilmington owns & leases on

**X. OPERATOR CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)

B. SIGNATURE

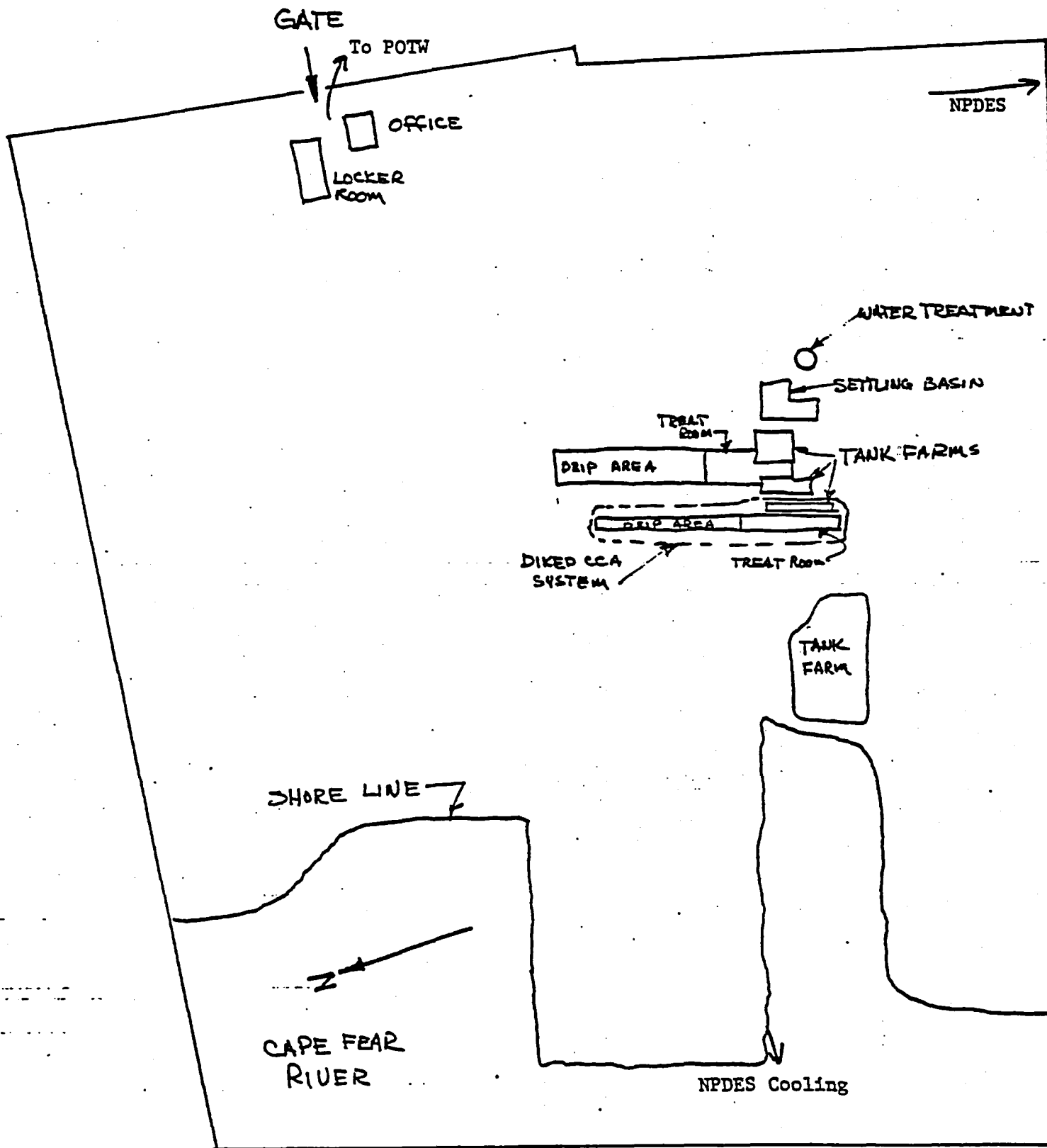
C. DATE SIGNED

C. A. Counsil - Executive V.P.  
Chief Operating Officer

EPA I.D. NUMBER (enter from page 1)													FOR OFFICIAL USE ONLY													
W	N	C	D	0	5	8	5	1	7	4	6	7	W	DUP					T/A	C	2	DUP				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			

**IV. DESCRIPTION OF HAZARDOUS WASTES (continued)**

WASTE NO.	A. EPA HAZARD. WASTE NO. (enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES																
	25	26	27	28			1. PROCESS CODES (enter)				2. PROCESS DESCRIPTION (if a code is not entered in D(1))												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	U	0	5	1	4,000	P		S	0	2													
2	P	0	1	1	1,000	P		S	0	2													
3																							
4																							
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Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
EASTERN REGIONAL OFFICE  
404 St. Andrews Street  
Greenville, N.C. 27834  
(919) 756-1343



July 8, 1983

Mr. Edward L. Gibbs  
Environmental Manager  
Southern Wood Piedmont  
P.O. Box 5447  
Spartansburg, SC 29304

Dear Ed:

This letter is in regards to our meeting of June 28, 1983.

During our meeting we discussed the areas which should be addressed during the closure of the Southern Wood Piedmont, Wilmington, NC facility.

As discussed, Southern Wood Piedmont notified EPA on November 17, 1980, that the Wilmington facility treats, stores, or disposes of a hazardous waste. The wastes listed were; K001, Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or penta-chlorophenol; D004, Arsenic and D007 Chromium.

Since the Part A for this facility has not been amended to reflect any changes at this facility, this office must assume that the facility, treats, stores or disposes of a hazardous waste and therefore request that a closure plan be submitted as required under 40 CFR, Subpart G.

Please be reminded that 40 CFR, Subpart G, Section 265.112(c) requires the owner or operator to submit his closure plan to the Regional Administrator at least 180 days before he expects to begin closure. Since it is apparent that this facility has already begun closure, the closure plan for this facility must be filed immediately.

The areas which we addressed during our recent meeting included the following:

1. Treatment areas including treatment vessels, sumps, floors, track areas and appurtenances.
2. Tank bottoms and decontamination of tanks and separators.
3. Contaminated soils around treatment areas, track areas, and storage yard.
4. Contaminated water which has accumulated in the CCA drip pad treatment area.

Mr. Edward L. Gibbs

Page 2

July 8, 1983

5. Superfund site.

6. Any additional ground water monitoring .

Please keep me informed of your progress and any further developments.  
If I may be of any assistance please do not hesitate to call.

Very truly yours,

Raymond L. Church, Jr., RS  
Solid and Hazardous Waste Management Branch  
Environmental Health Section

sle

cc: O.W. Strickland  
✓ Bill Meyer  
Terry Dover  
Glen Dunn



**Southern Wood Piedmont Company**

*file*

11-M-1.10.7

August 20, 1982

Mr. Ray Church  
805 Spring Branch Road  
Wilmington, North Carolina 28405

Dear Mr. Church:

Enclosed is a copy of the analyses for the four (4) soil samples from the treating tank area of our Wilmington facility. Our analyses closely follow yours.

If you need to discuss this data, please give me a call at 803/576-7660.

Sincerely,

SOUTHERN WOOD PIEDMONT COMPANY

*Edward L. Gibbs*

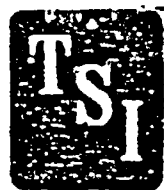
Edward L. Gibbs  
Environmental Manager

ELG:kwm

cc: Mr. C. A. Burdell (w/o Enc.)

Enclosure

*PROCESS WASTE - not regulated  
NOT COMMERCIAL DISCARDED  
MATERIAL  
NOT KOOL - WASTE WITH SLUDGE  
! CAN NOT regulate  
w/ m 9/1/82*



RECEIVED

# TECHNICAL SERVICES, INC.



ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

ENVIRONMENTAL AFFAIRS LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761

Laboratory No. 46479

August 5, 1982

Sample of SOTT

Date Received May 17, 1982

For SOUTHERN WOOD PIEDMONT COMPANY, P.O. Box 5447, Spartanburg, S. C. 29301 ATTN: Charles Burdell

Marks: Sample No. 1, from Wilmington, N. C.

Storet No.	Parameter	Concentration
	1,3-Dichlorobenzene	
	1,4-Dichlorobenzene	
	1,2-Dichlorobenzene	
34396	Hexachloroethane	
34273	bis(2-Chloroethyl) ether	
34283	bis(2-Chloroisopropyl) ether	
34428	N-Nitrosodi-n-propylamine	
34408	Isophorone	
34447	Nitrobenzene	
39702	Hexachlorobutadiene	
	1,2,4-Trichlorobenzene	
34696	Naphthalene	ND
34278	bis(2-Chloroethoxy) methane	
34386	Hexachlorocyclopentadiene	
	2-Chloronaphthalene	
34200	Acenaphthylene	ND
81533	2,6-Dinitrotoluene	
34205	Acenaphthene	490 PPM
34341	Dimethylphthalate	
34381	Fluorene	ND
	4-Chlorophenyl phenyl ether	
81533	2,4-Dinitrotoluene	
	1,2-Diphenylhydrazine	

Storet No.	Parameter	Concentration
34336	Diethylphthalate	
34433	N-Nitrosodiphenylamine	
39700	Hexachlorobenzene	
77794	4-Bromophenyl phenyl ether	
34461	Phenanthrene	2200 PPM
34220	Anthracene	190
39110	Di-n-butylphthalate	
34376	Fluoranthene	1800
34469	Pyrene	1090
39120	Benzidine	
	Butylbenzylphthalate	
39100	bis-(2-Ethylhexyl) phthalate	
34320	Chrysene	240
34526	Benzo(a)anthracene	ND
34230	Benzo(b)fluoranthene	ND
34242	Benzo(k)fluoranthene	ND
	3,3'-Dichlorobenzidine	
34596	Di-n-octylphthalate	
34247	Benzo(a)pyrene	TRACE < 10
	Indeno(1,2,3-cd) pyrene	
34403	pyrene	ND
	Dibenzo(a,h) anthracene	380
34521	Benzo(q,h,i)perylene	ND
	Nitrosodimethylamine	

Pentachlorophenol, mg/kg 1300

ND = NOT DETECTED

TECHNICAL SERVICES, INC.

*Harvey C. Gray, Jr.*

010



# TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761



Laboratory No. 46479

August 5, 1982

Sample of SOIL

Date Received May 17, 1982

For SOUTHERN WOOD PIEDMONT COMPANY, P.O. Box 5447, Spartanburg, S. C. 29301 ATTN: Charles Burdell

Marks: Sample No. 2 from Wilmington, N. C.

### CERTIFICATE OF ANALYSIS OR TESTS

Storet No.	Parameter	Concentration
	1,3-Dichlorobenzene	
	1,4-Dichlorobenzene	
	1,2-Dichlorobenzene	
34396	Hexachloroethane	
34273	bis(2-Chloroethyl) ether	
34283	bis(2-Chloroisopropyl) ether	
34428	N-Nitrosodi-n-propylamine	
34408	Isophorone	
34447	Nitrobenzene	
39702	Hexachlorobutadiene	
	1,2,4-Trichlorobenzene	
34696	Naphthalene	ND
34278	bis(2-Chloroethoxy) methane	
34386	Hexachlorocyclopentadiene	
	2-Chloronaphthalene	
34200	Acenaphthylene	ND
81533	2,6-Dinitrotoluene	
34205	Acenaphthene	71 PPM
34341	Dimethylphthalate	
34381	Fluorene	ND
	4-Chlorophenyl phenyl ether	
81533	2,4-Dinitrotoluene	
	1,2-Diphenylhydrazine	

Storet No.	Parameter	Concentration
34336	Diethylphthalate	
34433	N-Nitrosodiphenylamine	
39700	Hexachlorobenzene	
77794	4-Bromophenyl phenyl ether	
34461	Phenanthrene	ND
34220	Anthracene	190 PPM
39110	Di-n-butylphthalate	
34376	Fluoranthene	130
34469	Pyrene	94
39120	Benzidine	
	Butylbenzylphthalate	
	bis-(2-Ethylhexyl) phthalate	
39100		
34320	Chrysene	< 30
34526	Benzo(a)anthracene	ND
34230	Benzo(b)fluoranthene	ND
34242	Benzo(k)fluoranthene	ND
	3,3'-Dichlorobenzidine	
34596	Di-n-octylphthalate	
34247	Benzo(a)pyrene	ND
	Indeno(1,2,3-cd) pyrene	
34403		ND
	Dibenzo(a,h)anthracene	ND
34521	Benzo(a,h,i)perylene	ND
	Nitrosodimethylamine	

Pentachlorophenol, mg/ kg 250

ND = NOT DETECTED

TECHNICAL SERVICES, INC.

by *Henry C. Gray, Jr.*



# TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761



Laboratory No. 46479

August 5, 1982

Sample of Soil

Date Received May 17, 1982

For Southern Wood Piedmont Company, P.O. Box 5447, Spartanburg, S. C. 29301 ATTN: Charles Burdell

Marks: Sample No. 3 from Wilmington, N. C.

## CERTIFICATE OF ANALYSIS OR TESTS

Storet No.	Parameter	Concentration
	1,3-Dichlorobenzene	
	1,4-Dichlorobenzene	
	1,2-Dichlorobenzene	
34396	Hexachloroethane	
34273	bis(2-Chloroethyl) ether	
34283	bis(2-Chloroisopropyl) ether	
34428	N-Nitrosodi-n-propylamine	
34408	Isophorone	
34447	Nitrobenzene	
39702	Hexachlorobutadiene	
	1,2,4-Trichlorobenzene	
34696	Naphthalene	ND
34278	bis(2-Chloroethoxy) methane	
34386	Hexachlorocyclopentadiene	
	2-Chloronaphthalene	
34200	Acenaphthylene	ND
81533	2,6-Dinitrotoluene	
34205	Acenaphthene	50 PPM
34341	Dimethylphthalate	
34381	Fluorene	ND
	4-Chlorophenyl phenyl ether	
81533	2,4-Dinitrotoluene	
	1,2-Diphenylhydrazine	

Storet No.	Parameter	Concentration
34336	Diethylphthalate	
34433	N-Nitrosodiphenylamine	
39700	Hexachlorobenzene	
77794	4-Bromophenyl phenyl ether	
34461	Phenanthrene	100 PPM
34220	Anthracene	< 20
39110	Di-n-butylphthalate	
34376	Fluoranthene	970
34469	Pyrene	640
39120	Benzidine	
	Butylbenzylphthalate	
	bis-(2-Ethylhexyl) phthalate	
39100		
34320	Chrysene	200
34526	Benzo(a)anthracene	ND
34230	Benzo(b)fluoranthene	ND
34242	Benzo(k)fluoranthene	ND
	3,3'-Dichlorobenzidine	
34596	Di-n-octylphthalate	
34247	Benzo(a)pyrene	ND
	Indeno(1,2,3-cd) pyrene	
34403		ND
	Dibenzo(a,h)anthracene	190
34521	Benzo(g,h,i)perylene	ND
	Nitrosodimethylamine	

Pentachlorophenol, mg/kg 1000

ND = NOT DETECTED

TECHNICAL SERVICES, INC.

*Henry C. Gray, Jr.*



# TECHNICAL SERVICES, INC.

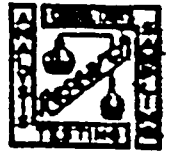
ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761



Laboratory No. 46479

August 5, 19 82

Sample of SOTT

Date Received May 17, 1982

For SOUTHERN WOOD PIEDMONT COMPANY, P.O. Box 5447, Spartanburg, S.C.

Marks: Sample No. 4 from Wilmington, N. C.

### CERTIFICATE OF ANALYSIS OR TESTS

Storet No.	Parameter	Concentration
	1,3-Dichlorobenzene	
	1,4-Dichlorobenzene	
	1,2-Dichlorobenzene	
34396	Hexachloroethane	
34273	bis(2-Chloroethyl) ether	
34283	bis(2-Chloroisopropyl) ether	
34428	N-Nitrosodi-n-propylamine	
34408	Isophorone	
34447	Nitrobenzene	
39702	Hexachlorobutadiene	
	1,2,4-Trichlorobenzene	
34696	Naphthalene	ND
34278	bis(2-Chloroethoxy) methane	
34386	Hexachlorocyclopentadiene	
	2-Chloronaphthalene	
34200	Acenaphthylene	ND
81533	2,6-Dinitrotoluene	
34205	Acenaphthene	<10 PPM
34341	Dimethylphthalate	
34381	Fluorene	ND
	4-Chlorophenyl phenyl ether	
81533	2,4-Dinitrotoluene	
	1,2-Diphenylhydrazine	

Storet No.	Parameter	Concentration
34336	Diethylphthalate	
34433	N-Nitrosodiphenylamine	
39700	Hexachlorobenzene	
77794	4-Bromophenyl phenyl ether	
34461	Phenanthrene	ND
34220	Anthracene	17 PPM
39110	Di-n-butylphthalate	
34376	Fluoranthene	28
34469	Pyrene	21
39120	Benzidine	
	Butylbenzylphthalate	
	bis-(2-Ethylhexyl) phthalate	
39100		
34320	Chrysene	11
34526	Benzo(a)anthracene	ND
34230	Benzo(b)fluoranthene	ND
34242	Benzo(k)fluoranthene	ND
	3,3'-Dichlorobenzidine	
34596	Di-n-octylphthalate	
34247	Benzo(a)pyrene	14
34403	Indeno(1,2,3-cd)pyrene	ND
	Dibenzo(a,h)anthracene	ND
34521	Benzo(g,h,i)perylene	ND
	Nitrosodimethylamine	

Pentachlorophenol, mg/kg: ND

ND = NOT DETECTED

TECHNICAL SERVICES, INC.

*Henry C. Gray, Jr.*



Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES  
EASTERN REGIONAL OFFICE  
404 St. Andrews Street  
Greenville, N.C. 27834  
(919) 756-1343



August 2, 1982

Mr. Ed Gibbs, Environmental Manager  
Southern Wood Piedmont  
P.O. Box 5447  
Spartanburg, SC 29304

*file under Wilmington*

Dear Mr. Gibbs:

As per our conversation of July 30, 1982 I am enclosing a copy of analyses run on soil samples obtained from the treating track area of your Wilmington, North Carolina facility.

It is apparent from these analyses that the major contamination is found in the upper few inches of soil along the treating track drip area and at greater depths nearer the treating vessels.

Please contact me as soon as you have received your analyses on the split samples in order that they may be compared.

If you have any questions regarding this matter please call me at (919) 799-9078 or contact me by mail at 805 Spring Branch Road, Wilmington, NC 28405.

Very truly yours,

Ray Church  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

slc

Enclosure

cc: Terry Dover  
William Paige





DEPARTMENT OF HUMAN RESOURCES - DIVISION OF HEALTH SERVICES  
 LABORATORY SECTION  
 OCCUPATIONAL HEALTH

G C REPORT SHEET

COMPANY: Southern Wood Piedmont

DATE OF ANALYSIS: 5/06/82 - 5/21/82

SAMPLE #	ppm $\pm$ 1									
	Pentachloro-phenol	Napthalene	Acenaphthylene	Anthracene	Pyrene	Chrysene	Benzo(K) Fluoranthene			
1447	3000+	8	300	1000+	1000+	400	500			
1448	ND	100	70	200	81	ND	ND			
1449	2000+	2	16	200	500	120	90			
1450	ND	ND	ND	ND	ND	ND	ND			

Other compounds identified:

1447	Sub. decane, hexadecane, phenanthrene, other hydrocarbons.									
1448	Methyl naphthalene, sub. decane, sub. octane, sub. decane.									
1449	sub. hydrocarbons.									
1450	ND									

<sup>a/</sup> Results based on GC/MS autoquantitation program, using EPA mixed standard with d10 Anthracene as internal standard. 0.5 grams of soil analyzed [Sample bias present.]

STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES  
 N.C. DEPARTMENT OF HUMAN RESOURCE  
 P.O. BOX 28047 - 306 N. WILMINGTON ST., RALEIGH 27611



CHEMICAL ANALYSES - SOLID AND HAZARDOUS WASTE

Source: Southern Wood Piedmont  
 Address: Greenfield St  
Wilmington Zip \_\_\_\_\_  
 County: New Hanover  
 Report To: Wm Paige - Ray Church  
 Address: Solid & Hazardous Waste  
Raleigh Zip \_\_\_\_\_  
 Telephone Number: (919) 732-2178  
 Collected By: Ray Church  
 Date Collected: 4-30-82 Time 12:00 AM  
 Location of Sampling Point: 10'-Track  
# 1 Surface

Remarks: # 1 - Surface  
 10' from treatment vessel

Retain sample  
 for further analysis

Extractable Metals	Results		Results expressed in ppm unless otherwise indicated,		
	Total	Extract:	Total	Extractable	
Arsenic			Zinc		
Barium			Ignitability		
Cadmium			Corrosivity		
Chloride			Reactivity		
Chromium			Spec. Conductivity		
Color			Chlorinated Hydrocarbons		
Copper			Eldrin		
Flammability			Lindane		
Fluoride			Methoxychlor		
Iron			Toxaphene		
Lead			2,4-D		
Manganese			2,4,5-TP		
Mercury			<u>Creosote</u>		
Nitrate			<u>Pentachlorophenol</u>		
pH					
Selenium					
Silver					

Date Received \_\_\_\_\_ Date Reported 5/21/82 Reported By John Neal  
 Laboratory Number 04447

STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES  
 N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 305 N. WILMINGTON ST., RALEIGH 27611

CHEMICAL ANALYSES - SOLID AND HAZARDOUS WASTE

Source: Southern Wood & Piedmont  
 Address: Greenfield St.  
Wilmington Zip  
 County: New Hanover  
 Report To: Wm Payne - Ray Church  
 Address: Solid & Hazardous Waste  
Raleigh Zip  
 Telephone Number: 1919 733 - 2178  
 Collected By: Ray Church  
 Date Collected: 4-30-82 Time 2:00 <sup>AM</sup> <sub>PM</sub>  
 Location of Sampling Point: #2 Subsurface  
14" deep 10' from vessel

Remarks: #2  
 Subsurface 14" deep  
 10' from treatment vessel  
 Retain sample for  
 further analysis

) Extractable Metals	Results		Results expressed in ppm unless otherwise indicated,	Total	Extractable
	Total	Extract:			
) Total Metals			Zinc		
Arsenic			Ignitability		
Barium			Corrosivity		
Cadmium			Reactivity		
Chloride			Spec. Conductivity		
Chromium			Chlorinated Hydrocarbons		
Color			Endrin		
Copper			Lindane		
Flammability			Methoxychlor		
Fluoride			Toxaphene		
Iron			2,4-D		
Lead			2,4,5-TP		
Manganese			✓ Arsenate		
Mercury			✓ Pentachlorophenol		
Nitrate					
pH					
Selenium					
Silver					

Date Received \_\_\_\_\_ Date Reported 5/21/82 Reported By John Neal  
 Laboratory Number 04448

STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES  
 N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON ST., RALEIGH 27611

CHEMICAL ANALYSES - SOLID AND HAZARDOUS WASTE

Source: Southern Wood Piedmont  
 Address: Greenfield St.  
Wilmington Zip \_\_\_\_\_  
 County: New Hanover.  
 Report To: Wm. Paige - Ray Church  
 Address: Solid & Hazardous Waste  
Robert Zip \_\_\_\_\_  
 Telephone Number: 919 733 - 2178  
 Collected By: Ray Church  
 Date Collected: 4-30-82 Time 12:00 <sup>AM</sup>/<sub>PM</sub>  
 Location of Sampling Point: #3 See above

Remarks: #3 Surface  
125' from vessel  
Retain sample for  
further analysis

) Extractable Metals ) Total Metals	Results		Results expressed in ppm unless otherwise indicated.	
	Total	Extract.	Total	Extractable
Arsenic			Zinc	
Barium			Ignitability	
Cadmium			Corrosivity	
Chloride			Reactivity	
Chromium			Spec. Conductivity	
Color			Chlorinated Hydrocarbons	
Copper			Endrin	
Flammability			Lindane	
Fluoride			Methoxychlor	
Iron			Toxaphene	
Lead			2,4-D	
Manganese			2,4,5-TP	
Mercury			✓ <u>Heasote</u>	
Nitrate			✓ <u>Pentachlorophenol</u>	
pH				
Selenium				
Silver				

Received \_\_\_\_\_ Date Reported 5/2/82 Reported by John Neal  
 Laboratory Number 01449

STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES  
 N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON ST., RALEIGH 27611

CHEMICAL ANALYSES - SOLID AND HAZARDOUS WASTE

Source: Southern Wood Piedmont  
 Address: Greenfield St  
 \_\_\_\_\_ Zip \_\_\_\_\_  
 County: New Hanover  
 Report To: Wm Paige - Ray Church  
 Address: Solid & Hazardous Waste  
Railroad Zip \_\_\_\_\_  
 Telephone Number: 919 733 - 2178  
 Collected By: Ray Church  
 Date Collected: 4-30-82 Time 12:05 <sup>AM</sup> ~~PM~~  
 Location of Sampling Point: Truck  
see remarks

Remarks: # 4 Subsurface  
 14" depth 125' from vessel

Retain sample for  
 further analysis

) Extractable Metals ) Total Metals	Results		Results expressed in ppm unless otherwise indicated,		
	Total	Extract:	Total	Extractable	
Arsenic			Zinc		
Barium			Ignitability		
Cadmium			Corrosivity		
Chloride			Reactivity		
Chromium			Spec. Conductivity		
Color			Chlorinated Hydrocarbons		
Copper			Endrin		
Flammability			Lindane		
Fluoride			Methoxychlor		
Iron			Toxaphene		
Lead			2,4-D		
Manganese			2,4,5-TP		
Mercury			<u>Creosote</u>		
Nitrate			<u>Pentachlorophenol</u>		
pH					
Selenium					
Silver					

ate Received \_\_\_\_\_ Date Reported 5/21/82 Reported By John Neal  
 Laboratory Number 01450

Mr. William L. Meyer  
April 7, 1982  
PAGE TWO.....

This Act is rendered unworkable if the element of intent is read out of it. Most of the Act is directed at the development of a permit system and rules and regulations for the control of solid waste management facilities. But under the Act, solid waste management means the "purposeful systematic control of the generation, storage, collection, transport, separation, treatment, processing, recycling, recovery and disposal of solid waste." How can one exercise purposeful and systematic control over the listed activities if one is not intentionally discarding the material to be controlled? Clearly the Act is predicated upon the intentional act of discarding so that "solid waste management" control may be exerted.

The release of creosote and woodsugars is often caused by lower pressure in the atmosphere than is present in the wood cells of the treated charge. In all events this material is simply responding to the force of gravity when it falls to the ground. There is no intent on the part of SWP to discard this material. Indeed, if the company had its way the material would stay in the charge.

We respectfully submit that the Agency cannot use the federal definition of "solid waste" to assert jurisdiction in this matter, and that the definition of solid waste which is found in your organic Act will serve this purpose no better.

The relationship between North Carolina's Solid and Hazardous waste Management Act and federal law does serve a useful purpose in one respect. Section 130-166.21D of this North Carolina statute clearly states that:

"The solid waste management program . . . maintained by the state under this article shall be no more comprehensive than the hazardous waste program prescribed under the Federal Act (i.e. RCRA)."

The second paragraph of your letter of March 9 apparently concurs with us that the material concerned is not a hazardous waste under RCRA and hence would not be controlled under federal regulations. By what authority then is the Agency attempting to construe its Solid and Hazardous Waste Management Act, in violation of Section 130-166.21D of that Act, so as to extend its "solid waste management" jurisdiction beyond the ambit of federal hazardous waste jurisdiction?

I think you will see from this discussion that SWP has serious questions about the jurisdictional basis by which you seek to force us to remove the soil from in front of our treating cylinder and prevent any further deposition of creosote in this area. We are willing to continue discussion on this matter in order to see if a mutually agreeable solution can be found, but we come to these discussions voluntarily and not with the understanding that we require a solid waste permit from your agency.

Mr. William L. Meyer  
April 7, 1982  
PAGE THREE.....

If you have any questions or comments with respect to the Company's position on this matter, please let me know. I plan to meet with Mr. Church in the near future to continue our discussion regarding the area in front of the treating cylinder.

Very truly yours,

SOUTHERN WOOD PIEDMONT COMPANY



C. A. Burdell  
Director  
Technical Services

CAB:kwm

cc: Mr. Raymond Church

Michael T. Breen  
Legal Counsel



ITT Rayonier Inc.  
P.O. Box 45165  
Atlanta, Georgia 30320  
(404) 996-1460

February 4, 1982

Certified Mail/Return Receipt Requested

EPA Region IV  
RCRA Activities  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Re: EPA Identification Number  
FNC058517467 (Wilmington,  
North Carolina)

Gentlemen:

On November 17, 1980, Southern Wood Piedmont Company (a subsidiary corporation of ITT Rayonier Inc.) mailed to your office a Hazardous Waste Permit Application for our wood treating facility in Wilmington, North Carolina.

Recently Mr. Raymond L. Church, Jr., of the North Carolina Department of Human Resources (Solid & Hazardous Waste Management Branch, Division of Health Services) called our attention to an error in the said Application. Let me explain as follows:

In the Process Code(s) columns of Line Number 1 on both page 3 and page 5, the code S04 is inserted. However, no surface impoundment is involved. The correct code is S02, the designation for a tank medium, which is what we have in Wilmington. Unfortunately, we did not apply the proper definition to the steel, above-ground oil/water separator in the plant where the K001 sludge is generated and stored.

Please file this letter with our Application and consider the Application to be amended hereby. Should you require more information or another form, please advise me accordingly.

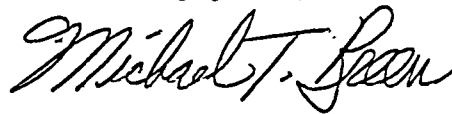
So that both cognizant regulatory agencies will be notified of the foregoing modification, I have sent a copy of this letter to the appropriate North Carolina state office.



EPA Region IV  
February 4, 1982  
Page 2

Your assistance is appreciated.

Sincerely yours,



MTB/cw

- cc: (1.) Solid & Hazardous Waste Management Branch - CM/RRR  
Environmental Health Section  
Department of Human Resources  
Division of Health Services  
Post Office Box 2091  
Raleigh, North Carolina 27602
- (2.) Mr. Charles A. Burdell, Technical/Environmental Director  
Southern Wood Piedmont Company  
Post Office Box 5447  
Spartanburg, South Carolina 29304



## Southern Wood Piedmont Company

11-M-1.10  
January 29, 1982



Mr. Tom Karnoski  
NORTH CAROLINA DIVISION OF HEALTH SERVICES  
P. O. Box 2091  
Raleigh, North Carolina 27602

Dear Mr. Karnoski:

### GULF, NORTH CAROLINA

The Gulf, North Carolina, wood preserving plant of Southern Wood Piedmont Company (SWP) was closed for economic reasons in mid-1980. The state was notified before the start and at the completion of the dismantling of the plant. As far as we know, all work done to close the plant was done in compliance with the law. Information required by EPA for notification under the Comprehensive Environmental Response Compensation and Liability Act, was filed with EPA at the time of closure.

SWP believes the site was closed in full compliance of the law, and stands ready to cooperate with the state and the EPA for further discussion concerning the site.

### WILMINGTON, NORTH CAROLINA

The Wilmington, North Carolina, wood preserving plant of Southern Wood Piedmont (SWP) is in full operation. Notification was duly filed for the Comprehensive Environmental Response, Compensation and Liability Act. The plant has filed for interim status under RCRA, and is now operating under these requirements.

We believe the plant is in full compliance of the requirements of these two laws, and we stand ready to work with the appropriate agency on any future requirements.

Very truly yours,

SOUTHERN WOOD PIEDMONT COMPANY

C. A. Burdell  
Director  
Technical Services

CAB:kwm

Date: January 26, 1982

County: New Hanover

Notifier's name and address: C. A. Council

P.O. Box 5447, Spartanburg, S.C. 29304

Contact's name: Mr. Charles Burdell (803) 576-7660

Site name and address: Southern Wood Piedmont Company

Greenfield Street, Wilmington, N.C. 28401

Site location: \_\_\_\_\_

Type of waste: Possible creosote, pentachlorophenol, and copper

chromic arsenic sludges

What process generated the waste? Wood preservation operation

Volume of waste: \_\_\_\_\_

Method of storage or disposal: on-site burial

Dates of waste activity: 1933 - 1981

Site history: Mr. C. A. Council notified that Southern Wood Piedmont Company buried creosote, pentachlorophenol, and copper chromic arsenic sludges on their property between 1933 and 1981. The site is located in Wilmington, N.C. and is currently monitored for impact on the groundwater.

NCD 053488 557

GEN, T&N, TSD

\*The preceding information is based on preliminary data supplied by the Environmental Protection Agency, and not on detailed site investigations.

1. Facility Information

Southern Wood Piedmont  
P.O. Box 450 Greenfield Street  
Wilmington, NC 28401  
New Hanover County  
EPA ID# NCD058517467

2. Facility Contact

Henry O. Phillips, Jr., Plant Manager

3. Survey Participants

Henry O. Phillips, Jr., Plant Manager  
Raymond L. Church, Jr., District Sanitarian

4. Dates of Inspection

November 19, 1981  
November 25, 1981

5. Applicable Regulations

40 CFR Parts 262 and 265, FR May 19, 1980 and Amendments

6. Purpose of Survey

RCRA Interim Status Inspection including review of records and site survey. Regulatory requirements covered included those contained in 40 CFR Part 262 Generator Standards and 40 CFR Part 265 under General Facility Standards, tanks, containers and storage facilities.

7. Facility Description

The Southern Wood Piedmont - Wilmington Plant is located at the foot of Greenfield Street on the bank of the Cape Fear River. The facility is located on a fifty two (52) acre tract of land. Seventeen (17) of those acres being leased from the State of North Carolina Ports Authority and the remaining thirty-five (35) acres is leased from the City of Wilmington.

The Southern Wood Piedmont Company is a wood preserving company, supplying pressure-treated crossties, switch ties, utility poles, lumber, floorblock, cross arms and specialty items. The preservatives used are coal tar creosote (U051), pentachlorophenol (P090) in diesel oil (penta) and chromated copper arsenate (D007 and D004) (CCA). The facility notified as having a listed process waste (K001), bottom sediment sludges from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.

The facility operates separate processing production lines, one being the CCA and the other creosote/penta treatment.

The CCA line consists of treatment vessel, diked tank farm with appurtanances and a diked drip area outside and including the treatment vessel. Almost all drippings and spillages within this area are collected by sump and pumped back into the tank farm. Partially filled drums of sorbent contaminated with

CCA are located in this processing area but no shipments of this waste material have been made to date. There was evidence of CCA spillage outside the containment area contaminating the soil.

The creosote-penta line consist of treatment vessel without drip pad, diked tank farm and appartanances, a 54,000 gallon tank with baffels for oil-water separation and a Wemco oil-water separator. The sludge from the 54,000 gallon tank bottom is pumped approximately every five years and is approximately 45,000 pounds. The waste water from this process is batch dumped at a rate of 4,000 - 5,000 gallon/day to the City of Wilmington Waste Water Treatment Plant under waste water treatment permit number 2652. Samples are obtained and analyzed by the POTW prior to the batch dumpings.

The Part A listed a 40,000 gallon surface impoundment. Upon questioning Mr. Phillips it was learned that 40,000 gallons is the approximate volume maintained in the 54,000 gallon tank. He was informed that his Part A should be amended to reflect a 54,000 gallon tank in lieu of a 40,000 gallon surface impoundment. Mr. Phillips was also informed that he should delist as a Transporter since he does not transport waste.

#### 8. Documentation of Site Deficiencies

The Sounthern Wood Piedmont Company was deficient in the areas sited below:

1. Failure to inspect the facility for malfunctions and deterioration, operator errors and discharges to the environment. (265.15)
2. Failure to include the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job. (265.16 (d) (1))
3. Failure to maintain and operate the facility to minimize the possibility of unplanned sudden release of hazardous waste. (Evidence of environmental contamination around processing area.) (265.31)
4. Failure to make arrangements with local authorities to familiarize them with type of waste handled at this facility. (265.37 (a))
5. Failure to include in the contingency plan actions the facility personnel must take to comply with 265.51 and 265.56 in response to fires, explosions, or unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water at the facility. (265.52 (a))
6. Failure to include in the contingency plan a list of all emergency equipment at the facility. (265.52 (e))
7. Failure to submit copies of the contingency plan to the proper local authorities. (265.53)
8. Failure to include Emergency Procedures in the contingency plan. (265.56)
9. A signed copy of the manifest must be returned from the disposal facility to the generator. Such manifest must be retained by the generator. (262.40 (a))
10. Closure time should be included in the closure plan (265.113)
11. The partially filled containers containing contaminated sorbent should be covered except when necessary to add or remove waste. (265.173)
12. Two feet of freeboard or a containment structure, etc. must be maintained as required under section (265.192 (c)) regulating uncovered tanks containing hazardous waste. (265.192 (c))

ENVIRONMENTAL PROTECTION AGENCY  
 NOTIS DATA MANAGEMENT SYSTEM

PAGE: 39  
 REPORT DATE: 10/20/81

NOTIS REPORT #4

LISTING BY FACILITY  
 REGION: 04 STATE: NC

NOTIFICATION ID NO.	SITE NAME SITE STREET SITE CITY SITE COUNTY EPA SITE ID NO.	NOTIFIER NAME NOTIFIER STREET NOTIFIER CITY (CONTACT NAME/TITLE) (CONTACT PHONE)	STATE	ZIP	NOTIFIER STATUS (PRES OWN, PAST OWN PRES OP, PAST OP TRANSPORTER, VOLUNTEER)
---------------------	---	--	-------	-----	--

NCS000001053	SOUTHERN WOOD PIEDMONT CO FOOT OF GREENFIELD ST WILMINGTON 28401 NEW HANOVER NCD058174467	C.A. COUNCIL P.O. BOX 5447 SPARTANBURG (BURDELL, CHARLES, DIR/ENV AFF ) (404-996-1460)	SC	29304	PRES OP
--------------	---	--	----	-------	---------

RELEASES TO THE ENVIRONMENT:  
 -----

DATES OF WASTE HANDLING: 1933 TO 1981  
 -----

WASTE AMOUNT: 22,604 CU FT AREA: 1 ACRES MAP PRESENT: YES FORM TYPE: 8900-1  
 -----

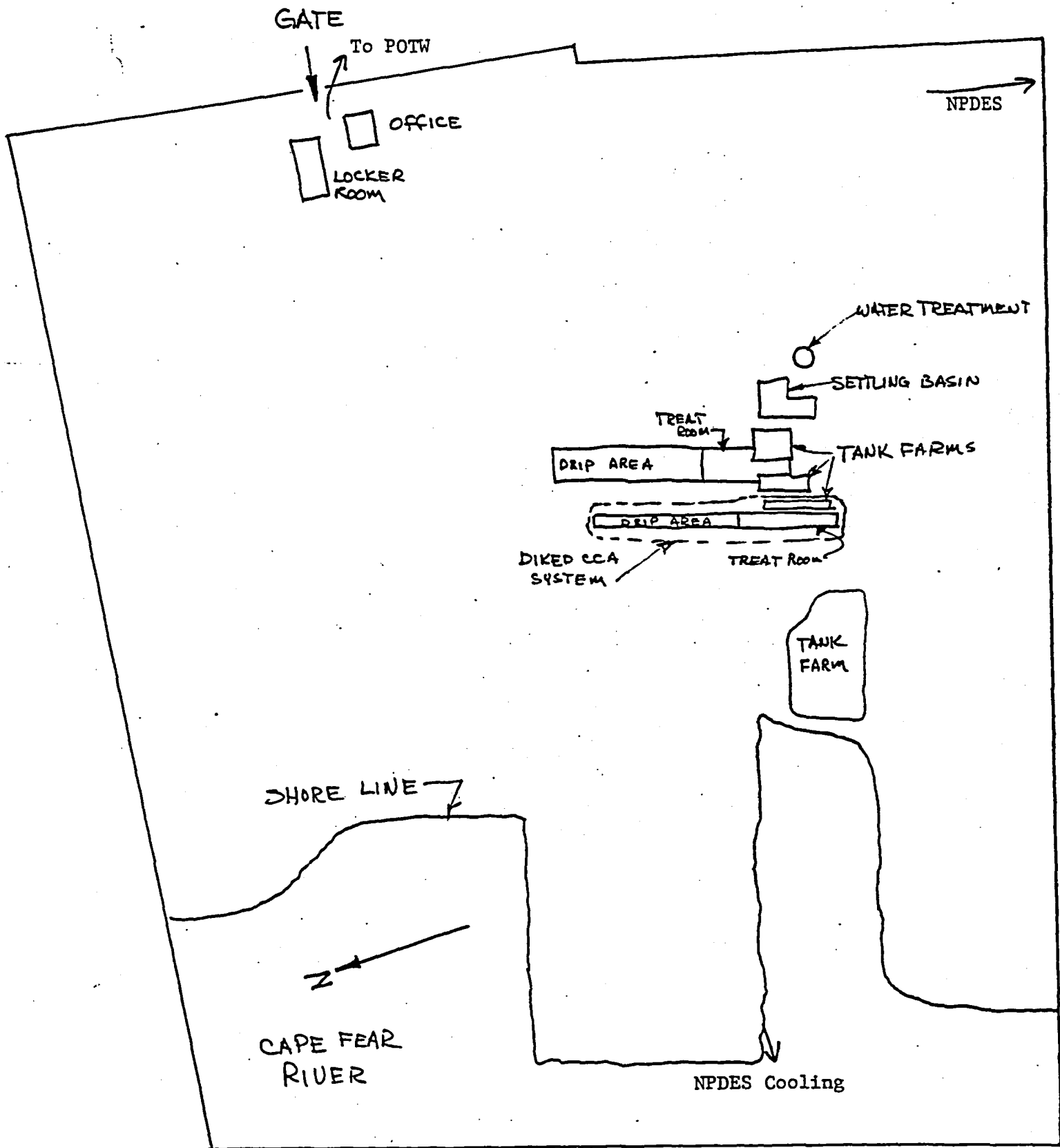
NOTIF. POSTMARKED DATE: 81/06/09 SIGNATURE PRESENT: YES DATE OF LAST UPDATE: 81/07/22  
 -----

TYPE OF FACILITY	TYPES OF WASTES	SOURCES OF WASTE
LANDFILL	BOTTOM SED SLUDGE FM WOOL TREATING PROC CRESOTE PENTHCHLOTOPHENOL ORGANICS PESTICIDES	OTHER-(SEE COMMENTS)

COMMENTS SEQ NO.  
 -----

SEE FILE 1  
 WOOD PRESERVING 400

WILMINGTON



**IV. DESCRIPTION OF HAZARDOUS WASTE (continued)**

**E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.**

Southern Wood Piedmont's Wilmington plant produces some sludge from wastewater treatment of water containing residual creosote and penta in diesel fuel wood preservatives. This sludge is a semisolid, composed of creosote fractions, sand, wood sugars, and sawdust contaminated with low levels of pentachlorophenol.

The oil recovery-water pollution system where this material is collected consists of a settling basin for oil recovery followed by advanced oil recovery and discharge to the city sewer.

The Wilmington plant also treats with Chromated Copper Arsenate. Some insoluble sludge is produced from the preservative reaction with wood extractives and the contamination of sand and sawdust with the preservative. Occasionally, sludge is produced on mixing the concentrate from the reaction with the dissolved salts in hard water, or for unknown reasons.

EPA I.D. NO. (enter from page 1)												
3	4	5	6	7	8	9	10	11	12	13	14	15
F	N	C	D	0	5	8	5	1	7	4	6	7
											T/A	C
											6	

**V. FACILITY DRAWING**  
All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

**VI. PHOTOGRAPHS**  
All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

**VII. FACILITY GEOGRAPHIC LOCATION**

LATITUDE (degrees, minutes, & seconds)						LONGITUDE (degrees, minutes, & seconds)					
3	4	1	2	4	5	7	7	5	7	1	5
65	66	67	68	69	70	72	73	74	75	76	77

**VIII. FACILITY OWNER**

A. If the facility owner is also the facility operator as listed in Section VIII on Form 1; "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER						2. PHONE NO. (area code & no.)					
3. STREET OR P.O. BOX						4. CITY OR TOWN		5. ST.		6. ZIP CODE	

**IX. OWNER CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type) Not required per 11/10/80 telephone conversation between Mr. Region IV, RCRA Activities, and Mr. Michael T. Breen of ITT Piedmont Company since City of Wilmington owns & leases only the land, not the	B. SIGNATURE Andrew Ryan	C. DATE SIGNED 10/31/80
--	-----------------------------	----------------------------

**X. OPERATOR CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type) C. A. Council - Executive V.P., Chief Operating Officer	B. SIGNATURE CA Council	C. DATE SIGNED 10/31/80
--	----------------------------	----------------------------



EPA I.D. NUMBER (enter from page 1)													FOR OFFICIAL USE ONLY											
W	N	C	D	0	5	8	5	1	7	4	6	7	T/A	C	1	W	DUP				T/A	C	2	DUP
1	2												13	14	15	1	2			13	14	15	23	24

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES																								
				1. PROCESS CODES (enter)						2. PROCESS DESCRIPTION (if a code is not entered in D(1))																		
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
1	K	0	0	1	3,000	G	S	0	4																			
2	D	0	0	4	11,000	P	S	0	1																			
3	D	0	0	7																								
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**III. PROCESSES (continued)**

**C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.**

**IV. DESCRIPTION OF HAZARDOUS WASTES**

**A. EPA HAZARDOUS WASTE NUMBER** — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

**B. ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

**C. UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

**D. PROCESSES**

**1. PROCESS CODES:**

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Notes: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

**2. PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

**NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
- Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

**EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below)** — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

FORM 3 RCRA	ENVIRONMENTAL PROTECTION AGENCY <b>HAZARDOUS WASTE PERMIT APPLICATION</b> Consolidated Permits Program (This information is required under Section 3005 of RCRA.)	I. EPA I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">9</td> <td style="width:10%;">F</td> <td style="width:10%;">N</td> <td style="width:10%;">C</td> <td style="width:10%;">D</td> <td style="width:10%;">0</td> <td style="width:10%;">5</td> <td style="width:10%;">8</td> <td style="width:10%;">5</td> <td style="width:10%;">1</td> <td style="width:10%;">7</td> <td style="width:10%;">4</td> <td style="width:10%;">6</td> <td style="width:10%;">7</td> <td style="width:10%;">T/A</td> <td style="width:10%;">C</td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> <td>13</td> <td>14</td> <td>15</td> <td>16</td> </tr> </table>	9	F	N	C	D	0	5	8	5	1	7	4	6	7	T/A	C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
9	F	N	C	D	0	5	8	5	1	7	4	6	7	T/A	C																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																			

FOR OFFICIAL USE ONLY		COMMENTS
APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	
23	24	

**II. FIRST OR REVISED APPLICATION**

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

**A. FIRST APPLICATION** (place an "X" below and provide the appropriate date)

1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

2. NEW FACILITY (Complete item below.)

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)	FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN																		
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>YR.</th> <th>MO.</th> <th>DAY</th> </tr> <tr> <td style="text-align: center;">7</td> <td style="text-align: center;">2</td> <td></td> </tr> <tr> <td style="text-align: center;">73</td> <td style="text-align: center;">74</td> <td style="text-align: center;">75</td> </tr> </table>	YR.	MO.	DAY	7	2		73	74	75	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>YR.</th> <th>MO.</th> <th>DAY</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">73</td> <td style="text-align: center;">74</td> <td style="text-align: center;">77</td> </tr> </table>	YR.	MO.	DAY				73	74	77
YR.	MO.	DAY																	
7	2																		
73	74	75																	
YR.	MO.	DAY																	
73	74	77																	

**B. REVISED APPLICATION** (place an "X" below and complete Item I above)

1. FACILITY HAS INTERIM STATUS

2. FACILITY HAS A RCRA PERMIT

**III. PROCESSES - CODES AND DESIGN CAPACITIES**

**A. PROCESS CODE** - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the form (Item III-C).

**B. PROCESS DESIGN CAPACITY** - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.

2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS - DESIGN CAPACITY	PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
<b>Storage:</b>			<b>Treatment:</b>		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
<b>Disposal:</b>					
INJECTION WELL	D79	GALLONS OR LITERS			
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D81	ACRES OR HECTARES			
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

**EXAMPLE FOR COMPLETING ITEM III** (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C	DUP	T/A	1	E
---	-----	-----	---	---

LINE NUMBER	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	LINE NUMBER	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)				1. AMOUNT	2. UNIT OF MEASURE (enter code)	
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 4	40,000	G		7				
2	S 0 1	1,100	G		8				
3					9				
4					10				

**VII. SIC CODES (4-digit, in order of priority)**

A. FIRST				B. SECOND			
C	7	2 4 9 1	(specify) Wood Preserving	C	7		(specify)
C. THIRD				D. FOURTH			
C	7		(specify)	C	7		(specify)

**VIII. OPERATOR INFORMATION**

A. NAME										B. Is the name listed in Item VIII-A also the owner?		
C	8 S O U T H E R N W O O D P I E D M O N T C O M P A N Y										<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO 66	

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)						D. PHONE (area code & no.)					
F = FEDERAL		M = PUBLIC (other than federal or state)		P (specify) Corporation		8 0 3		5 7 6		7 6 6 0	
S = STATE		O = OTHER (specify)									
P = PRIVATE											

E. STREET OR P.O. BOX

P . O . B O X 5 4 4 7

F. CITY OR TOWN				G. STATE		H. ZIP CODE		IX. INDIAN LAND	
B S P A R T A N B U R G				S C		2 9 3 0 4		Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO 52	

**X. EXISTING ENVIRONMENTAL PERMITS**

A. NPDES (Discharges to Surface Water)						D. PSD (Air Emissions from Proposed Sources)					
9 N N C 0 0 0 0 7 6 1						9 P					
B. UIC (Underground Injection of Fluids)						E. OTHER (specify)					
9 U						2 6 5 2 (specify) Wastewater Treatment					
C. RCRA (Hazardous Wastes)						E. OTHER (specify)					
9 R						2 7 0 4 R (specify) Boiler Operating Permit					

**XI. MAP**

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility; the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

**XII. NATURE OF BUSINESS (provide a brief description)**

Southern Wood Piedmont is a wood preserving company, supplying pressure-treated crossties, switchties, utility poles, lumber, floorblock, crossarms and specialty items. The preservatives used are coal tar creosote, pentachlorophenol in diesel oil (penta) and chromated copper arsenate (CCA).

Southern Wood Piedmont processes its wooden raw materials into desired products, then the material is dried by natural or artificial means. The artificial means are: steaming for softwoods, and vapor drying for hardwoods. Kiln drying is also used.

After drying, the products are treated, stored until needed, and shipped to customers.

**XIII. CERTIFICATION (see instructions)**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)		B. SIGNATURE		C. DATE SIGNED	
C, A. Council Executive V.P./Chief Operating Officer		<i>C.A. Council</i>		10/31/80	

**COMMENTS FOR OFFICIAL USE ONLY**

Please print or type in the unshaded areas on y  
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FOR: 1 GENERAL		U.S. ENVIRONMENTAL PROTECTION AGENCY <b>GENERAL INFORMATION</b> Consolidated Permits Program (Read the "General Instructions" before starting.)		I. EPA I.D. NUMBER F N C D 0 5 8 5 1 7 4 6 7	
LABEL ITEMS		PLEASE PLACE LABEL IN THIS SPACE		GENERAL INSTRUCTIONS	
I. EPA I.D. NUMBER				If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.	
III. FACILITY NAME					
V. FACILITY MAILING ADDRESS					
VI. FACILITY LOCATION					

**II. POLLUTANT CHARACTERISTICS**

**INSTRUCTIONS:** Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS	MARK "X"		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X			F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

**III. NAME OF FACILITY**

1 SOUTHERN WOOD PIEDMONT - WILMINGTON

**IV. FACILITY CONTACT**

A. NAME & TITLE (last, first, & title) MORGAN JOE III, ENVIR. MGR.

B. PHONE (area code & no.) 803 576 7660

**V. FACILITY MAILING ADDRESS**

A. STREET OR P.O. BOX P.O. BOX 5447

B. CITY OR TOWN SPARTANBURG

C. STATE SC

D. ZIP CODE 29304

**VI. FACILITY LOCATION**

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER P.O. BOX 450 GREENFIELD ST.

B. COUNTY NAME NEW HANOVER

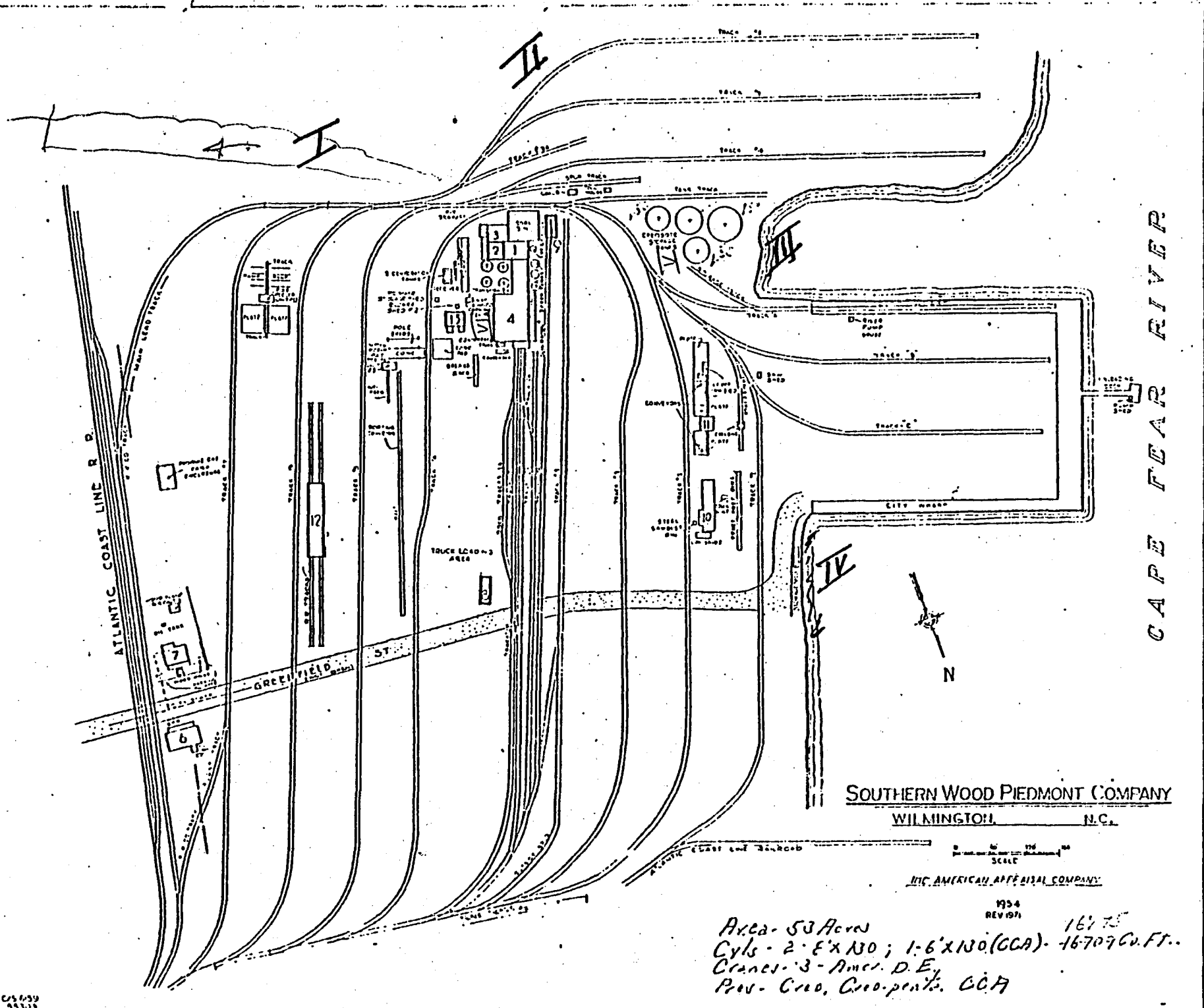
C. CITY OR TOWN WILMINGTON

D. STATE NC

E. ZIP CODE 28401

F. COUNTY CODE (if known)

CONTINUE ON REVER



SOUTHERN WOOD PIEDMONT COMPANY  
 WILMINGTON, N.C.

SCALE  
 0 20 40 60 80

ITC AMERICAN APPRAISAL COMPANY

1954  
 REV 071

Area - 53 Acres  
 Cyls - 2' E x 130; 1-6' x 130 (CCA) - 16775  
 Cranes - 3 - Amer. D. E.  
 Pts. - Ciro, Ciro. pen. GCA

05639  
 33303

**Notification of Hazardous Waste Site**

**Side Two**

**F Waste Quantity:**

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

**Facility Type**

- 1.  Piles
- 2.  Land Treatment
- 3.  Landfill
- 4.  Tanks
- 5.  Impoundment
- 6.  Underground Injection
- 7.  Drums, Above Ground
- 8.  Drums, Below Ground
- 9.  Other (Specify) \_\_\_\_\_

**Total Facility Waste Amount**

cubic feet 22,604

gallons \_\_\_\_\_

**Total Facility Area**

square feet \_\_\_\_\_

acres 0.249

**G Known, Suspected or Likely Releases to the Environment:**

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

- Known
- Suspected
- Likely
- None
- Possibility

Note: Items Hand I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

**H Sketch Map of Site Location: (Optional)**

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

**I Description of Site: (Optional)**

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

**J Signature and Title:**

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name C. A. Council  
Vice President, Chief Operating Officer  
 Southern Wood Piedmont Company  
 Street P. O. Box 5447  
 City Spartanburg State SC Zip Code 29304  
 Signature C. A. Council Date 6/5/81

- Owner, Present
- Owner, Past
- Transporter
- Operator, Present
- Operator, Past
- Other

# EPA Notification of Hazardous Waste Site

United States  
Environmental Protection  
Agency  
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

NCD058517467

### 1 Person Required to Notify:

Enter the name and address of the person or organization required to notify.

Name ITT Rayonier, Inc.  
Street P. O. Box 45165  
City Atlanta State GA Zip Code 30320

### 2 Site Location:

Enter the common name (if known) and actual location of the site.

Name of Site Southern Wood Piedmont Company  
Street Foot of Greenfield Street  
City Wilmington County New Hanover State NC Zip Code 28401

### 3 Person to Contact:

Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title) Burdell, Charles-Dir. Environmental Affairs  
Phone 404/996-1460

### 4 Dates of Waste Handling:

Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year) 1933 To (Year) Present

### 5 Waste Type: Choose the option you prefer to complete

**Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item 1—Description of Site.**

**General Type of Waste:**  
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

- 1.  Organics
- 2.  Inorganics
- 3.  Solvents
- 4.  Pesticides
- 5.  Heavy metals
- 6.  Acids
- 7.  Bases
- 8.  PCBs
- 9.  Mixed Municipal Waste
- 10.  Unknown
- 11.  Other (Specify)

**Source of Waste:**  
Place an X in the appropriate boxes.

- 1.  Mining
- 2.  Construction
- 3.  Textiles
- 4.  Fertilizer
- 5.  Paper/Printing
- 6.  Leather Tanning
- 7.  Iron/Steel Foundry
- 8.  Chemical, General
- 9.  Plating/Polishing
- 10.  Military/Ammunition
- 11.  Electrical Conductors
- 12.  Transformers
- 13.  Utility Companies
- 14.  Sanitary/Refuse
- 15.  Photofinish
- 16.  Lab/Hospital
- 17.  Unknown
- 18.  Other (Specify)

Wood Preserving

**Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).**

**Specific Type of Waste:**  
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

K001
U-051
U-242

<i>Wood Preserving</i>
<i>Creosote</i>
<i>PCP</i>

<i>PCP - Grants</i>